



An Audit Report on

# **Contract Change Management at the Department of Transportation**

March 2020  
Report No. 20-027



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## Overall Conclusion

The Department of Transportation (Department) has processes in place for the review and approval of highway construction and maintenance contract change orders. In addition, the Department executed construction and maintenance contract change orders in accordance with applicable requirements.

**Construction contract change orders.** The Department should ensure that it:

- Determines whether documentation of verbal approvals is required for change orders, as it is for certain Department processes.
- Documents all required reviews, including environmental assessments.

**Maintenance contract change orders.** The Department should improve processes to ensure that it:

- Executes change orders prior to beginning work.
- Affixes professional engineering seals.
- Documents and maintains cost adjustment support.

**Bonds and Reporting.** The Department ensured that construction and maintenance contractors obtained performance and payment bonds for the original contract amounts as required by Texas Government Code, Section 2253.021. The Department also semiannually published information about completed highway construction projects on its website in compliance with Texas Transportation Code, Section 201.812.

**Information Technology.** The Department should strengthen certain controls relating to its back-up and disaster recovery plan and logical access for its construction and maintenance contract management information system.

Table 1 on the next page presents a summary of the findings in this report and the related issue ratings. (See Appendix 2 for more information about the issue rating classifications and descriptions.)

### Contract Change Orders

The Department of Transportation (Department) processes two types of change orders: construction and maintenance. A change order is a written order to a contractor detailing changes to the specified work, item quantities, or any other contract modifications. A change order is used to amend or extend a contract if the changes or alterations in quantities significantly change the character of work or if item unit prices were not included in the original contract.

During fiscal years 2018 and 2019, the Department processed 11,015 change orders totaling \$882,351,487 (see Chapter 1 for additional information related to change orders processed during that time frame).

Source: The Department.

Table 1

Summary of Chapters/Subchapters and Related Issue Ratings		
Chapter/ Subchapter	Title	Issue Rating <sup>a</sup>
1	Summary of the Department’s Contract Change Orders	Not Rated
2-A	The Department Executed Construction Contract Change Orders as Required; However, It Should Ensure Consistency in Documenting Certain Approvals	Medium
2-B	The Department Approved Maintenance Contract Change Orders as Required; However, Improvements Are Necessary to Help Ensure That Change Orders Are Processed Consistently	Medium
3	The Department Required Contractors to Obtain Performance and Payment Bond Coverage and Complied with Statutory Reporting Requirements	Low
4	The Department Should Strengthen Certain Controls Over Its Construction and Maintenance Contract Management Information System	High
<p><sup>a</sup> A subchapter is rated <b>Priority</b> if the issues identified present risks or effects that if not addressed could critically affect the audited entity’s ability to effectively administer the program(s)/function(s) audited. Immediate action is required to address the noted concern and reduce risks to the audited entity.</p> <p>A subchapter is rated <b>High</b> if the issues identified present risks or effects that if not addressed could substantially affect the audited entity’s ability to effectively administer the program(s)/function(s) audited. Prompt action is essential to address the noted concern and reduce risks to the audited entity.</p> <p>A subchapter is rated <b>Medium</b> if the issues identified present risks or effects that if not addressed could moderately affect the audited entity’s ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.</p> <p>A subchapter is rated <b>Low</b> if the audit identified strengths that support the audited entity’s ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity’s ability to effectively administer the program(s)/function(s) audited.</p>		

Auditors communicated other, less significant issues separately in writing to the Department management.

### ***Summary of Management’s Response***

At the end of certain chapters in this report, auditors made recommendations to address the issues identified during this audit. The Department agreed with the recommendations in this report.

### ***Audit Objective and Scope***

The objective of this audit was to determine whether the Department has processes and related controls to help ensure that it manages highway construction and maintenance contract changes in accordance with applicable requirements.

The scope of this audit covered highway construction and maintenance contract change orders approved during fiscal years 2018 and 2019.

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# Detailed Results

Chapter 1

## Summary of the Department's Contract Change Orders

The Department of Transportation (Department) conducts its primary activities in 25 geographical districts (Districts). Each District, managed by a district engineer, is responsible for the planning, design, construction, maintenance, and operation of its transportation infrastructure. Local field offices within the District are known as area offices, which are managed by an area engineer.

The Department's *Construction Contract Administration Manual* and *Maintenance Contract Manual* establish policies and provide guidance to the individual Districts for administering construction and maintenance contracts, including change orders. In addition, a 2012 internal Department memorandum authorizes district engineers to provide signature approval authority to execute change orders, and they can delegate that authority to deputy district engineers, district directors, and area engineers.

