TEXAS TRANSPORTATION COMMISSION

TRAVIS and WILLIAMSON Counties **MINUTE ORDER**

AUSTIN District

In TRAVIS and WILLIAMSON COUNTIES, STATE HIGHWAY 130 has been designated a toll project and a controlled-access state highway from I-35 north of Georgetown to a southern terminus at US 183.

In TRAVIS and WILLIAMSON COUNTIES, STATE HIGHWAY 45N has been designated a toll project and a controlled-access state highway from west of US 183 to SH 130.

In TRAVIS and WILLIAMSON COUNTIES, STATE HIGHWAY LOOP 1 has been designated a toll project and a controlled-access state highway from FM 734 (Parmer Lane) in Austin to the intersection of Loop 1 and SH 45N.

The Texas Transportation Commission (commission) has issued toll revenue bonds and other obligations to finance a portion of the costs of the 2002 Project of the Central Texas Turnpike System (system), a toll project composed of the SH 130, SH 45N, and Loop 1 project elements, and has entered into an Indenture of Trust dated July 15, 2002 with Bank One, National Association, as Trustee to secure the revenue bonds and other obligations issued for the 2002 Project.

In Section 707 of the Indenture of Trust, the commission covenants that it shall cause the general engineering consultant to make an inspection of the system at least once in the fiscal year following the substantial completion of the 2002 Project and in each fiscal year thereafter.

Following each inspection and on or before the 90th day prior to the end of each fiscal year, the general engineering consultant shall submit to the commission a report concerning the inspection, setting forth (a) their findings as to whether the system has been maintained in good repair, working order and condition and (b) their advice and recommendations as to the proper maintenance, repair and operation of the system during the ensuing fiscal year and (c) an estimate of the amount of money necessary for such purposes, including their recommendations as to the total amounts and classifications of items and amounts that should be provided for in the annual operating budget, the annual maintenance budget and annual capital budget for the next ensuing fiscal year.

Section 707 of the Indenture of Trust requires copies of the report to be filed with the U.S. Department of Transportation and the Trustee.

The commission has previously engaged PBS&J to serve as general engineering consultant in accordance with the Indenture of Trust. The FY 2011 Central Texas Turnpike Project Annual Inspection Report, attached as Exhibit A, has been prepared by PBS&J in accordance with Section 707 of the Indenture of Trust.

IT IS THEREFORE ORDERED by the commission that the general engineering consultant's FY 2011 Central Texas Turnpike Project Annual Inspection Report attached as Exhibit A is accepted.

Submitted and reviewed by:

Director, Texas Turnpike Authority Division

Recommended by:

Executive Director

112691 MAY 26 11

Minute Number | Date Passed

Texas Department of Transportation

Central Texas Turnpike System 2002 Project

Annual Inspection Report
Fiscal Year 2011

Prepared by ATKINS

General Engineering Consultant

Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730

Telephone: +1 (512) 327.6840
Fax. +1 (512) 327 2453

www.atkinsglobal.com/northamerica

May 20, 2011

Mr. Mark Tomlinson, P.E.
Director of the Texas Turnpike Authority
Texas Department of Transportation
125 East 11th Street
Austin, TX 78701

Subject: FY 2011 Inspection of the Central Texas Turnpike System, 2002 Project

Dear Mr. Tomlinson:

As General Engineering Consultant to the Central Texas Turnpike System, 2002 Project and in accordance with Section 707 of the Indenture of Trust, Atkins North America, Inc. is pleased to submit to you twenty copies of the FY 2011 Central Texas Turnpike Project Annual Inspection Report.

The condition of the project is excellent with an overall rating of 96. This is a combined rating for the three components of the CTTS, 2002 Project: SH 45, Loop 1 and SH 130. The results of this year's inspection are indicative of the age of the project and the proactive manner in which the project is maintained.

The inspection does reveal that a number of elements are in less than fair condition, however, the Austin District has a comprehensive maintenance contract in place and funded for routine maintenance sufficient to address these issues. Also, the Texas Turnpike Authority has contracts in place to address the issues identified within the toll facilities and buildings. There is reserve maintenance funding in place to make any necessary capital improvements that may be required.

This report contains a comprehensive summary of inspection results in tabular form. Additionally, photographs and graphics have been included to illustrate the major system elements. The introductions, Inspection Results and Recommendations are included in the body of the report. Appendix A-Selected photographs of existing conditions, Appendix B-Inspection worksheets, Appendix C-Bridge Reports and Appendix D- SH 45 Overhead Signs and High Mast Light Towers reports are included in the CD in the back of the report.

If you have any questions, please feel free to call.

Sincerely,

Stephen W. Austin, P.E.

Cc: Lowell Choate, P.E.
Doug Woodall P.E.

Annual Inspection Report

For the fiscal Year ending August 31, 2011

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Executive Summary

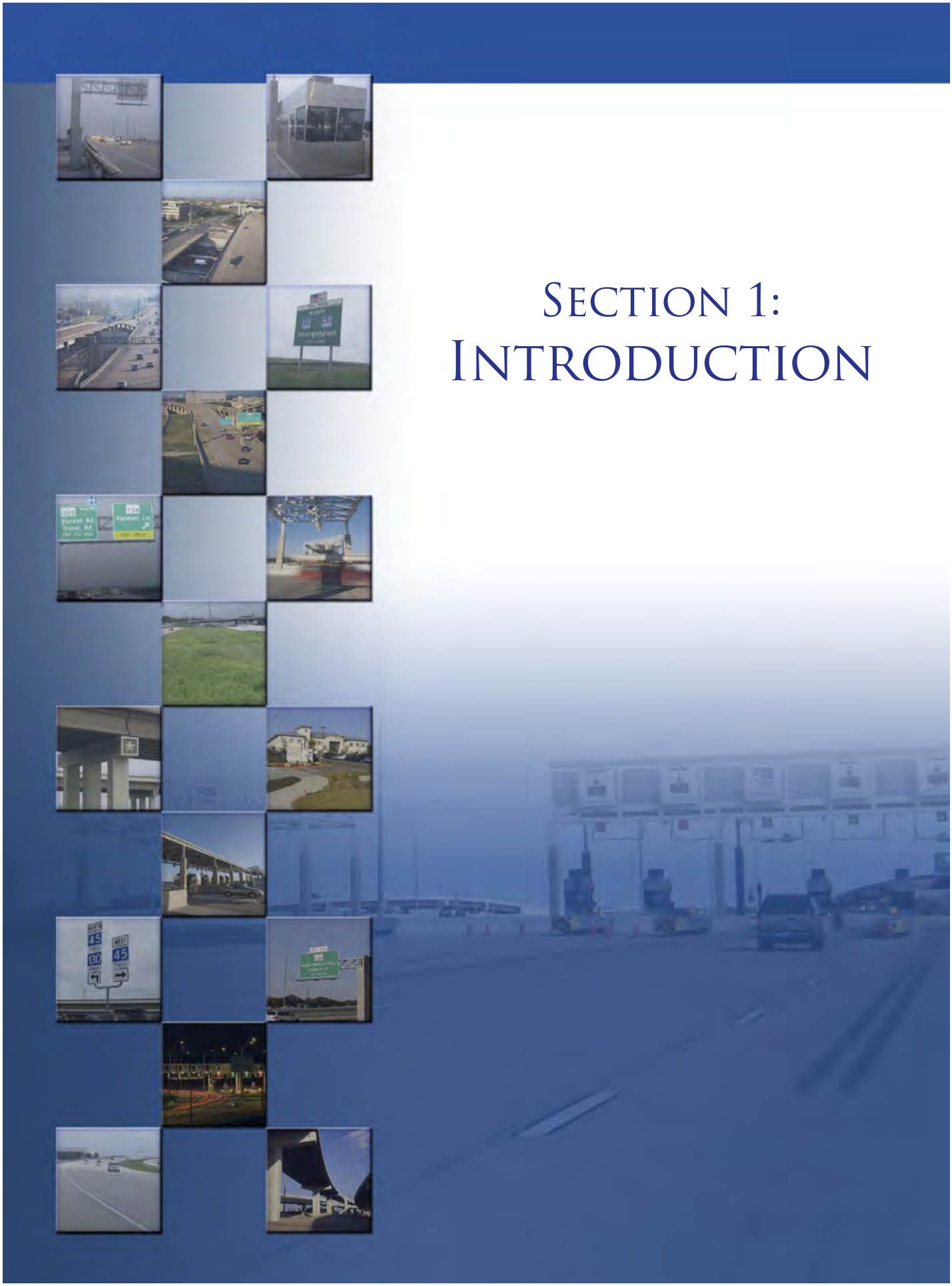
As General Engineering Consultant to the Central Texas Turnpike System, 2002 Project, herein referred to as the CTTS, and in accordance with Section 7.07 of the Indenture of Trust, dated July 15, 2002 between the Texas Transportation Commission and Bank One, National Association, as Trustee, Atkins North America, Inc. is pleased to submit the Central Texas Turnpike System Annual Inspection Report for the Fiscal Year ending August 31, 2011. The findings contained in this report are based upon the assessment of inspection data compiled for the roadway, facilities, and structures components; in coordination with the Texas Department of Transportation (TxDOT) Maintenance and Finance Offices and the Texas Turnpike Authority Office; and Atkins' general knowledge of the condition of CTTS facilities.

