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An Audit Report on

# **Routine Maintenance Contracts at the Department of Transportation**

**April 2006**

**Report No. 06-034**

# *Routine Maintenance Contracts at the Department of Transportation*

## *Overall Conclusion*

### Routine Maintenance Contracts

The Department of Transportation (Department) has adequate contract management processes and controls over routine maintenance contracts. It needs to improve and strengthen its processes in the areas of contract planning, price establishment, and monitoring. Specifically, auditors identified the following issues:

- Two of the Department's district offices that auditors visited (in Fort Worth and Houston) do not comply with Department policy regarding planning practices for contracted routine maintenance. These two district offices did not prepare an annual maintenance plan as required by the Department's contract planning guidelines.
- The district offices' estimates for the costs of services are not accurate, and competition among bidders should be increased. Collectively, **only 35 percent of three district offices' contract award amounts for fiscal years 2001 through 2005 were within 10 percent of the engineers' estimates.** During this period, the three district offices auditors visited entered into 1,014 contracts, of which 97 (10 percent) had one bidder and 251 (25 percent) had two bidders. Overall, approximately 34 percent of those three district offices' contracts for this period were one- and two-bid contract awards. Statewide, the Department's district offices, on average, awarded 31 percent of contracts after receiving one or two bids.
- The three district offices auditors visited did not have support to show that the required tests, material approvals, and inspections had been performed for the contracted projects. In 22 of 30 contracts tested, at least one of the inspection-related elements for which auditors tested could not be supported. The total

#### Background Information

The Department of Transportation (Department) conducts its primary activities in 25 geographical districts. Each district office, managed by a district engineer, is responsible for the design, location, construction, and maintenance of its area transportation systems. Local field offices within districts are known as area offices, and many districts also have separate maintenance offices. Functional divisions and offices headquartered in Austin provide administrative and technical support to the districts.

#### Department Contracts

During fiscal year 2005, the Department awarded \$269 million in routine and total maintenance contracts.

The Department enters into both routine maintenance contracts and total maintenance contracts. **Routine maintenance contracts** are issued for any routine or preventive maintenance activity, including but not limited to mowing; highway cleaning and sweeping; litter pickup; and the repair and replacement of metal beam guardrails, median barriers, and fences. **Total maintenance contracts** are generally long-term contracts in which the Department delegates highway and rest area maintenance to other entities. For example, in one such contract, the Department hired a contractor to perform all maintenance on the stretch of I-35 from Salado to Hillsboro over a period of five years.

award amount of these 22 contracts was \$8.9 million. In addition, **change orders should be more closely reviewed for pricing justification**, and projects should be closed out, or administratively completed, in a timely manner.

- The three district offices auditors visited are fully complying with the Department's procurement requirements for selecting qualified bidders and objectively awarding contracts.
- The three district offices auditors visited are ensuring that contract provisions hold contractors accountable for producing desired results.

### **Total Maintenance Contracts**

The Department also establishes and enters into total maintenance contracts, which are a subset of routine maintenance contracts. Auditors reviewed 8 total maintenance contracts awarded for more than \$91 million and identified the following:

- On two total maintenance contracts, the Department did not monitor or comply with the claims and collection processes involving more than \$5 million in claims filed by the contractor. The claims were related to third-party damages to state property.
- The Department has clarified certain provisions in its latest total maintenance contracts, but more clarification is needed in assigning responsibility for collecting on third-party damage claims.
- The Department is fully complying with its procurement requirements in selecting qualified bidders and objectively awarding total maintenance contracts.

The Department is still learning through evaluation and assessment how to improve the results of total maintenance contracts.

Additionally, the Department is not reporting routine maintenance contract information according to the Legislative Budget Board's (LBB) instructions. The Department reports cumulative contractor payments as of the reporting date, rather than total contract awards and amendments as the LBB instructs state agencies to report. The result is that contract amounts are under-reported. The total amount obligated by the Department is not accurately reported.

### ***Summary of Information Technology Review***

We determined that there were access control weaknesses in the Department's Construction and Maintenance Contract System (CMCS). State auditors reviewed hard copy source documents for the data in CMCS. There does not appear to be any evidence that the information provided to auditors was inconsistent with the hard

copy source data. Based upon these results, we can rely upon the validity and reliability of the data from CMCS used in the audit. The access control weaknesses were discussed with Department management. Management stated that it would address and correct those weaknesses.

The two other Department applications reviewed, the application used to score and reimburse rest area contractors and the Texas Maintenance Assessment Program (TxMAP), appeared to have adequate controls to prevent fraudulent or unauthorized changes to inspection scores. Network and Internet security were not tested during this audit.

## ***Summary of Management's Response***

The Department agrees with the recommendations in this report and provided the following summary of its responses:

*TxDOT concurs with the recommendations of the audit. TxDOT will take appropriate steps to address identified deficiencies. The security access control issue identified above in the Technology Review Summary was corrected November 5, 2005, by the Information Systems Division. It should be noted that many items identified have been previously corrected following a departmental audit in 2004. Corrective measures, timelines and responsible parties will be further identified in the individual section response by TxDOT Management.*

## ***Summary of Objectives, Scope, and Methodology***

The audit objectives were to determine whether contract management processes and controls over routine maintenance contracts reasonably assure that the Department:

- Plans and identifies the contracting objectives and contracting strategy.
- Selects the most qualified contractors fairly and objectively.
- Ensures that contract provisions hold the contractor accountable for producing desired results.
- Establishes prices that are cost-effective and aligned with the cost of providing the goods and services.
- Monitors and enforces the terms of the contract.

The scope of this audit included reviewing total maintenance contracts (including rest area contracts) and routine maintenance contracts.

Auditors reviewed Department contracts, interviewed personnel, conducted site visits at selected district offices, analyzed contract monitoring activities, and reviewed the inspector turnover rate and amount of training received.

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SAO Report No. 06-034*

Other SAO Products		
Number	Product Name	Release Date
06-010	An Audit Report on the Texas Department of Transportation's Texas Mobility Fund Financial Statements from the Fund's Inception through August 31, 2005	December 2005
06-007	An Audit Report on the Texas Department of Transportation's Motor Vehicle Registration and Titling System	September 2005
05-007	An Audit Report on the Department of Transportation's Management of Construction Contracts	October 2004
04-028	An Audit Report on the Department of Transportation's Management of the Statewide Traffic Analysis and Reporting System	May 2004
03-021	An Audit Report on the Department of Transportation's Management of State Highway Fund 6	March 2003

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# Detailed Results

Chapter 1

## *The Department's Routine Maintenance Contract Management Processes and Controls Are Adequate, But They Should be Improved and Strengthened*

The Department of Transportation (Department) has adequate contract management processes and controls over routine maintenance contracts. The Department fairly and objectively selects the most qualified contractors, and the three district offices auditors visited (in Fort Worth, Houston, and Bryan) generally ensure that contract provisions hold contractors accountable for producing desired results.