### Construction and Maintenance Contract Change Orders by District

The Department processed 11,015 highway construction and maintenance contract change orders totaling \$882,351,487 between September 1, 2017, and August 31, 2019.

Table 2 shows that construction change orders totaled \$546,460,426, or 61.9 percent of the total cost of all change orders that the Department processed during that time frame. The Dallas, Fort Worth, Houston, and San Antonio districts combined accounted for \$312,794,248, or 57.2 percent of the total cost for construction change orders.

Table 2

The Department's Construction Change Orders Processed by District September 1, 2017, Through August 31, 2019			
District	Change Order Amount	Percentage of Total Amount of District Change Orders	Number of Change Orders Processed
Abilene	\$ 10,905,187	2.0%	133
Amarillo	9,392,014	1.7%	139
Atlanta	11,790,746	2.2%	153
Austin	17,327,024	3.2%	557
Beaumont	15,959,028	2.9%	298
Brownwood	7,706,577	1.4%	109

The Department's Construction Change Orders Processed by District September 1, 2017, Through August 31, 2019			
District	Change Order Amount	Percentage of Total Amount of District Change Orders	Number of Change Orders Processed
Bryan	26,463,251	4.8%	237
Childress	602,927	0.1%	37
Corpus Christi	17,640,055	3.2%	367
Dallas	77,852,250	14.2%	1,667
El Paso	12,112,660	2.2%	188
Fort Worth	47,011,049	8.6%	709
Houston	140,148,915	25.6%	1,383
Laredo	2,750,078	0.5%	165
Lubbock	7,956,002	1.5%	105
Lufkin	4,370,434	0.8%	150
Odessa	36,736,522	6.7%	98
Paris	(7,183,135) <sup>a</sup>	(1.3%)	137
Pharr	(19,037,911) <sup>b</sup>	(3.5%)	188
San Angelo	12,596,312	2.3%	123
San Antonio	47,782,034	8.7%	779
Tyler	7,880,819	1.4%	236
Waco	46,171,780	8.4%	423
Wichita Falls	3,565,373	0.7%	63
Yoakum	7,960,435	1.5%	154
<b>Totals</b>	<b>\$546,460,426</b>	<b>100.0% <sup>c</sup></b>	<b>8,598</b>
<sup>a</sup> The change orders for the Paris district included the termination of a portion of a project totaling \$9,665,094, which resulted in a negative change order amount. <sup>b</sup> The change orders for the Pharr district included the termination of a portion of a project totaling \$38,476,526, which resulted in a negative change order amount. <sup>c</sup> Percentages do not sum exactly due to rounding.			

Source: Based on the Department's data.

Table 3 on the next page shows that maintenance change order amounts for the Beaumont, Bryan, Corpus Christi, Dallas, Houston, and San Antonio Districts combined totaled \$168,030,755, or 50.0 percent of the total cost for maintenance change orders processed between September 1, 2017, and August 31, 2019. The \$335,891,061 total for all Districts includes certain maintenance contracts that were extended through a change order.

Table 3

The Department's Maintenance Change Orders Processed by District September 1, 2017, Through August 31, 2019			
District	Change Order Amount	Percentage of Total Amount of District Change Orders	Number of Change Orders Processed
Abilene	\$ 8,509,392	2.5%	60
Amarillo	3,907,700	1.2%	41
Atlanta	10,092,212	3.0%	64
Austin	15,069,117	4.5%	146
Beaumont	22,637,911	6.7%	122
Brownwood	(480,055)	(0.1%)	44
Bryan	21,441,735	6.4%	118
Childress	5,661,609	1.7%	14
Corpus Christi	30,961,347	9.2%	198
Dallas	30,072,708	9.0%	176
El Paso	7,406,504	2.2%	54
Fort Worth	18,890,109	5.6%	149
Houston	20,363,186	6.1%	194
Laredo	4,273,386	1.3%	153
Lubbock	5,406,534	1.6%	35
Lufkin	10,442,760	3.1%	103
Odessa	9,308,455	2.8%	96
Paris	17,829,906	5.3%	81
Pharr	6,990,328	2.1%	71
San Angelo	4,686,183	1.4%	41
San Antonio	42,553,868	12.7%	90
Tyler	13,564,902	4.0%	77
Waco	8,794,218	2.6%	109
Wichita Falls	6,234,774	1.9%	59
Yoakum	8,734,035	2.6%	72
Maintenance Division <sup>a</sup>	2,538,237	0.8%	50
<b>Totals</b>	<b>\$ 335,891,061</b>	<b>100.0% <sup>b</sup></b>	<b>2,417</b>
<sup>a</sup> The Department's Maintenance Division manages selected change orders.			
<sup>b</sup> Percentages do not sum exactly due to rounding.			