This is the fourth annual inspection of the CTTS since it opened to traffic. The overall condition of the CTTS is excellent. The system's primary feature, its 65 miles of roadway, is in like new condition with only minor deficiencies noted. The roadway achieved an overall score of 96. No single element achieved a score less than 80, with the exception of cracking which rated a score of 79 overall. Most of the cracking observed was not in excess of what is expected and allowable in the pavement method utilized on these roadways.

The FY 2011 annual inspection also revealed that all facilities (buildings) are in very good condition overall. The majority of the deficiencies found are cosmetic in nature. Bridges, which are inspected under the Federal Bridge Inspection Program, are reported in good condition. High mast light towers and overhead signs were inspected this year on SH 45 and are in very good condition with only minor deficiencies noted. The summary of the bridge, high mast light tower and overhead sign reports are included in the appendices.

TxDOT has programmed approximately $8.50 million in FY 2011 for routine and periodic maintenance for the CTTS. These funds are used for maintenance of all highway and structure assets and other safety related upgrades. Funding for routine and periodic maintenance for FY 2012, sufficient to address all deficiencies noted in this report, will be determined for approval by the Texas Transportation Commission.

In addition to the analysis of inspection results, this report presents the status of the CTTS with respect to the Texas Condition Assessment Program (TxCAP). The TxDOT commitment to system improvement and preservation is obvious. By continually monitoring system conditions and ensuring that its facilities are maintained in top condition, TxDOT is better able to provide for the safety and convenience of its patrons while maintaining a safe investment for bondholders.



Section 1: Introduction

1. Introduction

1.1 General Description and Procedure of Inspection

The CTTS annual inspection is conducted based on the three major categories of the system: roadways, facilities, and structures. The roadway inspection features three general categories of roadway elements: pavement, traffic operations and roadside. The facilities inspection is based on three general building types: the Customer Service Center Building, toll plaza administration buildings (mainline plazas), and toll plaza buildings (ramps). In addition to the three building types, canopy structures are present at each mainline and ramp plaza. The major elements in each of the three building types are subdivided into four categories and are detailed in Section 2.3 Facilities. All roadways and facilities were inspected by Atkins, the CTTS General Engineering Consultant. This report reflects the findings of the roadway and building inspections that were accomplished for FY 2011. Selected photographs of roadway and facility components are included in Appendix A.

The visual inspection of all structures was conducted during this year's field inspection. The structures inspection includes bridges, overhead/cantilever signs, and High Mast Light Towers (HMLTs). A summary of all the Federal Bridge Inspection Reports for bridges within the CTTS indicates no major deficiencies with any of the CTTS's bridges. The bridge summary is located in Appendix C.

All three roadways within the CTTP were inspected utilizing the TxCAP scoring system. The TxCAP program combines data from three different divisions' reporting systems: The Texas Maintenance Assessment Program (TxMAP), the Pavement Management Information System (PMIS) and the Texas Traffic Assessment Program (TxTAP) to assess the CTTS's assets. The development of TxCAP eliminates duplication of the three separate scoring systems and provides a simplified and concise scoring scale. The system is based on a 5-point rating scale.

The TxCAP rating, which supports the findings of the annual inspection, allows a comparison of the CTTS roadway conditions to the statewide standard. The ratings assigned to the CTTS can be used to make general recommendations on system components needing improvement. A summary of the TxCAP rating system is described in more detail and the scores are included in the roadway section of this report. The rating system utilized by the CTTS is defined in detail in Section 2, Subsection 2.2, Roadways.

All inspections are conducted in accordance with standard procedures developed by the Federal Highway Administration and Texas Department of Transportation (TxDOT) and involve an extensive visual examination of all elements relative to the category of inspection. A detailed tabulation of the conditions observed on the date of the field inspection is prepared in the form of inspection worksheets. The

worksheets are spot-checked in the field to verify accuracy and consistency and the results are reviewed and summarized for presentation in Appendix B.

1.2 Description of Central Texas Turnpike System

In FY 2011, the CTTS is comprised of three main roadway components. The first component, the Loop 1 Extension, is approximately three miles in length and runs north from FM 734 (Parmer Lane) to the SH 45 interchange. SH 45, the second of CTTS's three highways, currently begins west of US 183 at Ridgeline Blvd. and extends east approximately 13 miles to the SH 130/SH 45 interchange north of Pflugerville. The third component, SH 130 currently begins north of Georgetown, Texas and extends 49 miles south to US 183 in southeast Travis County. All three of the CTTS highways are multi-lane, limited access toll facilities. The three highways combined provide 65 centerline miles to Texas' Intrastate Highway System, and include 210 bridges and 57 buildings. The system's main roadway components are summarized in Table 1 and illustrated in Figure 1.

Table 1

Central Texas Turnpike System Components

Component	Centerline Mile Lengths
	Mi.
Loop 1	3
State Highway 45	13
State Highway 130	49
Total	**65**