Other areas of contract management should be improved--such as documenting inspections, material tests, and material approvals--to comply with Department policy. The district offices also should adhere to the Department's policies and procedures for contracted maintenance planning, and they should more thoroughly analyze change orders that increase the contract price to ensure that the changes are justified.

Table 1 shows the Department's total maintenance contracting activity for fiscal years 2001 through 2005.

Table 1

Total Maintenance Contracts Awarded Fiscal Years 2001-2005						
District Office	Fiscal Year					Number of Contracts
	2001	2002	2003	2004	2005	
Fort Worth	\$ 5,667,948	\$ 10,680,610	\$ 9,185,413	\$ 7,376,301	\$ 20,734,375	203
Houston	\$ 31,773,171	\$ 44,218,819	\$ 23,261,513	\$ 31,757,772	\$ 25,254,304	493
Bryan	\$ 6,857,417	\$ 4,416,090	\$ 12,425,740	\$ 13,707,908	\$ 11,320,572	318
<b>All 25 District Offices</b>	<b>\$181,754,650</b>	<b>\$188,262,593</b>	<b>\$235,896,097</b>	<b>\$232,833,651</b>	<b>\$249,958,734</b>	<b>5,061</b>
Note: State Use Program and total maintenance contracts are not included.						

Source: Department of Transportation, Contract Information System (CIS).

## District Offices Should Implement Consistent Planning Practices

The Fort Worth, Houston, and Bryan district offices do not have consistent planning practices for contracted routine maintenance, partly because they do not follow the Department's maintenance planning guidelines. Two district offices did not prepare annual maintenance plans as directed by the Department's guidelines, and the remaining district office entered into contracts for types of projects that were not included in its plan. The Department requires district offices to develop maintenance plans to guide operations in the district offices, develop long-range strategies to address identified maintenance needs, and provide a basis for creating a budget. Specifically, auditors identified the following issues:

- The Fort Worth district office did not create a maintenance plan for fiscal year 2005. Auditors reviewed this district office's plan for the previous fiscal year and found that 14 (51.8 percent) of the 27 routine maintenance contracts entered into in fiscal year 2004 were not included in this district office's plan for that year. In addition, this district office did not have documentation showing that it prioritized potential project types. Without documentation of planned needs, the district office could not verify that it accomplished its plan.
- The Houston district office did not have documented, comprehensive maintenance plans for fiscal years 2004 and 2005. Although it appears that the individual sections within this district office have a process for planning, the district office did not document the overall plan or identify its contracting strategies district-wide for fiscal year 2005. In addition, none of the 78 contracts that this district office entered into in fiscal year 2005 were included on a maintenance plan.
- The Bryan district office did prepare a maintenance plan for fiscal year 2005, and the plan complies with the Department's *Maintenance Management Manual*, which is the Department resource for guidance on maintenance management. This district office awarded 54 contracted maintenance projects in fiscal year 2005. Of those, 11 (20.4 percent) did not align with the types of work identified in this district office's plan for that year.

### Recommendation

The Department should ensure that the district offices follow Department planning guidelines or work with Maintenance Division management to modify the guidelines to fit their needs.

## Management's Response

*TxDOT concurs with the recommendation. The Director of the Maintenance Division reviewed this requirement with TxDOT Administration in December, 2005. A memo to all District Engineers was sent January 2, 2006, by the Assistant Executive Director of Engineering Operations requiring the Districts to submit their FY2006 Maintenance Plan to the Maintenance Division by January 16, 2006. The Maintenance Division will develop a quarterly report to compare the planned work to the actual work accomplished. While work accomplished may directly reflect that planned, imposing a percentage requirement is impractical due to the nature of maintenance operations and the need to address unforeseen conditions that typically occur to roadway infrastructure.*

Chapter 1-B

### District Offices Should Improve the Accuracy of Estimates and Increase Competition

District office staff or contracted engineering consultants responsible for preparing cost estimates do not meet industry benchmarks for estimating project costs. As a result, the three district offices that auditors visited may not be establishing prices that are cost-effective and aligned with the cost of providing the goods and services. In addition, district offices frequently receive only one or two bids for a project. Although costs are higher than they would likely be with more bidders, the district offices are substantially compliant with Department policy in awarding these contracts.

Engineers' estimates are not accurate. Department staff or engineers (or consultants) estimate the costs of projects so that budget allocations can be planned for contracted maintenance and the estimates are made available to the public. Nearly 65 percent of the contract award amounts analyzed for the three district offices auditors visited did not fall within 10 percent of the cost estimates, as recommended by the U.S. Department of Transportation's Federal Highway Administration—approximately 50 percent were below the 10 percent threshold and approximately 14 percent were above it. Auditors analyzed all 25 district offices and found similar results: approximately 65 percent did not fall within the 10 percent range (plus or minus).

#### Guidance from the U.S. Department of Transportation

"It is realized that estimate preparation is not an exact science; however, it is felt the engineer's estimate should be within  $\pm 10$  percent of the low bid for at least 50 percent of the projects."

Source: *Federal Highway Administration Report*, Part 4, Section C

Table 2 shows the number of district office contracts with award amounts that were greater than, lower than, or within 10 percent of the engineers' estimates from fiscal years 2001 through 2005.

Table 2

Number of Contract Award Amounts from Fiscal Years 2001 through 2005 that Were Within 10 Percent of Engineers' Estimates				
District Office	Number of Contracts	Percent of Contracts (Number) More than 10% Above Engineer's Estimate	Percent of Contracts (Number) Within ±10% of Engineer's Estimate	Percent of Contracts (Number) More than 10% Below Engineer's Estimate
Fort Worth	203	15.76% (32)	38.92% (79)	45.32% (92)
Houston	493	12.17% (60)	33.67% (166)	54.16% (267)
Bryan	318	16.67% (53)	35.85% (114)	47.48% (151)
All 25 Districts	5,061	14.78% (748)	34.60% (1,751)	50.62% (2,562)
U.S. Department of Transportation's Federal Highway Administration Benchmark			50%	

Source: State Auditor's Offices analysis of the Department's Contract Information System data, fiscal years 2001-2005. State Use Program and total maintenance contracts are not included.