Source: Based on the Department's data.

### Payments to Contractors

The Department closed 3,822 construction and maintenance contracts from September 1, 2017, to August 31, 2019.

An analysis of construction contracts closed during that time period shows that the Department paid a total of \$215,863,941, or 3.5 percent, more than the original contracted amounts. Table 4 shows the comparison by district of the Department's original construction contracted amounts and the final payment amounts to the contractors. According to the Department, its target is to contain construction change order costs and overruns at five percent or less than a contract's original amount.

Table 4

Comparison of Construction Contract Amounts to Amounts Paid for Projects Closed from September 1, 2017, to August 31, 2019				
District	Original Contracted Amount	Amount Paid to Contractors (As of September 3, 2019)	Amount Paid Above or Below Original Contracted Amount	Percentage Paid Above or Below Original Contracted Amount
Abilene	\$ 119,033,681	\$ 124,247,824	\$ 5,214,143	4.4%
Amarillo	143,504,384	150,683,497	7,179,113	5.0%
Atlanta	180,624,783	197,936,152	17,311,369	9.6%
Austin	354,177,129	378,384,947	24,207,818	6.8%
Beaumont	186,565,148	188,721,652	2,156,504	1.2%
Brownwood	92,956,993	95,911,149	2,954,156	3.2%
Bryan	147,891,398	154,975,040	7,083,642	4.8%
Childress	68,082,901	70,460,824	2,377,923	3.5%
Corpus Christi	410,415,426	435,719,468	25,304,042	6.2%
Dallas	919,305,282	949,617,687	30,312,405	3.3%
El Paso	85,685,097	94,680,420	8,995,323	10.5%
Fort Worth	309,869,874	326,183,540	16,313,666	5.3%
Houston	548,433,269	489,820,055	(58,613,214)	(10.7%)
Laredo	208,049,181	206,901,761	(1,147,420)	(0.6%)
Lubbock	303,998,925	314,218,725	10,219,800	3.4%
Lufkin	295,281,945	301,237,704	5,955,759	2.0%
Odessa	170,437,081	179,832,851	9,395,770	5.5%
Paris	178,541,390	176,163,850	(2,377,540)	(1.3%)
Pharr	198,839,243	214,190,749	15,351,506	7.7%
San Angelo	150,345,012	164,899,873	14,554,861	9.7%
San Antonio	369,833,186	404,495,480	34,662,294	9.4%
Tyler	317,286,434	340,276,863	22,990,429	7.2%
Waco	204,084,470	208,256,133	4,171,663	2.0%
Wichita Falls	122,082,612	126,600,346	4,517,734	3.7%
Yoakum	149,943,219	156,715,414	6,772,195	4.5%
<b>Totals</b>	<b>\$6,235,268,063</b>	<b>\$6,451,132,004</b>	<b>\$215,863,941</b>	<b>3.5%</b>

Source: Based on the Department's data.



Table 5 shows that during the same time period, the Department paid \$160,036,398, or 17.7 percent, more than original maintenance contracted amounts. One reason for the high percentage rate for maintenance change orders may be the result of the Department’s ability to extend routine maintenance contracts by means of processing a change order. The Department includes special provisions in its maintenance contracts that allow contracts to be extended (when mutually agreed in writing) up to a period of time not to exceed the original contract time. The Department states that this contractual ability enables it to retain contractors performing the work activities well, at fair and reasonable contract prices. However, auditors could not differentiate in the data provided between change orders processed to add services and/or materials and those processed to extend a contract.

