Texas Department of Transportation

CMA SPECIFICATIONS

Item 9

Attachment 9-1

CMA Performance and Measurement Table

January 2, 2019

ATTACHMENT 9-1: PERFORMANCE AND MEASUREMENT TABLE

ELEMENT CATEGORY	REF	ELEMENT	PERFORMANCE OBJECTIVE	REMEDY PERIOD			INSPECTION AND MEASUREMENT METHOD	REF	MEASUREMENT RECORD	TARGET
				Cat1	Cat1	Cat2				
				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
1) PAVEMENT										
							Unless stated otherwise, measurements shall be conducted using procedures, techniques, and measuring equipment consistent with TxDOT's Pavement Management Information System Rater's Manual, TxDOT Designation TEX-1001-S "Test Procedure for Operating Inertial Profilers and Evaluating Pavement Profiles" and TxDOT Specification No. TxDOT 968-62-65 "Pavement Condition Data Collection Services" (See Note 4). Unless otherwise stated, pavement performance measurement records relate to 0.1-mile sections as described in the Pavement Management Information System Rater's Manual.			
	1.1	Ride quality	All roadways have a smooth surface course (including bridge deck approaches, covers, gratings, frames and boxes).	24 hours	28 days	6 months	a. Measurement of International Roughness Index (IRI) according to TxDOT standard Tex-1001-S, Operating Inertial Profilers and Evaluating Pavement Profiles.	1.1.1	For 100% of all Performance Sections measured excluding Performance Sections with bridge deck and/or bridge approach slab, average IRI is less than or equal to: • Mainlanes, ramps - 95" per mile • Frontage roads - 105" per mile	100%
							b. 10-ft straightedge used to measure discontinuities for localized areas.	1.1.2	For 100% of all Performance Sections measured in localized areas, excluding bridge decks and the 100' length of pavement on either side of the bridge decks, maximum 1/8" variation of the pavement surface from the testing edge of the straightedge between any two straightedge contact points with the pavement surface.	100%
								1.1.3	For 100% of all Performance Sections that include a bridge deck and/or bridge approach slab, maximum 1/4" variation of the pavement surface from the testing edge of the straightedge between any two straightedge contact points with the pavement surface, measured at any location within the 100 feet length of pavement on either side of the bridge deck. For clarification, in addition to measurements in which both ends of the straightedge have contact points on pavement approach to structure, this measurement shall allow one contact point of the straightedge on the traveled surface supported by the structure and the other contact point on the pavement approach to the structure.	100%
1) PAVEMENT										
							a. Measurement of International Roughness Index (IRI) according to TxDOT standard Tex-1001-S, Operating Inertial Profilers and Evaluating Pavement Profiles.	1.1.4	For 100% of all mainlane Performance Sections that include a bridge deck and/or bridge approach slab, excluding the IRI profile lengths on bridge deck and the 100 feet of pavement on either side of the bridge deck, average IRI for each Performance Section is less than or equal to 95" per mile.	100%
								1.1.5	For 100% of all Performance Sections, no localized roughness deviations calculated in accordance with the method set forth in Section 7 of TEX-1001-S exceeding 0.15" or less than -0.15" (positive deviations are bumps and negative deviations are dips).	100%

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				Cat1	Cat1	Cat2				
				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
1a) PAVEMENT (Asphalt)										
	1a.1	Ruts	All roadways are free from surface depressions in wheel path exceeding measurement record thresholds.	24 hours	28 days	6 months	a. Depth as measured using an automated device in compliance with TxDOT Specification 968-62-65 Section 10.4.2.	1a.1.1	Percentage of wheel path length with ruts greater than 1/4" in depth in each Performance Section. • Mainlanes, shoulders, and ramps - less than or equal to 3% • Cross streets - less than or equal to 3% • Frontage roads - less than or equal to 10%	100%
							b. 10-ft straight edge used to measure rut depth for localized areas.	1a.1.2	No depth of rut at any location greater than 1/2".	100%
	1a.2	Longitudinal Cracking	All roadways are free from cracking exceeding measurement record thresholds.	24 hours	28 days	6 months	a. Pavement surface distresses measured using the methods identified in TxDOT Specification 968-62-65 Section 10.4.5. b. Visual inspection	1a.2.1	No unsealed longitudinal cracking in any Performance Section with a width greater than 1/8" (generally, can be seen while seated in the rating vehicle) at any point throughout the width of the pavement.	100%
	1a.3	Transverse Cracking	All roadways are free from cracking exceeding measurement record thresholds.	24 hours	28 days	6 months		1a.3.1	No unsealed transverse cracking in any Performance Section with a width greater than 1/8" (generally, can be seen while seated in the rating vehicle) at any point throughout the width of the pavement.	100%
	1a.4	Alligator Cracking	All roadways are free from cracking exceeding measurement record thresholds.	24 hours	28 days	6 months		1a.4.1	Total area of alligator cracking shall not exceed 10% of pavement surface area in any Performance Section (where there are multiple areas of alligator cracking within a Performance Section, these areas shall be added to determine whether the 10% criterion is exceeded).	100%
	1a.5	Block Cracking	All roadways are free from cracking exceeding measurement record thresholds.	24 hours	28 days	6 months		1a.5.1	Total area of block cracking shall not exceed 10% of pavement surface area in any Performance Section (where there are multiple areas of block cracking within a Performance Section, these areas shall be added to determine whether the 10% criterion is exceeded).	100%
	1a.6	Raveling	All roadways are free from raveling exceeding measurement record thresholds.	24 hours	28 days	6 months		1a.6.1	Total area of raveling shall not exceed 10% of pavement surface area in any Performance Section (rating code 1 or less). (where there are multiple areas of raveling within a Performance Section, these areas shall be added to determine whether the 10% criterion is exceeded).	100%