Amounts on contracts awarded with only one or two bidders are consistently higher than those awarded with three or more bidders. For the Fort Worth and Bryan district offices, contract award amounts vary by as much 13 percent above the engineers' estimates for one-bid awards and 13 percent below the estimates for awards with three or more bidders. The Houston district office's award amounts were almost equal to the engineers' estimates for one-bid awards and were as much as 15.5 percent below the estimates for awards with three or more bids.

The three district offices may not have received competitive prices for all contracts on which they received only one or two bids. Table 3 shows the number of contracts that could be affected.

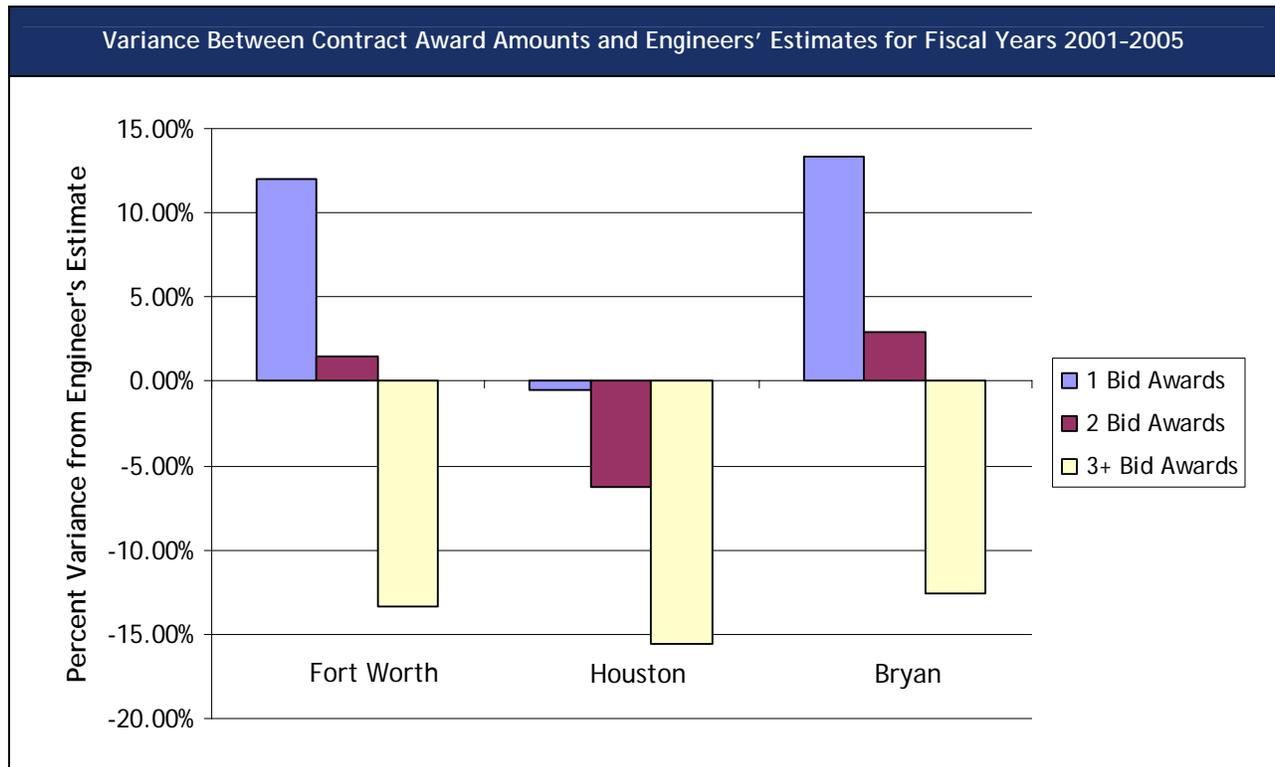
Table 3

One- and Two-Bid Contracts Awarded during Fiscal Years 2001 through 2005						
District Office	Total Number of Contract Awards	One-Bid Awards	Percent of One-Bid Awards	Two-Bid Awards	Percent of Two-Bid Awards	Percent of One- and Two-Bid Awards
Fort Worth	203	22	10.84%	39	19.21%	30.05%
Houston	493	51	10.34%	152	30.83%	41.18%
Bryan	318	24	7.55%	60	18.87%	26.42%
All 25 District Offices	5,061	492	9.72%	1,074	21.22%	30.94%

Source: State Auditors Office analysis of the Department's Contract Information System data, fiscal years 2001-2005. State Use Program and total maintenance contracts are not included.

According to the Department's project estimating manual, the bid price received is directly related to the number of bidders on a project. In other words, having more bidders on a project increases competition, which encourages bidders to cut costs where possible and submit lower bids. Auditors analyzed routine maintenance contracts that the Department entered into from fiscal year 2001 to fiscal year 2005 and found this trend to be accurate. Figure 1 illustrates the relationship between the number of bidders and the corresponding variance between the awarded amount and the engineer's estimate for the three district offices auditors visited.

Figure 1



Source: State Auditors Office analysis of the Department's Contract Information System data, fiscal years 2001-2005. State Use Program and total maintenance contracts are not included.

The Department does have a defined process for considering one-bid and two-bid awards. Justification must be documented for one-bid awards exceeding 10 percent of the engineer's estimate and two-plus-bid awards exceeding 20 percent of the engineer's estimate. Auditors determined that the district offices were substantially compliant in providing written justification in accordance with Department policy.

District office management offers multiple explanations for awarding contracts with a low number of bidders, including the following:

- The district office or Department may not accept all of the bids received for a project. The recorded number of bidders includes only those whose proposals are submitted in accordance with Department guidelines. For example, if three bids are received and one does not comply with the guidelines, the bid that does not comply with guidelines is considered non-responsive and is rejected, resulting in only two bids' being recorded as received.
- Few contactors are available to bid the work. Competition may be limited on many projects because of a limited number of contractors that perform the

type of work required. Also, at the time of bidding, contractors may have already obtained all the work they want or need.

- Some routine maintenance contractors may not be experienced at preparing their bids. According to district office management, many of the routine maintenance contractors are small companies or individuals who are bidding on small projects and who may not have the training or business experience that larger contractors might have. As a result, their bids may not be adequately prepared or correctly estimated.