Table 5

Comparison of Maintenance Contract Amounts to Amounts Paid for Projects Closed from September 1, 2017, to August 31, 2019				
District	Original Contracted Amount	Amount Paid to Contractors (As of September 3, 2019)	Amount Paid Above or Below Original Contracted Amount	Percentage Paid Above or Below Original Contracted Amount
Abilene	\$ 17,023,284	\$ 20,452,025	\$ 3,428,741	20.1%
Amarillo	19,837,408	23,825,112	3,987,704	20.1%
Atlanta	24,292,559	41,736,265	17,443,706	71.8%
Austin	35,808,547	38,693,227	2,884,680	8.1%
Beaumont	44,959,468	57,965,366	13,005,898	28.9%
Brownwood	26,908,090	30,244,404	3,336,314	12.4%
Bryan	41,094,932	43,992,314	2,897,382	7.1%
Childress	3,919,034	5,508,404	1,589,370	40.6%
Corpus Christi	42,947,592	50,472,826	7,525,234	17.5%
Dallas	112,681,285	120,279,887	7,598,602	6.7%
El Paso	35,053,803	48,361,825	13,308,022	38.0%
Fort Worth	57,887,325	69,704,000	11,816,675	20.4%
Houston	116,607,770	120,277,817	3,670,047	3.1%
Laredo	20,143,851	23,333,678	3,189,827	15.8%
Lubbock	13,623,609	18,360,152	4,736,543	34.8%
Lufkin	25,182,745	26,686,201	1,503,456	6.0%
Odessa	19,796,556	24,573,948	4,777,392	24.1%
Paris	34,320,949	41,751,693	7,430,744	21.7%
Pharr	42,405,986	57,454,097	15,048,111	35.5%
San Angelo	14,401,010	19,530,974	5,129,964	35.6%
San Antonio	34,995,677	46,348,566	11,352,889	32.4%
Tyler	35,454,512	40,351,346	4,896,834	13.8%
Waco	35,161,468	34,526,283	(635,185)	(1.8%)

Comparison of Maintenance Contract Amounts to Amounts Paid for Projects Closed from September 1, 2017, to August 31, 2019				
District	Original Contracted Amount	Amount Paid to Contractors (As of September 3, 2019)	Amount Paid Above or Below Original Contracted Amount	Percentage Paid Above or Below Original Contracted Amount
Wichita Falls	16,489,816	17,643,897	1,154,081	7.0%
Yoakum	31,165,155	40,124,522	8,959,367	28.7%
<b>Totals</b>	<b>\$902,162,431</b>	<b>\$1,062,198,829</b>	<b>\$160,036,398</b>	<b>17.7%</b>

Source: Based on the Department's data.

## ***The Department Ensured That Construction and Maintenance Contract Change Orders Were Appropriately Executed; However, Policies and Procedures Should Be Improved to Help Ensure That Change Orders Are Processed Consistently***

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The Department executed highway contract change orders as required; however, it should ensure that all required reviews are completed and documented for construction change orders and that maintenance change orders are processed consistently.

Chapter 2-A

### **The Department Executed Construction Contract Change Orders as Required; However, It Should Ensure Consistency in Documenting Certain Approvals**

**Chapter 2-A  
Rating:  
Medium <sup>1</sup>**

The Department executed construction change orders as required and had documentation to support that cost adjustments and price justifications occurred for most of the change orders tested. However, the Department should ensure that it (1) determines whether documentation of verbal approvals is required for change orders, as it is for certain Department processes, and (2) documents all required reviews, including environmental assessments.

#### **Construction Change Order Execution**

The Department executed change orders in accordance with the Districts' signature approval authority for all 63 construction change orders tested from the Houston, Odessa, and Waco Districts. In addition, all change orders tested were affixed with a professional engineer's seal as required in the Department's *Construction Contract Administration Manual*.

While the Department executed change orders in accordance with the Districts' signature approval authority, the Districts began work prior to a change order execution for 14 (22.2 percent) of 63 construction change orders tested. The *Construction Contract Administration Manual* requires Districts to ensure that the change order is approved prior to beginning the related work. Although the *Construction Contract Administration Manual* allows for verbal approval to begin change work, the Department did not document whether a verbal approval occurred for those 14 change orders. While certain sections of the *Construction Contract Administration Manual* require personnel to document verbal direction or approval provided to

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<sup>1</sup> The risk related to the issues discussed in Chapter 2-A is rated as Medium because they present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.

contractors in the project records, there is no specific guidance to document verbal approval for change orders.

Not ensuring that all change orders have documented approval prior to beginning work increases the risk that the Department may be responsible for paying for unapproved changes. The Department asserted that work would not begin on a change order unless it was approved by the Districts because contractors would want assurance that the work performed would be eligible for payment.

### **Construction Change Order Documentation**

**Cost Adjustments.** The Department had documentation to support cost adjustments for all but 1 of the 63 change orders tested; that 1 change order lacked support for only the quantities of certain line items.

**Price Justifications.** In addition, for all but 1 of the construction change orders tested that required a price justification, the Department had documentation to support that the price justification occurred. The Department's *Construction Contract Administration Manual* requires Districts to include the cost breakdowns and price justifications for any added items.

**Reason Codes.** The primary reason codes that the Department used to describe why a construction change order occurred were appropriate for all change orders tested.