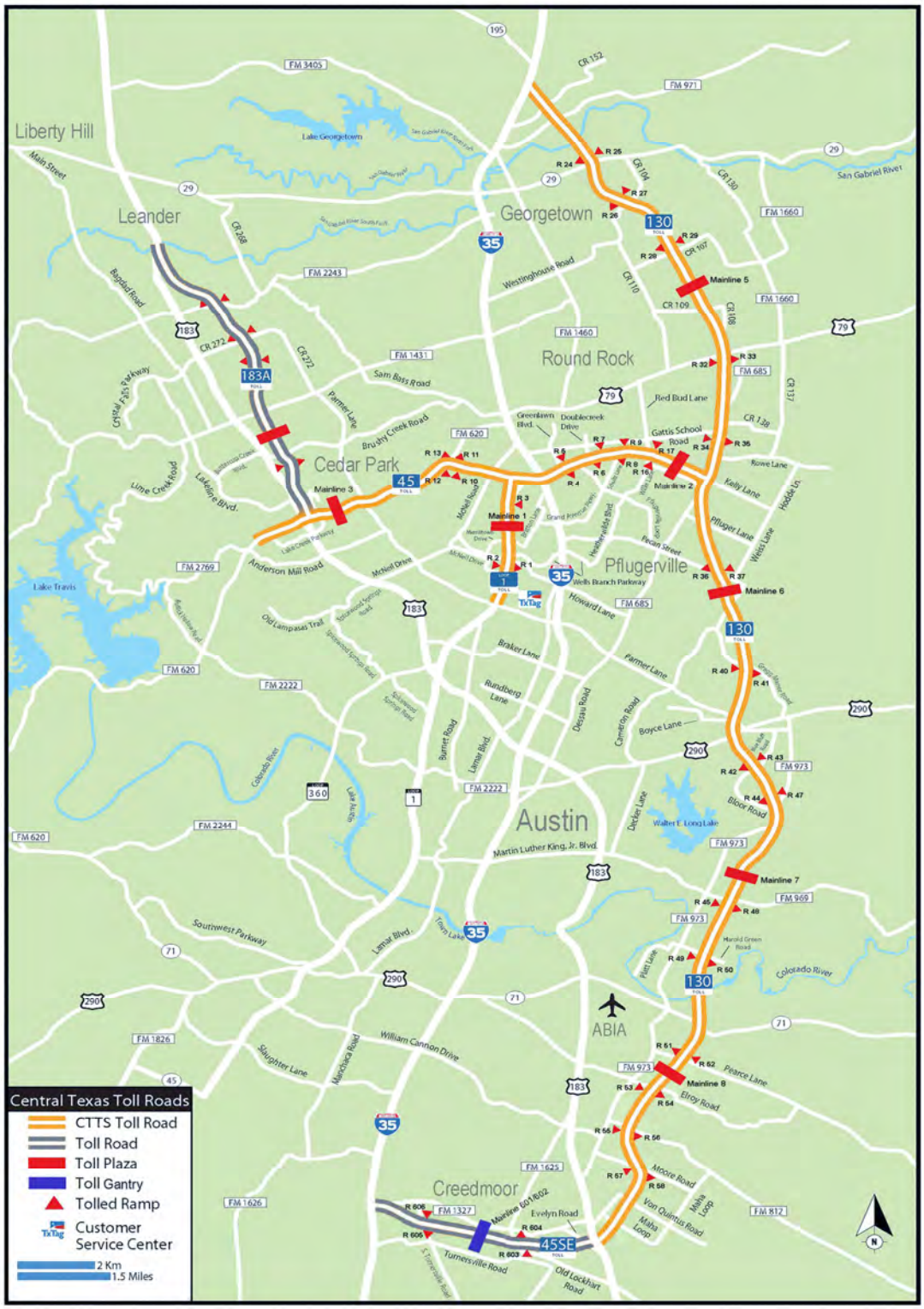
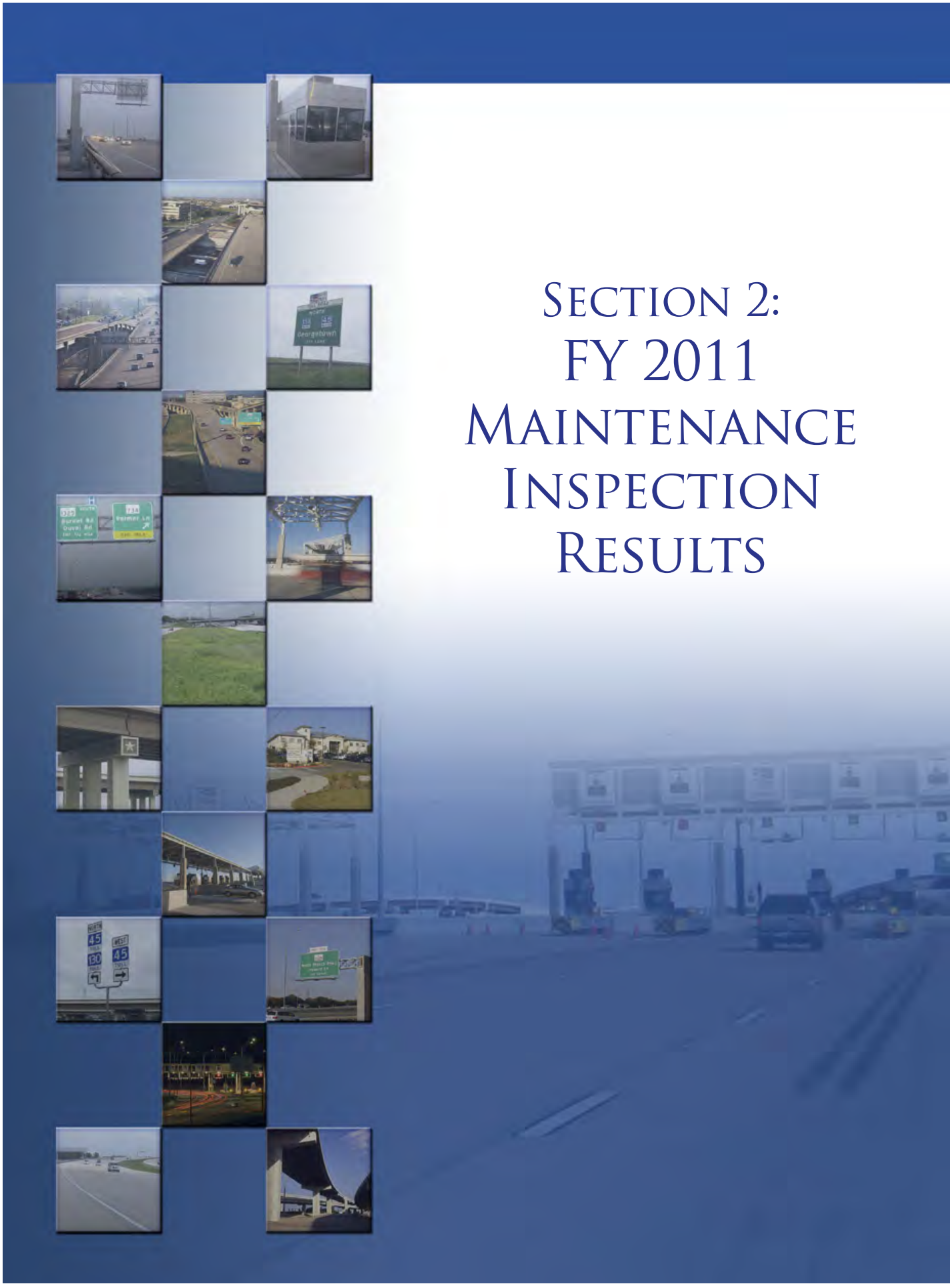


Figure 1 - Central Texas Toll Roads



Section 2: FY 2011 Maintenance Inspection Results

2. FY 2011 Maintenance Inspection Results

2.1 Introduction

The findings of the FY 2011 Annual Inspection of the Central Texas Turnpike System are based on an extensive evaluation of the roadway, facility, and structures inspections and are outlined in the following paragraphs. The TxDOT ratings assigned to the various roadway elements are presented, along with a general description of the condition of the system's roadways, buildings and structures at the time of inspection.

No major deficiencies were found in any of the three categories of the 2011 inspection; roadways, facilities or structures that have been completed and are in service.

The CTTS inspection does not take into account the criticality of the elements in relationship to each other. When reviewing deficiencies, one should remember that a number of considerations influence the desired level of service. These include safety, protection of private and public investment, comfort, economics, environmental impact, aesthetics, and funding constraints. A pavement failure, for example, would receive priority over a deficiency in litter removal because it may have an immediate impact on the safety of the patron.

2.2 Roadways

The roadway inspection is divided into three general categories of roadway elements: pavement, traffic operations and roadside features. A sketch identifying the major elements of a typical roadway is included as Figure 2.

Atkins utilized a Roadway Rating Procedure (RRP) based on using the original 25 roadway elements outlined in the TxCAP document. The ratings and descriptions of the numerical grading system are based on a five-point system, as used in the TxCAP system, as shown in Table 2. The 5-point system is converted to a percentage by multiplying each rating by twenty. The resulting score is then weighted by applying the TxCAP values outlined in Table 3 to determine the overall score for each category. Each category's overall score is then weighted according to appropriate TxCAP values to obtain a total composite score for the entire roadway system.