## Recommendations

The Department should ensure that the district offices:

- Continually assess the methodology used for preparing engineers' estimates to achieve the goal of having at least 50 percent of contract awards within 10 percent of the estimates, as recommended in the U.S. Department of Transportation's Federal Highway Administration guidelines.
- Perform bid analyses on a regular basis to ensure that there is adequate competition for contracts and do more to encourage contractors to bid on district office projects.

## Management's Response

*TxDOT concurs with the recommendations. Contract prices have been unpredictably volatile due to oil, cement, and steel fluctuations influenced by political and economic conditions worldwide. Guidance will be provided by the Director of the Maintenance Division to the Districts explaining the need to ensure estimates are based on the most current applicable data prior to submission for letting. We will strive to be more in line with the FHWA guideline, although we want the reader to know that these contracts are paid with state funds. Maintenance contracts are let through legislative directed open bidding procedures that include appropriate advertising and notification requirements to entice interest of bidders. This method has historically provided adequate numbers of qualified bidders. TxDOT will periodically analyze trends of bidder participation.*

Chapter 1-C

## The Department Needs to Improve Its Contract Oversight on Routine Maintenance Contracts

The district offices auditors visited did not have support to show that the required tests, material approvals, and inspections had been performed on contracted projects (see Table 4). Auditors reviewed a total of 30 contracts for documentation of inspection-related activities and found that, for 22 of the

contracts, at least one of the inspection-related elements for which auditors tested could not be supported. The total award amount for these 22 contracts was \$8,978,470.

For contract change orders, the district offices lack documentation showing that they performed cost analyses to verify the reasonableness of the contractors' pricing. Of those tested, 17 contracts had a total of 39 change orders that increased the respective contract amounts by a total of \$2,794,347. Maintaining documentation that justifies change orders is important because change orders are not subject to the same competitive process as contracts, therefore making it necessary for district offices to gain assurance that funds are being used for the intended purposes.

District offices also are not ensuring that final payments are made to contractors within 60 days of acceptance of the work. Department procedures state that final payments to contractors should be submitted by the district offices to the Department no later than 60 days after the project is completed and accepted by the district office. In one district office, none of the seven completed contracts reviewed was submitted to the Department for final payment within the 60-day time period. During these 60 days, district offices are responsible for ensuring that all final quantity totals are justified by supporting records, that contract quantity over- or under-runs are fully explained, and that work performed and amounts due to the contractor are calculated accurately and paid.

Table 4 shows the total number of errors that auditors identified at each of the district offices.

Table 4

Percent of Fiscal Year 2001-2005 Contracts with Errors by District Office				
Area of Noncompliance	Fort Worth	Houston	Bryan	Totals for All Three Offices
No Evidence of Material Testing	80% (4 of 5)	30% (3 of 10)	70% (7 of 10)	56% (14 of 25)
Material Sourcing Letters - No Support <sup>a</sup>	30% (3 of 10)	70% (7 of 10)	50% (5 of 10)	50% (15 of 30)
Incomplete Diary Documentation <sup>b</sup>	70% (7 of 10)	20% (2 of 10)	30% (3 of 10)	40% (12 of 30)
Contract Days Charged Incorrectly	30% (3 of 10)	0% (0 of 10)	50% (5 of 10)	27% (8 of 30)
Incomplete Change Order Documentation <sup>c</sup>	20% (1 of 5)	68% (13 of 19)	53% (8 of 15)	56% (22 of 39)
No Evidence of Contractor Payment Review	12.5% (1 of 8)	12.5% (1 of 8)	0% (0 of 10)	8% (2 of 26)
Project Not Closed Out within 60 Days	33% (2 of 6)	100% (7 of 7)	44% (4 of 9)	59% (13 of 22)
<p><sup>a</sup> Material sourcing letters are documents that indicate that materials used on projects are approved by the Department or district office.</p> <p><sup>b</sup> Job diaries are records of every significant event on a project from start to finish.</p> <p><sup>c</sup> There were 39 total change orders in the contracts tested. Not all change orders added dollar amounts to the contracts; some added days. In addition, not all contracts had change orders.</p>				

Source: State Auditors Office analysis of the Department's routine maintenance contract file data, fiscal years 2001-2005

The district offices perform adequate contract monitoring in other areas. Specifically, auditors identified a low error rate (8 percent) in contractor payments, and the district offices are complying with insurance and bond requirements.

### Recommendations

The Department should ensure that the district offices:

- Document inspections and testing of all required materials in routine maintenance contracts to comply with Department policy and ensure that material approvals are documented. If testing is not necessary due to small quantities of materials used or non-critical applications, this should be documented in the project file.
- Ensure that an analysis of change order pricing is performed for change orders and that documentation of the analysis is maintained in the project file. When existing quantities are substantially increased, a determination should be made about whether economies of scale exist so that the original unit price can be re-negotiated.

- Ensure that all documentation related to final approval and acceptance of the work is in the project file.
- Submit final payment requests to the Department within 60 days as required by Department procedures.

### Management's Response

*TxDOT concurs with the recommendations. The Maintenance Division is finalizing a Maintenance Contract Administration Manual that includes administrative guidelines for each of these items. The manual will be submitted to the Office of General Counsel and Audit Office for final review within thirty days. It is anticipated the manual will be published online by September 1, 2006.*

Chapter 1-D

### Inspector Training and Tracking of Turnover Trends Could Be Improved

The error rates that auditors found in inspection-related activities (see Chapter 1-C) suggest that improvements are needed in maintenance inspector contract oversight, although the cause of the error rates may be attributed to other reasons as well. The Department's executive management indicated to auditors that inspector training was an important area of concern. According to materials presented in the Department's Maintenance Contract Inspection training course, inspectors are the "eyes and ears" of the Department. A well-trained inspection staff could help to reduce the risk of poor or inadequate contract monitoring.

Maintenance inspectors in the three district offices auditors visited receive training, but there is no documented expectation of how much or what kind of training inspectors should receive. Maintenance section supervisors generally determine the inspectors' training needs. In addition, the district offices do not monitor or track inspector turnover. Specifically:

- Two of the three district offices did not fully expend their training budgets. The third district office's training budget is included in its travel budget, so training-specific expenditures were not readily identifiable. Having a surplus in the training budget suggests that the district offices' inspectors could have received more training than they did.
- The Bryan and Houston district offices do not have documented training expectation policies for maintenance inspectors. Such policies would formally communicate to inspectors what kind of and how much training they are expected to receive over a period of time.
- The Houston and Fort Worth district offices do not track turnover rates for maintenance inspectors. Tracking turnover rates would give the district

offices valuable information on how frequently and why inspectors leave the district offices to work elsewhere.