**Environmental Assessments.** The Department's practices concerning environmental approval do not always align with policy requirements. For 43 (87.8 percent) of 49 change orders tested that were for non-administrative changes, the Districts did not have documentation to support that their environmental coordinators reviewed and approved the change orders as required. The Department's *Construction Contract Administration Manual* requires each District to forward all proposed change orders to its environmental coordinator for review. While the supporting documentation for most of those 43 change orders contained statements indicating that there were no environmental impacts or issues, it could not be determined based on that documentation whether the environmental coordinator performed an assessment. Although the Department's current policy does not allow for exceptions, the Department asserted that the need for environmental assessments by the Districts' environmental coordinators is dependent on the type of work performed. Because Department processes for performing and documenting environmental reviews and the related policy do not align, Districts may not consistently perform environmental assessments as intended.

## Recommendations

For construction change orders, the Department should:

- Determine how Districts should document verbal approvals given to contractors to begin work prior to a change order execution.
- Ensure that its process for environmental reviews and related policy requirements are in alignment.

## Management's Response

*The Construction Division will update and reinforce Department policies and procedures to require consistent documentation of verbal approvals to begin change work and District Environmental Quality Coordinator (DEQC) environmental reviews.*

*Implementation Date: March 31, 2021*

*Responsible Person: Construction Division Director*

Chapter 2-B

## **The Department Approved Maintenance Contract Change Orders as Required; However, Improvements Are Necessary to Help Ensure That Change Orders Are Processed Consistently**

**Chapter 2-B  
Rating:**  
Medium <sup>2</sup>

The Department executed maintenance change orders as required. However, improvements are necessary to help ensure consistency for (1) work that begins prior to change order execution, (2) the affixing of professional engineering seals, and (3) the documentation and maintenance of cost adjustment support.

### **Maintenance Change Order Execution**

The Department executed change orders in accordance with the District's signature approval authority for all 64 maintenance change orders tested from the Atlanta, Austin, and Corpus Christi Districts.

While the Department executed change orders in accordance with the District's signature approval authority, work began prior to the change order execution for 10 (15.9 percent) of 63 change orders tested that had work

<sup>2</sup> The risk related to the issues discussed in Chapter 2-B is rated as Medium because they present risks or effects that if not addressed could moderately affect the audited entity's ability to effectively administer program(s)/function(s) audited. Action is needed to address the noted concern and reduce risks to a more desirable level.

activity. The Department's *Maintenance Contract Manual* requires change orders to be prepared, negotiated, and executed before the work begins. Unlike the *Construction Contract Administration Manual*, the *Maintenance Contract Manual* does not allow for verbal approval to begin work. Furthermore, while 4 of those 10 change orders were described as emergency related, which could have necessitated work to begin as soon as possible, the *Maintenance Contract Manual* does not define approval time frames for change orders or amendments related to emergency work. Not ensuring that maintenance change order work begins only after execution increases the risk that the Department may be responsible for paying for unapproved changes. The Department asserted that contractors would not begin work on a change order unless it was approved by the Districts because contractors would want assurance that the work performed will be eligible for payment.

**Professional Engineer's Seal.** The Department did not affix a professional engineer seal for 5 (10.0 percent) of 50 change orders tested that were subject to sealing requirements. The *Maintenance Contract Manual* provides guidance to Districts on whether a professional engineer's seal is required or optional. The Department asserted that one of the five change orders was not sealed due to an oversight, while the remaining four change orders were not sealed due to a misinterpretation of the sealing requirements. Not ensuring that a professional engineer's seal is affixed to a change order when required increases the risk that work detailed in the change order was not reviewed by a licensed engineer.

#### **Maintenance Change Order Documentation**

**Cost Adjustments.** The Department did not have documentation to support cost adjustments for 6 (9.5 percent) of 63 change orders tested that had work activity. For two of those six change orders, certain line item quantities were increased to an amount beyond what was allowed in the extension contract provision that the Department used to extend the associated contracts. For the remaining four change orders, the Districts did not have documentation to support certain line item quantities or costs. The *Maintenance Contract Manual* does not contain guidance on specific documentation to maintain for cost adjustments; however, a 2012 internal Department memorandum requires Districts to document change order information in writing to support actions and decisions. By not documenting cost adjustments or maintaining that documentation, the Department increases the risk that line items in the change order may be unsupported during the approval process.

**Reason Codes.** The primary reason codes that the Department used to describe the need for maintenance change orders were appropriate for most change orders tested. For two change orders tested, the Department used the codes

for additional work desired and Department-directed work, when it could have used existing specific reason codes to describe the changes, which were related to an emergency event and a contract termination.