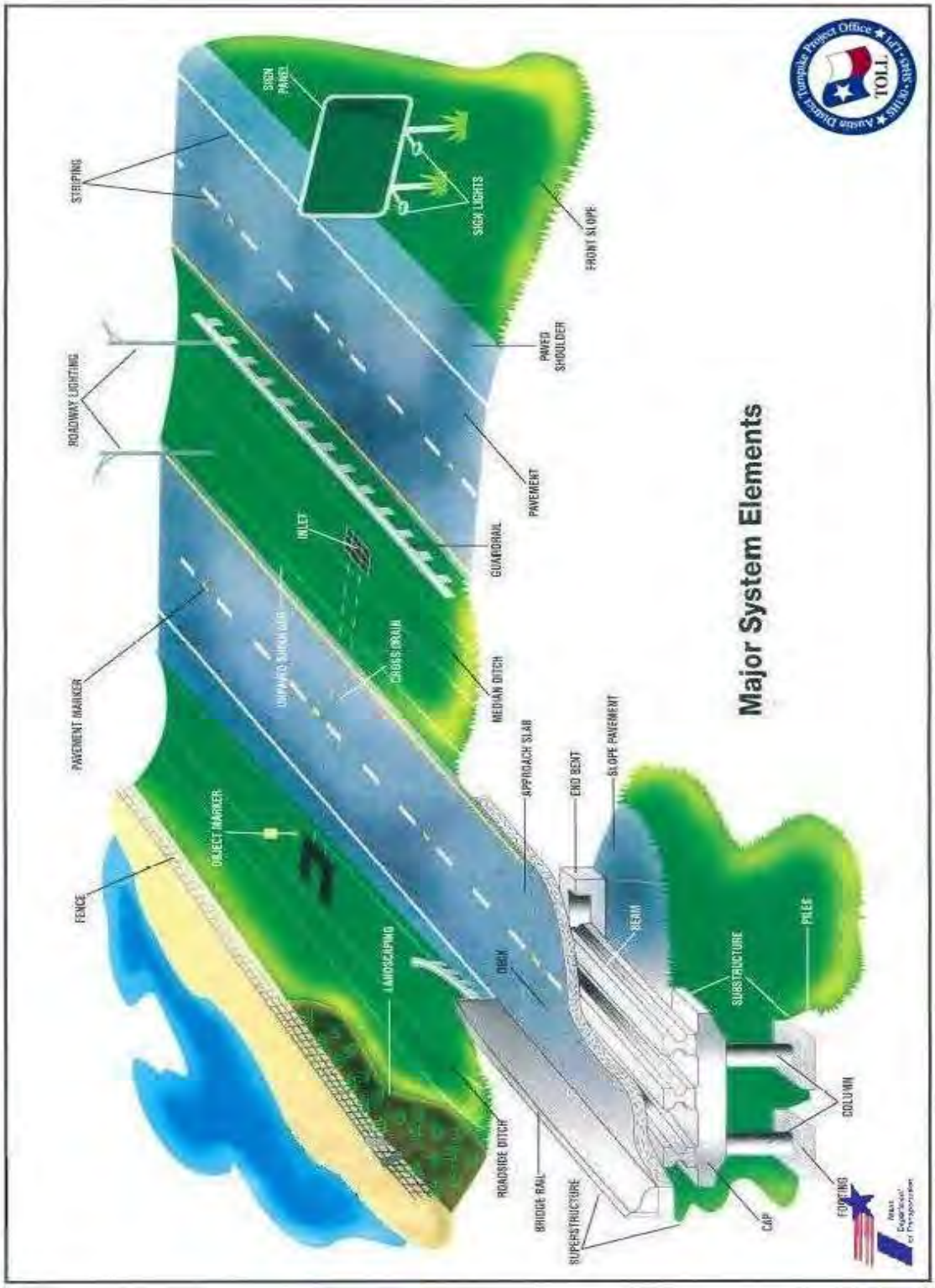


Figure 2 – Major System Elements

Table 2
CTTS Roadway Inspection Rating Scale

Grade	Rating	Description
5	Excellent	No deficiencies noted. Feature is in like new condition
4	Good	No maintenance is necessary. Feature appearance and functionality/operability are good.
3	Degraded	Maintenance is required to protect public or system. Feature appearance and functionality/operability are below average.
2	Unsatisfactory	Immediate repair is required to protect public or system. Feature appearance and functionality/operability are substandard.
1	Emergency	Immediate maintenance is required to protect public or system. Feature appearance and functionality/operability are unacceptable.

Five elements; railroad crossings, signals, work zones, mailboxes and general public rating contained in the traffic operations and roadside categories were not applicable to this project. These elements are not scored in this year's inspection. The TxCAP weighted scores of the remaining elements were increased proportionally to obtain the 100-point maximum as shown in Table 3.

This information is entered directly into a database located on laptop computers in the field for later compilation and reporting for each roadway. Inspection results are separated by roadway/ramp segment and lane direction.

All of the major elements contained within each category are in Tables 4 through 6. In addition, the scores for each major element are included. A rating of two or below on the field inspection worksheets indicates that the portion of the element is degraded and reported as deficient. All three roadways contained within the CTTS are summarized in Table 7. The inspection results shown include all major categories of Turnpike roadway facilities: mainline roadways, ramps and interchanges.

The results of this year's annual inspection indicate that the Turnpike System roadway facilities are in like new condition and are being maintained in an overall excellent condition. No major roadway deficiencies were identified by the Turnpike Systems annual inspection.

Table 3
TxCAP Roadway Weighted Scoring Values

Pavement Score	**Original Percentage**	**Adjusted Percentage**
Rutting (PMIS)	17.50%	17.50%
Cracking (PMIS)	17.50%	17.50%
Failures (PMIS)	24.00%	24.00%
Ride (PMIS)	16.00%	16.00%
Edges (TxMAP)	12.00%	12.00%
Shoulders (TxMAP)	13.00%	13.00%
Traffic Operations Score		
Raised Pavement Markers (TxMAP)	10.00%	11.76%
Striping, Pavement Graphics (TxMAP)	20.00%	23.53%
Attenuators (TxMAP)	5.00%	5.88%
Delineators (TxMAP)	15.00%	17.65%
Shoulder Texturing (TxMAP)	5.00%	5.88%
Roadside Signs (TxTAP)	30.00%	35.29%
Railroad Crossings (TxTAP)	N/A (5.0%)	0.00%
Signals (TxTAP)	N/A (10.0%)	0.00%
Work Zones (TxTAP)	N/A (0.0%)	0.00%
Roadside Score		
Vegetation Management (TxMAP)	13.00%	18.57%
Litter (TxMAP)	6.00%	8.57%
Sweeping (TxMAP)	11.00%	15.71%
Trees and Brush (TxMAP)	8.00%	11.43%
Drainage (TxMAP)	12.00%	17.14%
Encroachments (TxMAP)	8.00%	11.43%
Guardrails (TxMAP)	7.00%	10.00%
Guardrail End Treatments (TxMAP)	5.00%	7.14%
Mailboxes (TxMAP)	N/A (7.0%)	0.00%
General Public Rating (TxMAP)	N/A (23.0%)	0.00%
Overall Score		
Pavement	**50.00%**	**50.00%**
Traffic Operations	**25.00%**	**25.00%**
Roadside	**25.00%**	**25.00%**

2.2.1 Pavement

The pavement category includes; rutting, cracking, pavement failures, ride rating, edges and shoulders. Pavement throughout the CTTS was generally found in like new condition and achieved an overall score of 95. The lowest pavement element score, cracking, received a score of 75 and was noted on Loop 1. There were no major deficiencies on any of the three roadway systems reported by the annual inspection.

Figure 3 - Typical Roadway Section

As noted in last year's report, the southbound approach to the ML 1 toll plaza on Loop 1 was in need of repairs. Repairs were made on this section of road by the TxDOT Austin District Maintenance Office following distribution of the report.

2.2.2 Traffic Operations

The Traffic Operations category ratings are based on the condition of all features that guide, protect, and assist the patron while traveling the Turnpike System's roadways and interchanges. A Traffic Operations score rating of 95 was achieved. No single element on any of the three roadways was found to be in less than good condition.

The TxCAP rating system does not include an evaluation of lighting systems, but as has been done in previous years, a nighttime inspection of the CTTS was performed in order to assess the overall condition of the system lights. High mast light towers and cobra head streetlights were examined as part of this inspection. The majority of the system was in working order. However, many lights were found to be in need of service.

High mast light towers are present at the major interchanges within the CTTS. The high mast towers at the SH 45/IH 35 and SH 45/Loop 1 interchanges were observed to have approximately 5 to 6 bulbs out at several of the light towers. The SH 45/US 183, SH 45/SH 130, SH 130/IH 35, SH 130/US 290 and SH 130/SH 71 interchanges each had one tower that was not operating at all, but the remaining towers at these locations appeared to be functioning normally.

Cobra head streetlights are present at many areas throughout the CTTS, most frequently at interchanges and tolling locations. A majority of these lights were functioning properly. Most mile segments had less than 5 lights out, with many of them having none out. Locations of the non-functioning lights are detailed in the inspection worksheets located in Appendix B.

Figure 4 – Roadside Sign and Pavement Symbols

2.2.3 Roadside

The determination of the Roadside score for roadside features is generally based upon the consideration of vegetation management, litter removal, drainage structures, and other elements located outside of the paved travel way (Figure 2). The roadside category is in excellent condition and has achieved an overall score of 99. There were no characteristics that rated lower than 94. The lowest element, vegetation management, was found on SH 130. This score is an improvement from the Roadside score in FY 2010.

Figure 5 – Deteriorated Shoulder and Turf Condition

Figure 6 – Desired Shoulder and Turf Condition

Table 4
Condition of CTTS Roadway Elements – Loop 1
FY 2011

Category	Component	Component Score	Maximum Score	Sub Score	TxCAP Weighted Value	Weighted Score
Pavement Score	Rutting	2,600	2,600	100	17.50%	17.5
	Cracking	1,960	2,600	75	17.50%	13.2
	Failures	12,880	13,000	99	24.00%	23.8
	Ride	2,600	2,600	100	16.00%	16.0
	Edges	2,600	2,600	100	12.00%	12.0
	Shoulders	5,040	5,200	97	13.00%	12.6
Loop 1 - Pavement Score						95
Traffic Operations Score	Raised Pavement Markers	2,400	2,600	92	11.76%	10.9
	Striping, Pavement Graphics	4,900	5,200	94	23.53%	22.2
	Attenuators	2,600	2,600	100	5.88%	5.9
	Delineators	2,280	2,600	88	17.65%	15.5
	Shoulder Texturing	2,440	2,600	94	5.88%	5.5
	Roadside Signs	10,360	10,400	100	35.29%	35.2
	Railroad Crossings	0	0	0	0.00%	0.0
	Signals	0	0	0	0.00%	0.0
	Work Zones	0	0	0	0.00%	0.0
Loop 1 - Traffic Operations Score						95
Roadside Score	Vegetation Management	15.240	15,600	98	18.57%	18.1
	Litter	2,480	2,600	95	8.57%	8.2
	Sweeping	2,480	2,600	95	15.71%	15.0
	Trees and Brush	2,600	2,600	100	11.43%	11.4
	Drainage	25,960	26,000	100	17.14%	17.1
	Encroachments	2,600	2,600	100	11.43%	11.4
	Guardrails	7,680	7,800	98	10.00%	9.8
	Guardrail End Treatments	2,600	2,600	100	7.14%	7.1
	Mailboxes	0	0	0	0.00%	0.0
	General Public Rating	0	0	0	0.00%	0.0
Loop 1 - Roadside Score						98
Category Score	Pavement	27,680	28,600	95	50.00%	47.5
	Traffic Operations	24,980	26,000	95	25.00%	23.8
	Roadside	61,640	62,400	98	25.00%	24.6
Loop 1 - Total Roadway Score						**96**