According to the Department's *Workforce Plan 2005-2009*, its mission and goals will require training to enhance staff's skills in contract management, including inspection and maintenance.

## Recommendations

The Department should ensure that the district offices:

- Consider assessing maintenance inspector training needs and developing minimum expectations to achieve that training. This includes establishing realistic training budgets and monitoring those budgets to ensure that training goals are met.
- Track the turnover rate of maintenance inspectors and report turnover information to appropriate maintenance management levels on a regular basis.
- Ensure that training goals align with the Department's overall workforce plan.

## Management's Response

*TxDOT concurs with the recommendations. The Maintenance Division will coordinate a review of inspection training requirements and need to track turnover rates and their effects on inspection personnel. TxDOT has an excellent training course for maintenance contract inspection. The Districts, Maintenance Division, and the Human Resources Division collaborated in establishing the course content and training material. Good, practical instruction is provided since the Districts provide the majority of instructors for this course. Districts will be encouraged to send all potential contract inspectors to this course, however, it should be recognized that requiring certification prior to inspection is impractical due to the number of maintenance contracts compared to the number of available maintenance personnel to inspect them. The department is committed to providing knowledgeable personnel to inspect contracts and will endeavor to train personnel accordingly to achieve that end.*

## ***Overall, the Department Manages Total Maintenance Contracts Adequately, But It Could Improve Aspects of Oversight and Contract Formation***

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In managing total maintenance contracts, the Department does a good job of fairly selecting contractors and setting prices. Total maintenance contracts are a subset of the routine maintenance contracts discussed in Chapter 1. Since

### **Total Maintenance Contracts**

Total maintenance contracts are generally long-term contracts (for example, for 5 years) in which the Department delegates highway and rest area maintenance to other entities.

The contracted entities are to relieve the Department of all duties traditionally performed by the Department in maintaining and operating the highways in the specified area of work.

1999, the Department has entered into 10 total maintenance contracts: 5 rest area total maintenance contracts managed by the Department's Maintenance Division and 5 total maintenance contracts managed by district offices.

The Department initiated its first two total maintenance contracts in 1999 and is still learning through evaluation and assessment how to improve the results of these contracts. For example, unclear contract provisions in the 1999 contracts resulted in disputes, claims, and change orders for which the Department paid the contractor \$2.3 million. When the Department reissued one of these contracts in 2004, it clarified some of the provisions and used those

provisions in subsequent contracts, but more improvements should be made regarding third-party damage claims.

Although the amounts of district offices' contractor payments on total maintenance contracts were substantially accurate, the Department is not adhering to its own policy requiring that payments be signed by a second person to indicate review of the payment. Auditors did not identify any discrepancies in payment amounts.

Contract provisions related to third-party damage to state highway property (for example, damage to guardrails from vehicle accidents), agreements with local municipalities (such as agreements for traffic signal or highway lighting maintenance), and change orders are not monitored and enforced adequately. A process through which the Department can monitor the contractor's claims for damage to state property caused by third parties has not been established.

Table 5 provides information on the five total maintenance contracts managed by district offices for fiscal years 1999 through 2005.

Table 5

Total Maintenance Contract Amounts (Managed by District Offices) for Fiscal Years 1999 through 2005		
District Office Contract	Fiscal Year Awarded	Award Amount
Dallas Pilot Project Contract	1999	\$ 11,300,000
Waco Pilot Project Contract	1999	19,849,000
Waco Contract (rebid)	2004	29,420,000
San Antonio Contract	2005	14,375,000
Yoakum Contract	2005	2,471,000
<b>Total</b>		<b>\$ 77,415,000</b>

Source: State Auditors Office analysis of the Department's Contract Information System data, fiscal years 1999-2005

Chapter 2-A

**The Department Should Establish Better Control of the Third-Party Claims Process**

District offices' contract oversight for the 1999 and 2004 Waco and Dallas total maintenance contracts needs to be improved with regard to third-party claims, change order management, and enforcement.

Third-party claims. The Department provided minimal oversight and review for more than 1,700 claims, totaling more than \$5 million, that were filed by the contractor for the 1999 Waco and Dallas total maintenance contracts. The contractor filed these claims on behalf of the State for damage to state property that the contractor alleged was caused by third parties and that the contractor repaired. The contracts were unclear about the collection process for damage claims but did state that the Department would make payments to the contractor for recovered damages. The Department never collected any damages, instead entrusting the contractor with making repairs and collecting damages for the five-year term of the contracts. The contractor was able to collect approximately \$3.5 million and expects to recover the remaining \$1.5 million from the Department. The contracts do not address uncollectible claims, and the Dallas district office is questioning the validity, pricing, and support for almost \$600,000 of the balance.

Before these contracts were awarded in 1999, management of the Department's Maintenance Division did not ensure that the Department's and the State's interests regarding damages by third parties were adequately protected. This lack of oversight on such a complex process involving millions of dollars and hundreds of claims against the traveling public leaves the process open to abuse and puts the State at risk of unknown liabilities. The following occurred on the two five-year total maintenance contracts awarded in 1999:

- In the 1999 Waco project, the contractor billed \$2,995,472 to insurance companies, individuals, and other entities for damages to state property and collected \$2,296,410. The contractor expects the Department to pay the remaining \$699,062. These claims date from 1999 to 2004, and many may now be uncollectible. The district office does not know how many of these claims are valid because it did not begin receiving accident reports from law enforcement authorities until after the contract term was completed in 2004.
- In the 1999 Dallas project, the contractor (the same contractor as Waco) billed \$2,071,745 to insurance companies, individuals, and other entities for damages to state property and collected \$1,256,556. The contractor expects the Department to pay the remaining \$815,189. The district office reviewed the contractor's claims and determined that only \$230,856 of the unpaid claims may be valid. The district office contends that the contractor's claims for the balance, totaling \$584,333, have no merit and are not justified because either there was no damage to state property or the damage cost claims are not supported.

The Department included the same contract provisions that allowed the contractor to file claims on behalf of the State in the 2004 Waco and 2005 San Antonio total maintenance contracts, which means that similar issues may arise when those contracts are complete.