### **Recommendations**

For maintenance change orders, the Department should ensure that:

- Its change order execution process and related policy requirements align, including approval time frames for emergency change orders or amendments. If verbal approval is allowed, determine how Districts should document verbal approvals given to contractors to begin work prior to a change order execution.
- Districts affix a professional engineering seal to change orders as required.
- It documents and maintains cost adjustment support.

### **Management's Response**

*The Maintenance Contract Manual will be amended to allow revisions of contract quantities or alterations in the work, in writing and at any time, to satisfactorily complete the project. As agreed in the original contract, the contractor will perform the work as increased, decreased, or altered. The Maintenance Contract Manual will be updated to require amendment to the contract work by change order (CO) whenever a significant change in the character of the work occurs or a time extension is granted and to require that the CO be approved before beginning the changed or altered work; the Area Engineer (AE) or their designee may give verbal or written approval at his or her discretion prior to formal approval in the highway construction and maintenance contract management information system.*

*The Maintenance Contract Manual will be amended to require all change orders to have a professional engineer's seal and signature and to require Districts to include cost breakdowns/price justifications for additional items considered fair and reasonable.*

**Implementation Date: August 31, 2020**

**Responsible Person: Maintenance Division Director**

## **The Department Required Contractors to Obtain Performance and Payment Bond Coverage and Complied with Statutory Reporting Requirements**

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**Chapter 3  
Rating:**  
Low<sup>3</sup>

The Department required contractors to obtain performance and payment bond coverage and complied with statutory reporting requirements.

### **Performance and Payment Bonds**

**Original Bond Amounts.** The Department ensured that construction and maintenance contractors obtained performance and payment bonds in the original contract amount as required by Texas Government Code, Section 2253.021, for all construction and maintenance change orders tested that had applicable bond requirements (see text box for more information on bonds).

**Additional Bond Coverage for Change Orders.** The Department's *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*, states that the contractor is responsible for notifying the bond guarantors of any contract changes because change orders may affect the contract amounts. To assist the contractor with increases in bond premiums, the Department allows for an additional 1.0 percent of the total compensation for a change order to pay for the increase in bonds.

The Department's process does not include verification of whether the contractor obtained additional bond coverage if the total cost of a contract increased through a change order. However, for most change orders tested, the increased financial obligations were offset by prior contract payments; therefore, the remaining total costs for the projects' work were within the original bonded amounts.

### **Statutory Reporting on Completed Highway Construction Projects**

The Department complied with Texas Transportation Code, Section 201.812, reporting requirements by semiannually publishing information about

#### **Performance and Payment Bonds**

**Performance Bond:** A bond that protects the Department if the contractor does not perform work in accordance with the contract documents.

**Payment Bond:** A bond that protects payment bond beneficiaries who have a direct contractual relationship with the contractor or subcontractor.

Source: Texas Government Code, Section 2253.021.

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<sup>3</sup> The risk related to the issues discussed in Chapter 3 is rated as Low because the audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited or the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.



completed highway construction projects on its website. That reported information includes project schedules, budgets, and change orders.

## ***The Department Should Strengthen Certain Controls Over Its Construction and Maintenance Contract Management Information System***

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**Chapter 4  
Rating:  
High <sup>4</sup>**

The Department should strengthen certain controls related to (1) its back-up and disaster recovery plan and (2) logical access for its highway construction and maintenance contract management information system (information system).

The Department has implemented certain controls over the approval process of change orders in its information system.

**Back-up and Disaster Recovery Plan.** The Department established a back-up and disaster recovery plan for its information system; however, it should strengthen certain controls to help ensure compliance with applicable Department policy.

**Logical Access.** The Department did not perform an annual user access review for its information system to help ensure that access is restricted based on users' current job responsibilities, as required by Department policy. In addition, the Department has not configured certain password requirements in accordance with Department policy.

To minimize security risks, auditors communicated details about the Department's back-up and disaster recovery plan and logical access weaknesses directly to Department management in writing.

**Segregation of Duties.** The Department has application controls that require at least two different users to approve a change order in its information system.

### **Recommendations**

The Department should:

- Ensure that back-up and disaster recovery plans comply with Department policy.
- Perform annual user access reviews as required by Department policy and document the results of those reviews.

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<sup>4</sup> The risk related to the issues discussed in Chapter 4 is rated as High because they present risks or effects that if not addressed could substantially affect the audited entity's ability to effectively administer the program(s)/function(s) audited. Prompt action is essential to address the noted concern and reduce risks to the audited entity.

- Ensure that password configurations comply with Department policy.