Table 5
Condition of CTTS Roadway Elements – SH 45
FY 2011

Category	Component	Component Score	Maximum Score	Sub Score	TxCAP Weighted Value	Weighted Score
Pavement Score	Rutting	8,700	8,700	100	17.50%	17.5
	Cracking	6,960	8,700	80	17.50%	14.0
	Failures	42,660	43,500	98	24.00%	23.5
	Ride	8,700	8,700	100	16.00%	16.0
	Edges	8,680	8,700	100	12.00%	12.0
	Shoulders	16,260	17,400	93	13.00%	12.1
SH 45 - Pavement Score						**95**
Traffic Operations Score	Raised Pavement Markers	7,220	8,700	83	11.76%	9.8
	Striping, Pavement Graphics	16,420	17,400	94	23.53%	22.2
	Attenuators	8,700	8,700	100	5.88%	5.9
	Delineators	8,040	8,700	92	17.65%	16.3
	Shoulder Texturing	7,560	8,700	87	5.88%	5.1
	Roadside Signs	34,580	34,800	99	35.29%	35.1
	Railroad Crossings	0	0	0	0.00%	0.0
	Signals	0	0	0	0.00%	0.0
	Work Zones	0	0	0	0.00%	0.0
SH 45 - Traffic Operations Score						**94**
Roadside Score	Vegetation Management	52,000	52,200	100	18.57%	18.5
	Litter	8,380	8,700	96	8.57%	8.3
	Sweeping	8,540	8,700	98	15.71%	15.4
	Trees and Brush	8,700	8,700	100	11.43%	11.4
	Drainage	86,600	87,000	100	17.14%	17.1
	Encroachments	8,700	8,700	100	11.43%	11.4
	Guardrails	25,880	26,100	99	10.00%	9.9
	Guardrail End Treatments	8,660	8,700	100	7.14%	7.1
	Mailboxes	0	0	0	0.00%	0.0
	General Public Rating	0	0	0	0.00%	0.0
SH 45 - Roadside Score						**99**
Category Score	Pavement	91,960	95,700	95	50.00%	47.6
	Traffic Operations	82,520	87,000	94	25.00%	23.6
	Roadside	207,460	208,800	99	25.00%	24.8
SH 45 - Total Roadway Score						**96**

Table 6
Condition of CTTS Roadway Elements – SH 130
FY 2011

Category	Component	Component Score	Maximum Score	Sub Score	TxCAP Weighted Value	Weighted Score
Pavement Score	Rutting	23,200	23,200	100	17.50%	17.5
	Cracking	18,400	23,200	79	17.50%	13.9
	Failures	115,400	116,000	99	24.00%	23.9
	Ride	23,200	23,200	100	16.00%	16.0
	Edges	23,200	23,200	100	12.00%	12.0
	Shoulders	42,920	46,400	93	13.00%	12.0
SH 130 - Pavement Score						**95**
Traffic Operations Score	Raised Pavement Markers	21,480	23,200	93	11.76%	10.9
	Striping, Pavement Graphics	44,220	46,400	95	23.53%	22.4
	Attenuators	23,200	23,200	100	5.88%	5.9
	Delineators	20,100	23,200	87	17.65%	15.3
	Shoulder Texturing	19,720	23,200	85	5.88%	5.0
	Roadside Signs	92,660	92,800	100	35.29%	35.2
	Railroad Crossings	0	0	0	0.00%	0.0
	Signals	0	0	0	0.00%	0.0
	Work Zones	0	0	0	0.00%	0.0
SH 130 - Traffic Operations Score						**95**
Roadside Score	Vegetation Management	131,140	139,200	94	18.57%	17.5
	Litter	22,860	23,200	99	8.57%	8.4
	Sweeping	22,800	23,200	98	15.71%	15.4
	Trees and Brush	23,180	23,200	100	11.43%	11.4
	Drainage	229,740	232,000	99	17.14%	17.0
	Encroachments	23,200	23,200	100	11.43%	11.4
	Guardrails	69,320	69,600	100	10.00%	10.0
	Guardrail End Treatments	23,200	23,200	100	7.14%	7.1
	Mailboxes	0	0	0	0.00%	0.0
	General Public Rating	0	0	0	0.00%	0.0
SH 130 - Roadside Score						**98**
Category Score	Pavement	246,320	255,200	95	50.00%	47.6
	Traffic Operations	221,380	232,000	95	25.00%	23.7
	Roadside	545,440	556,800	98	25.00%	24.6
SH 130 - Total Roadway Score						**96**

Table 7
Condition of CTTS Roadway Elements – All Roadways
FY 2011

Category	Component	Component Score	Maximum Score	Sub Score	TxCAP Weighted Value	Weighted Score
Pavement Score	Rutting	34,500	34,500	100	17.50%	17.5
	Cracking	27,320	34,500	79	17.50%	13.9
	Failures	170,940	172,500	99	24.00%	23.8
	Ride	34,500	34,500	100	16.00%	16.0
	Edges	34,480	34,500	100	12.00%	12.0
	Shoulders	64,220	69,000	93	13.00%	12.1
CTTS (All Roadways) - Pavement Score						**95**
Traffic Operations Score	Raised Pavement Markers	31,100	34,500	90	11.76%	10.6
	Striping, Pavement Graphics	65,540	69,000	95	23.53%	22.3
	Attenuators	34,500	34,500	100	5.88%	5.9
	Delineators	30,420	34,500	88	17.65%	15.6
	Shoulder Texturing	29,720	34,500	86	5.88%	5.1
	Roadside Signs	137,600	138,000	100	35.29%	35.2
	Railroad Crossings	0	0	0	0.00%	0.0
	Signals	0	0	0	0.00%	0.0
	Work Zones	0	0	0	0.00%	0.0
CTTS (All Roadways) - Traffic Operations Score						**95**
Roadside Score	Vegetation Management	198,380	207,000	96	18.57%	17.8
	Litter	33,720	34,500	98	8.57%	8.4
	Sweeping	33,820	34,500	98	15.71%	15.4
	Trees and Brush	34,480	34,500	100	11.43%	11.4
	Drainage	342,300	345,000	99	17.14%	17.0
	Encroachments	34,500	34,500	100	11.43%	11.4
	Guardrails	102,880	103,500	99	10.00%	9.9
	Guardrail End Treatments	34,460	34,500	100	7.14%	7.1
	Mailboxes	0	0	0	0.00%	0.0
	General Public Rating	0	0	0	0.00%	0.0
CTTS (All Roadways) - Roadside Score						**99**
Category Score	Pavement	365,960	379,500	95	50.00%	47.6
	Traffic Operations	328,880	345,000	95	25.00%	23.7
	Roadside	815,540	828,000	99	25.00%	24.6
Total Central Texas Toll Roadway Score						**96**

2.3 Facilities

The facilities inspection is based on three general building types: The Customer Service Center Building, toll plaza administration buildings (mainline plazas), and toll plaza buildings (ramps). In addition to the three building types, canopy structures are present at each mainline and ramp plaza. The major characteristics of each building type are subdivided into four categories: architectural, tollbooths, mechanical, and electrical components. Fifty-seven buildings currently exist and were in service at the time of the FY 2011 inspection. Approximately 7,125 facility asset items were inspected, of which, 87 were rated as being in less than fair (rating of 2 or less) condition, for a deficiency rate of 1.22 percent. However, it should be pointed out that, in most cases, these deficiencies represented an aesthetics problem and not structural or safety issues. The CTTS system building quantities are detailed in Table 8.

Table 8
Central Texas Turnpike Building Quantities - FY 2011

Building Types	Loop 1	SH 130	SH 45	Totals
Customer Service Center	1	0	0	1
Mainline Plazas	1	8	2	11
Ramp Plazas	3	30	12	45
Totals	5	38	14	57

As part of the inspection process, all relevant structural components and associated mechanical and electrical systems for all facilities are visually inspected. The ratings are assigned based on the conditions observed and the descriptions of the numerical grading system are based on the same five-point system utilized for the roadway system elements (Table 3). Elements rated deficient are compared to the total number of elements inspected to achieve a percent deficient for each element. A summary of the results for each of the three roadways are contained in Tables 9 through 11, and a system-wide summary is shown in Table 12.