Change orders. The 1999 total maintenance contracts did not include a clear method for processing change orders. In addition, the contracts did not define the markup that the contractor would be allowed to add to the cost of changes, which would have helped ensure fair pricing for extra work ordered by the Department.

According to a provision in both the Waco and Dallas total maintenance contracts, the Department did not intend to issue any change orders because the nature of the contracts was "total maintenance." Instead, the Department expected change orders to be processed only in the event of contract extensions, changes in governmental policy, changes in state or federal statutes, or catastrophic emergencies. Because this expectation was not clearly stated, the contract language was subject to interpretation. As a result:

- The Dallas district office interpreted this provision to mean that no change orders were acceptable and, as a result, issued only one. The change order totaled \$3,793 and was for 50 percent of the cost of a "partnering session" between the contractor and the Department, which was required by the contract. No other change orders were allowed by the Dallas district office.
- The Waco district office issued 15 change orders totaling \$1,474,179, or 7.4 percent of the original \$19.8 million contract amount. Only three of the change orders were in the categories mentioned above. Of the 15

change orders, one was issued to extend the contract time for two months, and two others were issued for excessive septic pumping at rest areas for a total of \$789,975. The remaining 12 change orders, totaling \$684,204, were for various other items, including premium charges for night work, extraordinary pavement repairs, and sign upgrades.

- The contractor for the 1999 Waco and Dallas total maintenance contracts was allowed to mark up many costs on Waco change orders by as much as 24 percent for equipment and subcontractor work performed under the contract scope. The contractor's markup for subcontract work and equipment totaled at least \$41,000. The Department corrected this deficiency in the 2004 Waco total maintenance contract by tying extra work to the allowable markup percentages in the 2004 Texas Department of Transportation Standard Specifications under the provision "Force Account Work."
- In the 2004 Waco contract, the district office processed two change orders totaling \$157,487 for illumination (lighting) repairs for the cities of Waco and Temple. The Department overpaid the contractor \$23,306 because it did not check the pricing structure for change orders that was included in the contract. The revised Force Account Work contract provision limits contractor markup on change orders that include subcontractor work to 5 percent. Despite this provision, the district office continued to allow the contractor to mark up the extra subcontractor work at 24 percent.

Enforcement. The Waco district office has not been enforcing the terms of its 1999 and 2004 total maintenance contracts related to work for other municipalities, liquidated damages, or third-party damage claims:

- As mentioned above, the contract provisions state that the Department will reimburse the contractor for repairing damages to state property caused by third parties. However, the Department never collected damages; instead, it allowed the contractor to collect funds directly from individuals, insurance companies, and other entities responsible for damage to state property.
- The contract for illumination maintenance and repair for the cities of Waco and Temple states that the contractor is responsible for performing the work and for negotiating with the cities to obtain payment. From the 2004 contract period to date, the contractor has performed maintenance and repair totaling \$157,847, but according to district office management, the cities refused to pay because their contracts are with the district office and not with the contractor.
- The Waco district office refunded \$30,000 in liquidated damages to the contractor on the 1999 total maintenance contract, citing good performance over a six-month period in 2003. The contract does not authorize incentive payments or return of liquidated damages for good

performance. Furthermore, information recorded in the inspector's daily job diary indicates that the contractor was not performing well during this time period.

Right-to-audit or access-to-records contract provisions. The Department added a right-to-audit provision in its 2004 total maintenance and rest area contracts specifying that it has the right to audit contractors. Neither of the Department's two 1999 total maintenance contracts included a right-to-audit or access-to-records provision. However, the rest area contracts do contain an access-to-records provision, and the new 2004 Waco contract has this provision as well.

## Recommendations

The Department should:

- Obtain a legal determination regarding the collection of funds owed by third parties who damage state property and whether that responsibility should be delegated to a contractor. If the Department determines this delegation is appropriate, it should establish a formal process that adequately protects the State's interests, monitor the process to maintain control over pricing and collections, and enforce the terms of the contract accordingly.
- Ensure that all subsequent total maintenance contracts include a clearly defined change order process and that staff responsible for project management enforce the markup allowance schedule when the contractor submits change order pricing.
- Enforce contract terms related to performance and payment for work assigned to contractors for situations in which the Department also has agreements with municipalities.
- Ensure that, if liquidated damages are assessed to the contractor, any subsequent refunding of damages is processed in accordance with the contract terms and Department policy.
- Continue to include right-to-audit provisions in total maintenance contracts.

## Management's Response

*TxDOT concurs with the recommendations. The Office of General Counsel, with input from Administration, associated Districts, and the Maintenance Division has provided legal clarification regarding third party claims. Procedures for the review, collection, and payment of third party claims have been implemented in accordance with this legal clarification. The*

*Maintenance Division will work with the Districts to include appropriate language to include clearly defined change order processes, enforcement of contract terms, and the right-to-audit provision in future total maintenance contracts.*

Chapter 2-B

## The Department Should Improve Rest Area Contract Change Order Management and Inspection Activities

Rest area oversight deficiencies have substantially been addressed, but improvements could be made in change order management and some inspection activities.

In October 2004, the Department's internal auditor identified significant

**Rest Area  
Total Maintenance Contracts**

The Department hires contractors to maintain rest areas along interstate and state highways, including repairing broken equipment, pumping out septic systems, cleaning, and mowing. These contracts are designated as total maintenance contracts, which means that the contractor relieves the Department of its maintenance responsibilities over the course of the contract term.

problems with rest area contracts, which are managed by the Department's Maintenance Division (Division). State auditors found that most of the issues raised in the internal audit report have been addressed, but change order management and inspections, including support for contractor payments, still need improvement.

Contractor payment authorizations frequently do not contain two signatures as required by Department policy. State auditors selected a random sample of 69 authorizations and found that 27 (39 percent) did not

contain the required signatures. Since late 2004, payment authorizations have substantially been compliant with the two-signature requirement.

Table 6 shows the total number of rest areas for which maintenance has been contracted out and the total amounts of those contracts.

Table 6

Rest Area Contracts			
Region	Fiscal Year Awarded	Number of Rest Areas	Award Amount
North Region	2003	25	\$ 6,434,472
West Region	2003	16	5,119,098
East Region	2003	19	7,154,280
South Region	2003	23	9,977,320
Northwest Region	2005	5	1,984,800
Total		88	\$ 30,669,970

Source: State Auditors Office analysis of the Department's Contract Information System data, fiscal years 2003-2005

Change orders. In one contract for the total maintenance for five rest areas, the Division issued a change order extending the contract term and increasing the contract by \$2.3 million. At the end of the extended term, the Division

competitively rebid the contract with the same scope of work and entered into a new contract for almost \$900,000 less. Had the Division rebid the contract at the end of the original contract term instead of extending it, significant cost savings might have been realized. The Division has since removed the provision that allows extending rest area contract terms.