### **Management's Response**

*The Information Technology Division (ITD) will assist applicable business owners in developing remediation plans that address the identified issues regarding back-up and disaster recovery testing, user access reviews, and password policy compliance. ITD will additionally assist business owners in any implementations that require ITD Support.*

*The identified security weaknesses will be tracked by ITD to ensure the business owners are effectively implementing the remediation plans.*

*Implementation Date: June 30, 2020*

*Responsible Person: Chief Information Security Officer*

# Appendices

Appendix 1

## **Objective, Scope, and Methodology**

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### **Objective**

The objective of this audit was to determine whether the Department of Transportation (Department) has processes and related controls to help ensure that it manages highway construction and maintenance contract changes in accordance with applicable requirements.

### **Scope**

The scope of this audit covered highway construction and maintenance contract change orders approved during fiscal years 2018 and 2019.

### **Methodology**

The audit methodology included collecting and reviewing documentation for the Department change orders approved during fiscal years 2018 and 2019. Activities included conducting interviews with Department staff; reviewing applicable statutes, rules, and Department policies and procedures; analyzing change order data; performing selected tests and procedures on the information obtained; and analyzing and evaluating the results of those tests.

### **Data Reliability and Completeness**

Auditors reviewed change order data from the Department's highway construction and maintenance contract management information system for construction and maintenance change orders approved during fiscal years 2018 and 2019. Auditors' procedures to review that change order data for completeness included (1) observing the data extract for the queries and (2) reviewing the parameters used to extract the data. Auditors determined that the data was sufficiently reliable for the purpose of this audit.

### **Sampling Methodology**

Auditors analyzed the change orders the Department approved during fiscal years 2018 and 2019 and considered certain factors such as: the total contract and change orders amount; the percentage that the contract original amount increased based on change orders approved; and the District type (metro, urban, or rural). Based on that analysis, auditors selected the Atlanta, Austin, Corpus Christi, Houston, Odessa, and Waco Districts for

sampling. Auditors used dollar-unit sampling<sup>5</sup> to select 20 approved change orders at each District. In addition, auditors selected additional change orders as needed from each District to gain coverage of certain risk-based factors. All of the sample items were not representative of the population; therefore, it would not be appropriate to project the test results to the population.

Information collected and reviewed included the following:

- Department construction and maintenance contracts.
- Department contract change order documentation, including approvals, price justifications, and other supporting documentation.
- Ad hoc reports for the change orders selected for testing.

Procedures and tests conducted included the following:

- Interviewed Department staff.
- Reviewed the Department's contract change order policies and procedures.
- Tested approved change orders for supporting documentation and proper approvals.
- Determined whether Department engineers were currently licensed in Texas.
- Determined whether the Department complied with reporting requirements for completed highway construction projects.

Criteria used included the following:

- Department policies and manuals.
- Texas Government Code, Section 2253.021.
- Texas Transportation Code, Section 201.812.

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<sup>5</sup> Under this methodology, larger dollar amounts have a higher likelihood of being selected for testing.

## Project Information

Audit fieldwork was conducted from August 2019 to March 2020. We conducted this performance audit in accordance with generally accepted government auditing standards.<sup>6</sup> Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The following members of the State Auditor's staff performed the audit:

- Ryan Marshall Belcik, MBA, CISA (Project Manager)
- Ileana Barboza, MBA, CGAP (Assistant Project Manager)
- John Felchak
- Jamie Kelly, MBA
- Austin McCarthy, CPA
- Matthew J. Montgomery
- Dana Musgrave, MBA (Quality Control Reviewer)
- James Timberlake, CIA, CFE (Audit Manager)

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<sup>6</sup> United States Government Accountability Office's *Government Auditing Standards*, 2018 Revision.

## Issue Rating Classifications and Descriptions

Auditors used professional judgment and rated the audit findings identified in this report. Those issue ratings are summarized in the report chapters/sub-chapters. The issue ratings were determined based on the degree of risk or effect of the findings in relation to the audit objective.

In determining the ratings of audit findings, auditors considered factors such as financial impact; potential failure to meet program/function objectives; noncompliance with state statute(s), rules, regulations, and other requirements or criteria; and the inadequacy of the design and/or operating effectiveness of internal controls. In addition, evidence of potential fraud, waste, or abuse; significant control environment issues; and little to no corrective action for issues previously identified could increase the ratings for audit findings. Auditors also identified and considered other factors when appropriate.

Table 6 provides a description of the issue ratings presented in this report.