The element that reported the highest deficiency rate was irrigation systems/site grounds at 37.50%. There are various locations on SH 130 where the irrigation system is either not functioning correctly or landscaping that was not completed during the construction period.

There have been concerns regarding concrete pavement cracks where the toll collection system is installed. Currently the pavement score does not show a deficiency, but throughout the CTTS there are small cracks that have the potential to affect the toll system's collection capabilities. These locations require continual monitoring in order to determine the appropriate time for pavement rehabilitation or replacement. This is not expected to occur during FY 2012, but is anticipated sometime in the next several years.

2.3.1 Customer Service Center and Toll Management System

The TxTag Customer Service Center (CSC), as shown in Figure 7 below, provides customer service and account management support for TxDOT's toll projects throughout the state. "TxTag" is the toll transponder that patrons use to pay tolls electronically by establishing a pre-paid account. The CSC also provides system and accounting services for Pay by Mail customers who are billed monthly for their tolls. As the primary center for customer service, the CSC houses TxDOT's customer call center and website support services.

The customer service center became operational in July 2006, and now operates five days a week, Monday through Friday, with approximately 150 employees. With the focus of toll collection moving from manual collection to all electronic (AET), the CSC role has become more important in the collection and accounting of toll revenue. The CSC system database houses information on daily transactions, the toll revenue due by toll collection type, the interoperable revenue due from other agencies and financial reporting information. Other staff include general administration, quality assurance, accounting and reconciliation, human resources, and facility administration.

Figure 7 - Customer Service Center

The toll management system (TMS) collection equipment was not inspected by Atkins as a part of this annual inspection. However, this equipment is continually monitored for collection accuracy and system availability under TxDOT Contract No. 86-748P5012 "Statewide Customer Service Center and Toll Implementation Support". Atkins performs contract management oversight of the TMS vendor and part of that contract includes monthly lane audits of the TMS equipment to ensure the system is operating within its specifications. The Texas Turnpike Authority (TTA) has toll equipment maintenance contracts and contracts for system upgrades in place to ensure the system operates accurately and efficiently.

As of this date, there has been no loss of revenue in the open road tolling (ORT) lanes due to system availability since January 2006.

2.3.2 Mainline and Ramp Plaza Facilities and Canopies

The toll plaza administration facilities and canopies are located either as part of a mainline toll plaza or ramp toll plaza facility. The canopies typically extend from the administration buildings outward, over the tollbooths or toll collection equipment located between the travel lanes. The administration buildings not located at ramp toll plazas are connected to the toll collection booths/equipment by means of an underground tunnel. This facilitates the transport of personnel, toll collection data, and supplies.

Figure 8 - Ramp Canopy

2.3.3 Tollbooths

All tollbooths, including forty that have been decommissioned, were inspected during the FY 2011 inspection. Tollbooths and related subcomponents were noted in excellent condition throughout the CTTS. A typical tollbooth configuration is pictured below in Figure 9. The condition of the elements and the corresponding deficiencies for each of these categories is summarized in Tables 9 through 11, with a system-wide summary shown in Table 12.

Figure 9 - Tollbooth

2.3.4 Mechanical

Mechanical elements include plumbing fixtures, sewer/septic lines and well and water lines. Four plumbing fixtures and one well/water line were noted in less than fair condition within the system.

2.3.5 Electrical

Of the 895 total elements in the electrical category, only twelve elements were noted as deficient for an overall deficiency rate of 1.34%. A majority of the deficient elements were non-functioning GFI receptacles located throughout the system. No generators were found to be deficient.

Figure 10 – Facility Generator

Table 9

Condition of CTTS Facilities - Loop 1 - FY 2011

Category	Element	Number Inspected	Number Rated Less Than Fair	Percent Deficient
Architectural	Parking Area & Drive Pvm't	26	2	7.69%
	Area Lights	158	1	0.63%
	Roof Drains	3	1	33.33%
	Irrigation System/Site Grounds	4	0	0.00%
	Exterior Walls	27	1	3.70%
	Exterior Windows	10	0	0.00%
	Exterior Doors	18	0	0.00%
	Interior Walls & Ceilings	449	0	0.00%
	Interior Windows & Sills	67	0	0.00%
	Interior Doors	135	0	0.00%
	Interior Flooring	137	1	0.73%
	Fire Extinguishers & Cabinets	198	0	0.00%
	Lockers	0	0	0.00%
	Interior Signs	34	1	2.94%
	HVAC System	188	6	3.19%
	Tunnel	1	0	0.00%
	Elevators, Dumbwaiters	2	0	0.00%
	Bollards	24	0	0.00%
	Canopy	16	0	0.00%
	Finishes	135	0	0.00%
	Handrails	4	0	0.00%
	Fuel Storage	1	0	0.00%
	Systems (Comms/Alarms)	102	3	2.94%
Toll Booths	Interior Booth	17	0	0.00%
	Window	13	1	7.69%
	Counter/Drawer	19	0	0.00%
	Toll A/C	17	0	0.00%
	Area Lights	7	0	0.00%
	Signs	25	0	0.00%
	Concrete Pavement	25	2	8.00%
	Attenuators	19	0	0.00%
	Nose Flashers	18	0	0.00%
	Traffic Signal	26	0	0.00%
	Toll Indicator	24	0	0.00%
	Automatic Coin Machines	3	0	0.00%
	Gates	0	0	0.00%
	Booth Pit	2	0	0.00%
Mechanical	Plumbing Fixtures	25	1	4.00%
	Sewer / Septic Lines	1	0	0.00%
	Well / Water Lines	24	0	0.00%
Electrical	Building Electrical Fixtures	182	3	1.65%
	Generators	8	0	0.00%
	Uninterrupted Power Supply	2	1	50.00%
	Wiring	43	0	0.00%

Table 10

Condition of CTTS Facilities - SH 45 - FY 2011

Category	Element	Number Inspected	Number Rated Less Than Fair	Percent Deficient
Architectural	Parking Area & Drive Pvm't	80	1	1.25%
	Area Lights	86	0	0.00%
	Roof Drains	7	1	14.29%
	Irrigation System/Site Grounds	4	0	0.00%
	Exterior Walls	28	0	0.00%
	Exterior Windows	14	0	0.00%
	Exterior Doors	26	2	7.69%
	Interior Walls & Ceilings	210	3	1.43%
	Interior Windows & Sills	10	0	0.00%
	Interior Doors	56	2	3.57%
	Interior Flooring	56	0	0.00%
	Fire Extinguishers & Cabinets	83	0	0.00%
	Lockers	2	0	0.00%
	Interior Signs	21	0	0.00%
	HVAC System	115	0	0.00%
	Tunnel	2	0	0.00%
	Elevators, Dumbwaiters	4	0	0.00%
	Bollards	47	1	2.13%
	Canopy	56	0	0.00%
	Finishes	46	0	0.00%
	Handrails	12	0	0.00%
	Fuel Storage	4	0	0.00%
	Systems (Comms/Alarms)	47	0	0.00%
Toll Booths	Interior Booth	22	0	0.00%
	Window	12	0	0.00%
	Counter/Drawer	25	0	0.00%
	Toll A/C	22	1	4.55%
	Area Lights	19	0	0.00%
	Signs	51	0	0.00%
	Concrete Pavement	52	1	1.92%
	Attenuators	36	1	2.78%
	Nose Flashers	36	0	0.00%
	Traffic Signal	47	1	2.13%
	Toll Indicator	50	0	0.00%
	Automatic Coin Machines	14	0	0.00%
	Gates	2	0	0.00%
	Booth Pit	4	0	0.00%
Mechanical	Plumbing Fixtures	23	0	0.00%
	Sewer / Septic Lines	0	0	0.00%
	Well / Water Lines	25	0	0.00%
Electrical	Building Electrical Fixtures	145	2	1.38%
	Generators	15	0	0.00%
	Uninterrupted Power Supply	4	1	25.00%
	Wiring	61	0	0.00%