#### Incentives

The Department inspects rest areas and pays contractors a monthly bonus when it scores a rest area above a certain level, which it deems "incentive status." A rest area will remain in incentive status at least until the Department reinspects it, resulting in multiple monthly bonuses. The average length of time between rest area inspections is 138 days, or just over four and a half months, and the incentive payments reviewed ranged from \$1,758 to \$2,508 per month.

The Department also puts rest areas in "disincentive status" when inspection scores fall below the minimum accepted level. Contractors in this status are assessed charges until they are taken out of disincentive status.

#### Enhancements

Enhancements are provisions in the contracts that are intended for the contractor to bring the level of service at each rest area to an "acceptable" level. The level of service is identified in the "Contractor Performance" provision of the contract. A plan of enhancement work is required to be submitted by the contractor for the Department's approval.

Inspections. Incentive and enhancement payments to contractors were not fully supported. The Department's internal auditor issued a similar finding in October 2004, and the Department improved its processes significantly:

- One finding in the Department's October 2004 internal audit report was that original support documentation for rest area evaluation scoring by inspectors was not retained and that the electronic versions were not signed or dated by the inspectors. This was a significant weakness because evaluation scores determine the amount contractors are paid and whether the payment is a reduction from the regular payment (disincentive) or an added incentive payment (see text box for additional details).
- After the Department's internal audit report was issued, Division management stated in a memo that as much as \$100,000 in incentive payments were made because the project manager

increased original inspection scores without the inspectors' concurrence. Department management asserts that the scores were changed because the Department and contractor had agreed in pre-bid meetings that the Department would be responsible for a portion of the rest area maintenance work, but inspectors were not informed of this arrangement. The inspectors counted off for certain items that the Department says it was responsible for, which prompted the project manager to change the scores. However, the Division did not document any justification for the changes, and some of the original inspection scoresheets were apparently destroyed. Division management reviewed this occurrence and determined that no impropriety had transpired. In any case, changing scores to move a contractor's payment status from being assessed disincentive charges to receiving incentive payments gives the appearance of partiality and impropriety.

State auditors reviewed the new controls that management put in place to ensure that inspection scores could not be changed by one person without knowledge of management or other authorized individuals. We noted significant improvements in the application used to score rest area

contractors. Recent changes to processes and security appear to have significantly reduced the likelihood that fraudulent or unauthorized changes to scores could occur.

- The time period over which a contractor can receive incentive payments significantly exceeds that for disincentives assessed. With an average of four and half months between regular inspections, contractors may receive incentive payments even when the rest areas' conditions no longer meet the related criteria. Without more frequent inspections, the Division cannot ensure that contractors deserve the incentive payments they receive. The Department's internal auditor also noted this issue in an October 2004 report.

If a rest area receives a low score and the contractor is assessed disincentive charges, the contractor is given seven days to correct the problems and request a reinspection. The Division is required by the contract to perform the reinspection within seven days. The disincentive charges are suspended when the contractor requests the reinspection, not when the reinspection confirms that the appropriate corrections have been made. The contract terms state that disincentives will be charged until a reinspection is made. The Division is not following these terms. State auditors found that the Division took an average of 190 days, or just over 6 months, to perform reinspections on 51 rest areas from October to December 2004.

- Enhancements totaling almost \$2.6 million were paid with little or no support that the Department received enhancements with the value for which it contracted. Of the five rest area contracts we reviewed, only one had support for the enhancement payments.

## Recommendations

The Department should:

- Ensure that it carefully evaluates the need for change orders, including those that extend contracts. Because change orders occur outside of the competitive process, the Department should also perform a thorough pricing analysis on change orders to determine reasonableness.
- Consider extending the disincentive time period to motivate contractors to ensure that rest areas are maintained at the minimum service level. Additionally, the Department should establish a realistic and reasonable time period within which to perform reinspections of rest areas that are in the incentive payment stage.

- Ensure that enhancement payments are fully supported and that inspections of the enhanced rest areas are performed and documented in the project file.
- Ensure that recommendations from the Department's October 2004 internal audit report are implemented.

### Management's Response

*TxDOT concurs with the recommendations. Following the referenced 2004 audit, staffing and procedural changes were implemented to address issues identified. In addition, procedures have been implemented to further document re-inspections following disincentive periods to address concerns expressed by State Auditor personnel. Re-inspections, with practical travel and personnel constraints taken into consideration, will be made within the time period specified within the contract. Future contracts including enhancements will provide for more strict directives relating to required plans, inspection, enhancement completion documentation, and payment oversight. Likewise, incentive payment limits will be reviewed in future contracts.*

Chapter 2-C

### The Department Should Continue to Apply Lessons Learned from Previous Contracts to New Contracts

The Department is still learning through evaluation and assessment how to improve the results of total maintenance contracts. After evaluating the process used to monitor the work performed for the two pilot total

maintenance contracts that were issued in 1999 for five-year terms in the Dallas and Waco district offices, the Department identified areas for improvement. It modified performance specifications and clarified contract provisions from the 1999 contracts and used them in two subsequent total maintenance contracts that were issued in the Waco district office in 2004 and in the San Antonio district office in 2005.

The Department now bases a contractor's performance assessment and payment on the Texas Maintenance Assessment Program (TxMAP) scoring system (see text box for additional details).

#### The Texas Maintenance Assessment Program (TxMAP) Scoring System

TxMAP is a scoring system developed by the Department's Maintenance Division to assess the condition of the State's highway and interstate system. It allows maintenance managers to monitor and measure the condition of the highway system to determine resources needed to maintain the system at a specified level of service.

For total maintenance contracts, minimum standard scores are established that the contractor must maintain. Highway sections are scored monthly. If scores fall below the minimum standards, the Department reduces the contractor's compensation for that month according to a pre-determined formula.

### Recommendation

The Department should continue to assess and evaluate its total maintenance contracting process and make modifications as necessary.