Table 6

Summary of Issue Ratings	
Issue Rating	Description of Rating
Low	The audit identified strengths that support the audited entity's ability to administer the program(s)/function(s) audited <u>or</u> the issues identified do not present significant risks or effects that would negatively affect the audited entity's ability to effectively administer the program(s)/function(s) audited.
Medium	Issues identified present risks or effects that if not addressed could <u>moderately affect</u> the audited entity's ability to effectively administer the program(s)/function(s) audited. Action is needed to address the noted concern(s) and reduce risks to a more desirable level.
High	Issues identified present risks or effects that if not addressed could <u>substantially affect</u> the audited entity's ability to effectively administer the program(s)/function(s) audited. Prompt action is essential to address the noted concern(s) and reduce risks to the audited entity.
Priority	Issues identified present risks or effects that if not addressed could <u>critically affect</u> the audited entity's ability to effectively administer the program(s)/function(s) audited. Immediate action is required to address the noted concern(s) and reduce risks to the audited entity.

## Internal Control Components

Internal control is a process used by management to help an entity achieve its objectives. *Government Auditing Standards* require auditors to assess internal control when internal control is significant to the audit objectives. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) established a framework for 5 integrated components and 17 principles of internal control which are listed in Table 7.

Table 7

Internal Control Components and Principles		
Component	Component Description	Principles
Control Environment	The control environment sets the tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure.	<ul style="list-style-type: none"> <li>▪ The organization demonstrates a commitment to integrity and ethical values.</li> <li>▪ The board of directors demonstrates independence from management and exercises oversight of the development and performance of internal control.</li> <li>▪ Management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of objectives.</li> <li>▪ The organization demonstrates a commitment to attract, develop, and retain competent individuals in alignment with objectives.</li> <li>▪ The organization holds individuals accountable for their internal control responsibilities in the pursuit of objectives.</li> </ul>
Risk Assessment	Risk assessment is the entity's identification and analysis of risks relevant to achievement of its objectives, forming a basis for determining how the risks should be managed.	<ul style="list-style-type: none"> <li>▪ The organization specifies objectives with sufficient clarity to enable the identification and assessment of risks relating to objectives.</li> <li>▪ The organization identifies risks to the achievement of its objectives across the entity and analyzes risks as a basis for determining how the risks should be managed.</li> <li>▪ The organization considers the potential for fraud in assessing risks to the achievement of objectives.</li> <li>▪ The organization identifies and assesses changes that could significantly impact the system of internal control.</li> </ul>
Control Activities	Control activities are the policies and procedures that help ensure that management's directives are carried out.	<ul style="list-style-type: none"> <li>▪ The organization selects and develops control activities that contribute to the mitigation of risks to the achievement of objectives to acceptable levels.</li> <li>▪ The organization selects and develops general control activities over technology to support the achievement of objectives.</li> <li>▪ The organization deploys control activities through policies that establish what is expected and procedures that put policies into action.</li> </ul>
Information and Communication	Information and communication are the identification, capture, and exchange of information in a form and time frame that enable people to carry out their responsibilities.	<ul style="list-style-type: none"> <li>▪ The organization obtains or generates and uses relevant, quality information to support the functioning of internal control.</li> <li>▪ The organization internally communicates information, including objectives and responsibilities</li> </ul>



Internal Control Components and Principles		
Component	Component Description	Principles
		<p>for internal control, necessary to support the functioning of internal control.</p> <ul style="list-style-type: none"> <li>▪ The organization communicates with external parties regarding matters affecting the functioning of internal control.</li> </ul>
Monitoring Activities	Monitoring is a process that assesses the quality of internal control performance over time.	<ul style="list-style-type: none"> <li>▪ The organization selects, develops, and performs ongoing and/or separate evaluations to ascertain whether the components of internal control are present and functioning.</li> <li>▪ The organization evaluates and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of directors, as appropriate.</li> </ul>

Source: Internal Control - Integrated Framework, Committee of Sponsoring Organizations of the Treadway Commission, May 2013.

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The Honorable Dennis Bonnen, Speaker of the House, Joint Chair  
The Honorable Jane Nelson, Senate Finance Committee  
The Honorable Robert Nichols, Member, Texas Senate  
The Honorable Giovanni Capriglione, House Appropriations Committee  
The Honorable Dustin Burrows, House Ways and Means Committee

### **Office of the Governor**

The Honorable Greg Abbott, Governor

### **Department of Transportation**

Members of the Texas Transportation Commission

Mr. J. Bruce Bugg Jr., Chair

Mr. Alvin New

Ms. Laura Ryan

Mr. Robert C. Vaughn

Mr. James Bass, Executive Director



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