Table 11

Condition of CTTS Facilities - SH 130 - FY 2011

Category	Element	Number Inspected	Number Rated Less Than Fair	Percent Deficient
Architectural	Parking Area & Drive Pvm't	222	0	0.00%
	Area Lights	156	2	1.28%
	Roof Drains	13	1	7.69%
	Irrigation System/Site Grounds	24	12	50.00%
	Exterior Walls	60	0	0.00%
	Exterior Windows	23	0	0.00%
	Exterior Doors	36	0	0.00%
	Interior Walls & Ceilings	366	0	0.00%
	Interior Windows & Sills	28	0	0.00%
	Interior Doors	107	1	0.93%
	Interior Flooring	97	3	3.09%
	Fire Extinguishers & Cabinets	162	0	0.00%
	Lockers	2	0	0.00%
	Interior Signs	43	0	0.00%
	HVAC System	223	6	2.69%
	Tunnel	8	0	0.00%
	Elevators, Dumbwaiters	0	0	0.00%
	Bollards	88	1	1.14%
	Canopy	151	0	0.00%
	Finishes	98	0	0.00%
	Handrails	14	0	0.00%
	Fuel Storage	27	0	0.00%
	Systems (Comms/Alarms)	77	5	6.49%
Toll Booths	Interior Booth	30	0	0.00%
	Window	20	0	0.00%
	Counter/Drawer	35	1	2.86%
	Toll A/C	27	4	14.81%
	Area Lights	53	0	0.00%
	Signs	86	0	0.00%
	Concrete Pavement	87	0	0.00%
	Attenuators	50	0	0.00%
	Nose Flashers	49	0	0.00%
	Traffic Signal	79	1	1.27%
	Toll Indicator	86	0	0.00%
	Automatic Coin Machines	30	0	0.00%
	Gates	2	0	0.00%
	Booth Pit	12	0	0.00%
Mechanical	Plumbing Fixtures	50	3	6.00%
	Sewer / Septic Lines	0	0	0.00%
	Well / Water Lines	49	1	2.04%
Electrical	Building Electrical Fixtures	261	4	1.53%
	Generators	29	0	0.00%
	Uninterrupted Power Supply	9	1	11.11%
	Wiring	136	0	0.00%

Table 12

Condition of Facilities - CTTS (All Roadways) - FY 2011

Category	Element	Number Inspected	Number Rated Less Than Fair	Percent Deficient
Architectural	Parking Area & Drive Pvm't	328	3	0.91%
	Area Lights	400	3	0.75%
	Roof Drains	23	3	13.04%
	Irrigation System/Site Grounds	32	12	37.50%
	Exterior Walls	115	1	0.87%
	Exterior Windows	47	0	0.00%
	Exterior Doors	80	2	2.50%
	Interior Walls & Ceilings	1025	3	0.29%
	Interior Windows & Sills	105	0	0.00%
	Interior Doors	298	3	1.01%
	Interior Flooring	290	4	1.38%
	Fire Extinguishers & Cabinets	443	0	0.00%
	Lockers	4	0	0.00%
	Interior Signs	98	1	1.02%
	HVAC System	526	12	2.28%
	Tunnel	11	0	0.00%
	Elevators, Dumbwaiters	6	0	0.00%
	Bollards	159	2	1.26%
	Canopy	223	0	0.00%
	Finishes	279	0	0.00%
	Handrails	30	0	0.00%
	Fuel Storage	32	0	0.00%
	Systems (Comms/Alarms)	226	8	3.54%
Toll Booths	Interior Booth	69	0	0.00%
	Window	45	1	2.22%
	Counter/Drawer	79	1	1.27%
	Toll A/C	66	5	7.58%
	Area Lights	79	0	0.00%
	Signs	162	0	0.00%
	Concrete Pavement	164	3	1.83%
	Attenuators	105	1	0.95%
	Nose Flashers	103	0	0.00%
	Traffic Signal	152	2	1.32%
	Toll Indicator	160	0	0.00%
	Automatic Coin Machines	47	0	0.00%
	Gates	4	0	0.00%
	Booth Pit	18	0	0.00%
Mechanical	Plumbing Fixtures	98	4	4.08%
	Sewer / Septic Lines	1	0	0.00%
	Well / Water Lines	98	1	1.02%
Electrical	Building Electrical Fixtures	588	9	1.53%
	Generators	52	0	0.00%
	Uninterrupted Power Supply	15	3	20.00%
	Wiring	240	0	0.00%

2.4 Structures

The structures inspection consisted of a visual inspection of the bridge deck, deck joints, related vehicle containment elements, approach slabs, overhead/cantilever signs, and HMLTs. No major deficiencies were found during the assessment for any of the categories related to the CTTS structures. In addition, a summary of the Federal Bridge Inspection Reports for the CTTS bridges were compiled and reviewed. It should be noted that no significant deficiencies were reported or observed that pose a safety threat to users of Central Texas Turnpike System. Table 13 shown below summarizes all major structures of the CTTS.

Table 13

Quantities of CTTS Major Structures - FY 2011

Category	Loop 1	SH 45	SH 130	TOTALS
Bridges	15	69	126	210
Overhead/Cantilever Signs	26	75	77	178
High-Mast Light Towers	9	61	27	97
Totals	50	205	230	485

2.4.1 Bridges

The Federal Bridge Inspection Summary Report (Appendix C) was compiled, reviewed, and is included on the CD located in the CD jacket inside the back cover of this report. The bridge components and major elements are listed in Table 14. The biennial inspection is based on three main components, comprised of a total of 93 elements and 117 sub-elements for fixed bridges only. A numerical score is generated for each component based on the rating scale shown in Table 15. All of the CTTS's bridges were inspected in FY 2010 and the results are included in this report. The next inspection of the bridges is scheduled for FY 2012. A review of the Federal Bridge Inspection Summary Report found no major deficiencies on any bridge within the CTTS. Of the 210 bridges within the CTTS only 5 (2.4%) had a rating in any category as low as 6 (Satisfactory). The remainder of the ratings were all in the 7 to 9 range (Good to Excellent).

Figure 11 - Bridges

Table 14 **Bridge Components**		
Deck	**Substructure**	**Superstructure**
Concrete Deck/Slab	Column or Pile	Closed/Open Girders
Deck Joints	Hollow Core Pile	Stringer
Approach Slabs	Pier Wall	Thru Truss
Bridge Railing	Abutment	Deck Truss
	Pile Cap/Footing	Arch
	Pile Jacket	Floor Beams
	Cap	Culvert
	Abutment Slope Protection	Bearings
	Bulkhead/Seawall	Unpainted Steel Superstructure
	Fender/Dolphin System	Painted Steel Superstructure
	Wingwall/Retaining Wall	Prestressed Concrete Superstructure
	Mechanically Stabilized Earth Wall	Reinforced Concrete Superstructure

Table 15 **Bridge Inspection Rating Scale**		
Grade	**Rating**	**Description**
9	Excellent	All elements are in excellent condition.
8	Very Good	There were no problems noted.
7	Good	Element has some minor problems. Minor maintenance may be needed.
6	Satisfactory	Element shows some minor deterioration. Maintenance may be needed.
5	Fair	Element is sound, but may have minor section loss. Minor rehabilitation may be needed.
4	Poor	Element exhibits advanced section loss. Major rehabilitation may be needed.
3	Serious	Element has loss of section that has seriously affected the structure. Repair of rehabilitation is required immediately.
2	Critical	Element shows advanced deterioration. It may be necessary to close the bridge until corrective action is taken.
1	Imminent Failure	Bridge is closed to traffic. Corrective action may permit light service.
0	Failed	Bridge is out of service and beyond corrective action.

2.4.2 Overhead/Cantilever Signs

Overhead and cantilever signs, such as the one pictured in Figure 12, are suspended above the travel way by large support structures and are included in the roadside category. These signs provide critical directional information, guiding the patron throughout the Central Texas Turnpike System. TxDOT performed an inspection of the overhead/cantilever structures at the completion of their construction. At that time, none of the overhead/cantilever sign components and subcomponents inspected was noted as being in less than fair condition. Beginning in FY 2011, the overhead and cantilever signs will be inspected biennially. In FY 2011, the overhead and cantilever signs for SH 45 were inspected. Next year, the overhead and cantilever signs for Loop 1 and SH 130 will be inspected. The results of this year's inspection indicate that SH 45's 75 overhead and cantilever signs are in very good condition. A total of 5 items were found to be in need of repair. These items have been reported to Austin District Maintenance. A summary of the results and the items in need of repair can be found in Appendix D.