## Management's Response

*TxDOT concurs with the recommendation. As stated, total maintenance contracting is a relatively new concept. Lessons learned through their implementation will continue to be evaluated, studied, and applied accordingly to future contracts.*

## ***The Department Is Reporting Inaccurate Information to the Legislative Budget Board Regarding Routine Maintenance Contracts***

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The Department is not reporting routine maintenance contract information according to the Legislative Budget Board's (LBB) instructions. The Department reports cumulative contractor payments as of the reporting date, rather than total contract awards and amendments as the LBB instructs state agencies to report. The result is that contract amounts are under-reported. The total amount obligated by the Department is not accurately reported.

State auditors selected a random sample of 68 routine maintenance contract amounts reported by the Department to the LBB in fiscal year 2004. The Department reported incorrect amounts for 65 (96 percent) of the routine maintenance contracts sampled.

Texas Government Code, Section 2166.2551, requires all state agencies and institutions of higher education to report to the LBB information regarding any construction contract that totals \$14,000 or more. The General Appropriations Act (79th Legislature, Article IX, Section 7.05) requires state agencies and institutions to report contracts, whether for construction or not, that exceed \$14,000 and that are not already being reported to the LBB.

### **Recommendations**

The Department should:

- Follow the LBB's contract reporting requirements.
- Ensure that it complies with Texas Government Code, Section 2166.2551, and the General Appropriations Act (79th Legislature, Article IX, Section 7.05)
- Clarify its methodology with the LBB to ensure that it reports accurate contract information.

### **Management's Response**

*TxDOT concurs with the recommendations. When this issue was first brought to the department's attention, the Finance Division, the Construction Division, and the Contract Services Section of the Office of General Counsel immediately formed a committee to evaluate the potential for inaccuracies in contract reports submitted to the Legislative Budget Board. That committee concluded that there were problems with the computer program used to compile information from various databases and combine the data into a single report. Those problems affected the timing of reports and at least in*

*some cases, caused the dollar amounts of individual contracts to be understated by the amount of the last contract payment. In addition, historical restrictions on the type of information available in its databases had limited the department's ability to provide information in exactly the format requested by the Legislative Budget Board. Although the department had been informed by the Legislative Budget Board that the existing system was acceptable, the department's Information Systems Division is currently rewriting the computer program necessary to generate the report. It is expected that the new system will be operational within approximately 90 days and will bring the department into full compliance with the Legislative Budget Board's written reporting requirements.*

# Appendix

## *Objective, Scope, and Methodology*

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### Objective

The audit objective was to determine whether contract management processes and controls over routine maintenance contracts reasonably ensure that the Department of Transportation (Department):

- Plans and identifies its contracting objectives and contracting strategy.
- Fairly and objectively selects the most qualified contractors.
- Ensures that contract provisions hold contractors accountable for producing desired results.
- Establishes prices that are cost-effective and aligned with the cost of providing the goods and services.
- Monitors and enforces the terms of its contracts.

### Scope

The scope of this audit included reviewing total maintenance contracts (including rest area contracts) and routine maintenance contracts.

Auditors tested contract data obtained from the Department's Contract Information System (CIS) for routine maintenance contracts let from fiscal year 2001 through 2005. The district offices selected for contract testing included representatives from the metropolitan district offices (Fort Worth, Houston, Dallas), urban district offices (Waco), and rural district offices (Bryan).

Auditors performed fieldwork from September through December 2005 at the Department's Maintenance Division in Austin and at the selected district offices.

### Methodology

Routine maintenance contracts were selected and tested for the five elements of contract management as published in the *State of Texas Contract Management Guide*. These elements are also the basis for the audit objectives.

Information collected and reviewed included the following:

- Database of maintenance contracts from the CIS data provided by the Department's Information Services Division, which included all maintenance contracts let from fiscal year 2001 through fiscal year 2005, routine maintenance contracts, State Use Program contracts, and emergency contracts
- Interviews with Department executive and division management, district office management, and inspectors

Procedures, tests, and analyses conducted included the following:

- Selected district offices to include in the audit based on risk assessments and samples obtained
- Conducted site visits at the Fort Worth, Houston, Bryan, Waco, Dallas, and San Antonio district offices
- Reviewed all rest area contracts at the Department's Maintenance Division in Austin
- Analyzed contract provisions for the inclusion of the basic elements of contract provisions that protect the Department's and the State's interests
- Analyzed contract monitoring activities, including payments to contractors, inspections, tests and material approvals, change order review, accuracy of days charged compared with the allotted contract time, and final payment or closeout
- Tested compliance with Department maintenance planning requirements for the one-year maintenance plan
- Reviewed routine maintenance contracts awarded in a specific fiscal year and compared the types of projects awarded to the types of projects planned for
- Reviewed the Department's bidder prequalification and contractor selection process for State-let and local-let projects
- Tested a selection of State-let and local-let routine maintenance and emergency contract awards for compliance with Department policy and procedures, including prequalification of the bidder awarded the contract
- Performed data analysis on contract awards from fiscal year 2001 to 2005 for number of bidders and award amount variance from the engineer's estimate; correlated the relationship between the number of bidders and the award amount variance from the engineer's estimate
- Reviewed inspector turnover rates and amount of training received

- Tested total maintenance contracts for compliance with the Department's planning, prequalification of bidders, and contract award processes
- Analyzed the accuracy of payments to the contractor and compliance with Department requirements for review and approval of payments to contractors
- Reviewed change orders and inspection documentation for compliance with Department policy

Criteria used included the following:

- Texas Government Code, Chapter 223, Subchapter A
- Texas Administrative Code, Title 43
- The Department's *Maintenance Management Manual*
- The Department's Maintenance Contract Inspectors Course
- The Department's *Plans, Specification and Estimate Preparation Manual*
- The Department's Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges for 2004 (and for 1993 where applicable)
- The Department's *Contract Administration Manual for Construction and Maintenance*
- Other Department online manuals
- *State of Texas Contract Management Guide*, Texas Building and Procurement Commission
- *Guidelines on Preparing Engineer's Estimate, Bid Reviews and Evaluation*, U.S. Department of Transportation, Federal Highway Administration

## Project Information

Fieldwork was conducted from September through December 2005. This audit was conducted in accordance with generally accepted government auditing standards. The following members of the State Auditor's staff performed this audit:

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The Honorable Jim Pitts, House Appropriations Committee  
The Honorable Jim Keffer, House Ways and Means Committee

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The Honorable Rick Perry, Governor

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Mr. Ted Houghton  
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### **Texas Department of Transportation**

Mr. Michael W. Behrens, P.E., Executive Director



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