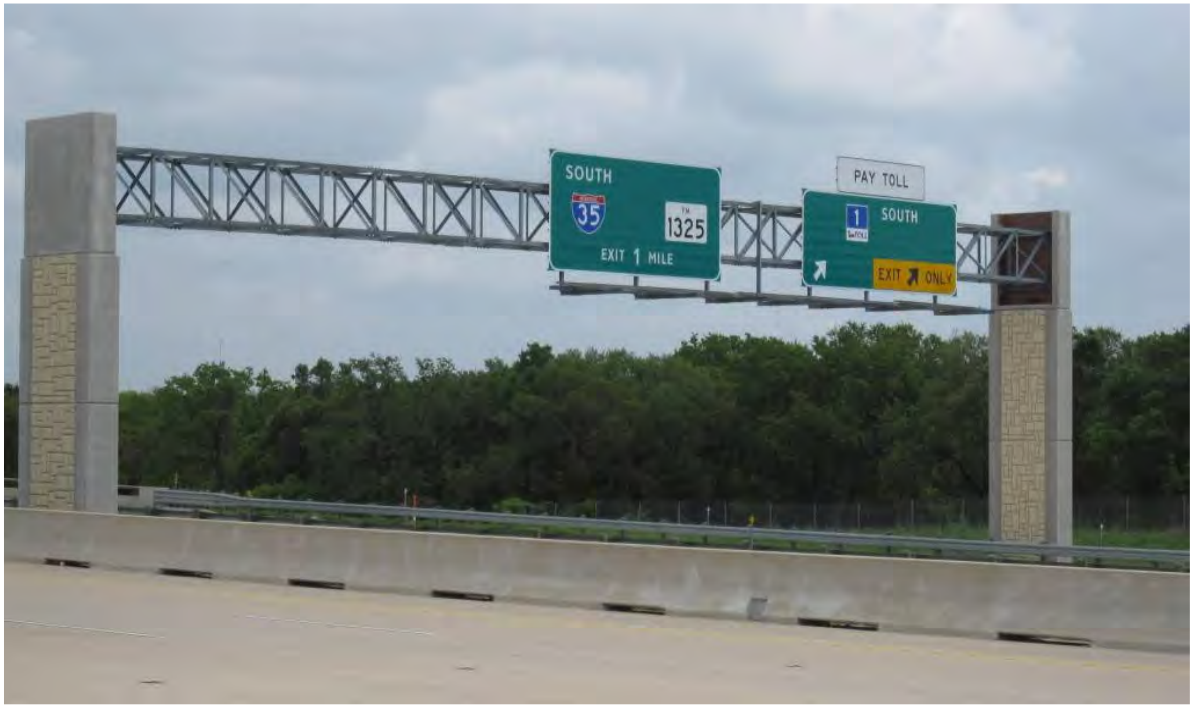
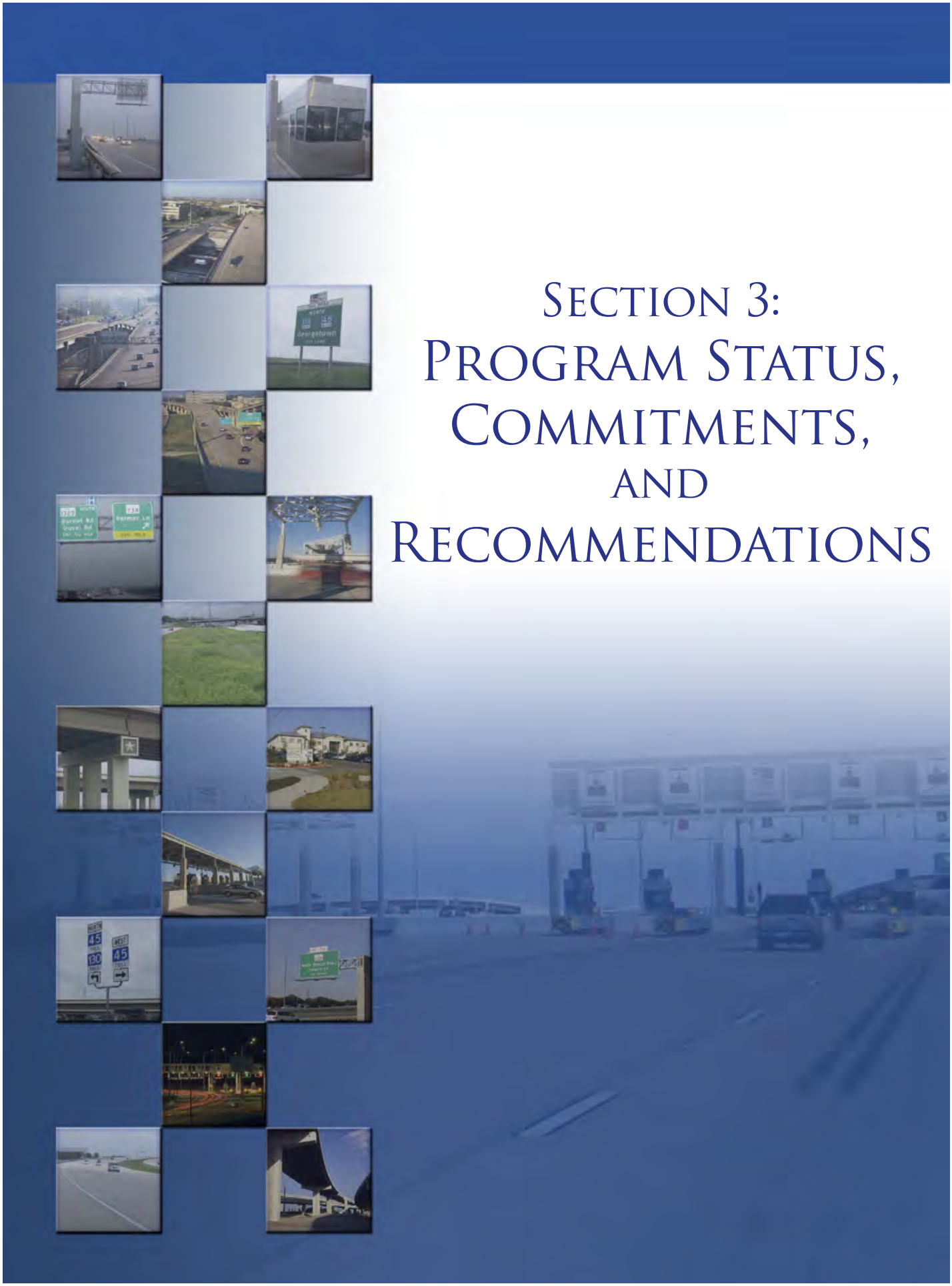


Figure 12 - Overhead Sign Structure

2.4.3 High Mast Light Towers (HMLTs)

Similar to overhead/cantilever signs, HMLTs were inspected by TxDOT at the completion of their construction. No deficiencies were noted during the post construction inspection. These structures, like the one pictured in Figure 13, provide illumination for improved nighttime visibility at various locations along the CTTS, such as interchanges and toll facilities. The condition of high mast light towers is determined by the two components listed in Table 17 below. Beginning in FY 2011, the HMLTs will be inspected biennially. In FY 2011, the HMLTs for SH 45 were inspected. Next year, the HMLTs for Loop 1 and SH 130 will be inspected. The results of this year's inspection indicate that SH 45's 61 HMLTs are in very good condition. A total of 16 minor deficiencies were found to be in need of repair. These items have been reported to Austin District Maintenance. A summary of the results and the items in need of repair can be found in Appendix D.

Figure 13 – High Mast Light Tower



Section 3: Program Status, Commitments, and Recommendations

3. Program Status, Commitments, and Recommendations

3.1 Program Status

The condition of the roadway, building and structure assets of the CTTS is excellent. This is due both to the project having been opened to traffic recently and the proactive maintenance program that has been put in place by TxDOT. Each of the improvements recommended in the FY 2010 Inspection Report was made by TxDOT Austin District Maintenance.

3.2 Programmed Commitments

As required by the bond indenture, the Texas Transportation Commission (TTC) approved the FY 2011 maintenance budget prior to the start of the fiscal year. The amounts approved were $7,609,888 for routine maintenance and $1,130,892 for the maintenance reserve account for 'Unusual and Extraordinary Maintenance' and periodic maintenance.

It is expected that TxDOT will expend approximately $8,500,000 this fiscal year for routine maintenance. TxDOT has preliminarily programmed $7,876,234 for routine maintenance for the CTTS for the Fiscal Year 2012. This funding level is appropriate to address the deficiencies identified by this report to continue to maintain the facility properly.

The maintenance reserve for FY 2011 was estimated to repair pavement at the southbound approach to the mainline toll plaza (ML 1) on Loop 1 and to make repairs to the SH 130 roadside due to slope failures. As of the date of this report, the Loop 1 pavement repair has been and the slope repairs have been made on SH 130. These slope repairs have been made by the original SH 130 contractor and will require additional monitoring.

Atkins will work with TxDOT and will review and comment on the proposed Maintenance and Reserve account funding levels prior to the approval of those funding levels at the August 2011 TTC meeting. The Maintenance Reserve account will be reviewed to ensure that the appropriate funding for FY 2012 is in place for necessary repairs.

3.3 Recommendations

- Those elements identified as sub-standard should be addressed and returned to the proper level.

125 E. 11th Street
Austin, TX 78701
Phone: 512-463-8588
www.txdot.gov

Austin District Office
7901 N. IH 35
Austin, TX 78753
Phone: (512) 832-7000

6504 Bridge Point Parkway,
Suite 200
Austin, TX 78730
Phone: (512) 327-6840
Phone: (800) 880-5949
www.atkinsglobal.com