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				Cat1	Cat1	Cat2				
				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
1a) PAVEMENT (Asphalt)										
	1a.7	Flushing / bleeding	All roadways are free from flushing / bleeding exceeding measurement record thresholds.	24 hours	28 days	6 months	a. Pavement surface distresses measured using the methods identified in TxDOT Specification 968-62-65 Section 10.4.5. b. Visual inspection	1a.7.1	Total area of flushing / bleeding shall not exceed 10% of wheel path surface area in any Performance Section (rating code 1 or less). (where there are multiple areas of flushing / bleeding within a Performance Section, these areas shall be added to determine whether the 10% criterion is exceeded).	100%
	1a.8	Failures	All roadways are free from failures exceeding measurement record thresholds.	24 hours	28 days	6 months		1a.8.1	No failures exceeding the failure criteria set forth in the TxDOT PMIS Rater's Manual.	100%
1b) PAVEMENT (CRCP)										
	1b.1	Spalled Cracks	All roadways are free from spalled cracks.	24 hours	28 days	6 months	a. Pavement surface distresses measured using the methods identified in TxDOT Specification 968-62-65 Section 10.4.5. b. Visual inspection	1b.1.1	No spalled cracks as set forth in the TxDOT PMIS Rater's Manual.	100%
	1b.2	Punchouts	All roadways are free from punchouts.	24 hours	28 days	6 months		1b.2.1	No punchouts as set forth in the TxDOT PMIS Rater's Manual.	100%
	1b.3	Longitudinal Cracking	All roadways are free from longitudinal cracks exceeding measurement record thresholds.	24 hours	28 days	6 months		1b.3.1	No unstitched longitudinal cracks with width less than or equal to 1/8". No longitudinal cracks with width exceeding 1/8"	100%
1c) PAVEMENT (JCP)										
	1c.1	Failed Joints and Cracks	All roadways are free from failed joints and cracks.	24 hours	28 days	6 months	a. Pavement surface distresses measured using the methods identified in TxDOT Specification 968-62-65 Section 10.4.5. b. Visual inspection	1c.1.1	No failed joints as set forth in the TxDOT PMIS Rater's Manual.	100%
	1c.2	Shattered Slabs	All roadways are free from shattered slabs.	24 hours	28 days	6 months		1c.2.1	No shattered slabs as set forth in the TxDOT PMIS Rater's Manual.	100%
	1c.3	Slabs with Longitudinal Cracks	All roadways are free from slabs with longitudinal cracks	24 hours	28 days	6 months		1c.3.1	No slabs with longitudinal cracks as set forth in the TxDOT PMIS Rater's Manual.	100%
	1c.4	Failures	All roadways are free from failures.	24 hours	28 days	6 months		1c.4.1	No failures exceeding the failure criteria set forth in the TxDOT PMIS Rater's Manual.	100%

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				Cat1	Cat1	Cat2				
				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
2) DRAINAGE										
	2.1	Pipes, ditches, channels, catch basins, inlets, manholes and outfalls	Each element of the drainage system functions properly from the point at which water drains from the travel way to the outfall or drainage way.	24 hrs	28 days	6 months	Visual inspection supplemented by CCTV where required to inspect buried pipe work.	2.1.1	Pipes, ditches and channels are clear of obstructions to flow, including debris and other accumulations, such that throughout their length, no more than 10% of the design cross sectional area is impeded.	100%
								2.1.2	Performance Objective met.	100%
	2.2	Drainage treatment devices	Drainage treatment and balancing systems, flow and spillage control devices function correctly and their location and means of operation is recorded adequately to permit their correct operation in Emergency.	24 hrs	28 days	6 months	Visual inspection	2.2.1	Number of devices functioning correctly with means of operation displayed.	100%
	2.3	Travel way	The travel way is free from water to the extent that such water would represent a hazard because of its position or depth.	24 hours	28 days	6 months	Visual inspection	2.3.1	Performance objective met.	100%
	2.4	Discharge systems	Surface water discharge systems perform their proper function and discharge to groundwater and waterways complies with the relevant legislation and permits.	24 hours	28 days	6 months	Visual inspection	2.4.1	Performance objective met.	100%
	2.5	Erosion	No erosion greater than 6" deep along ditches, swales, ponds, and channels.	24 hours	28 days	6 months	Visual inspection	2.5.1	Performance objective met.	100%
	2.6	Channels and ditches; permanent erosion control measures	Where permanent erosion control measures such as rock or concrete riprap are utilized: no undermined or damaged erosion control measures.	24 hours	28 days	6 months	Visual inspection	2.6.1	Performance objective met.	100%

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				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
3) STRUCTURES										
	3.1	Structure components (Structures having an opening measured along the center of the roadway of more than 20 feet between faces of abutments or spring lines of arches or extreme ends of the openings for multiple box culverts or multiple pipes that are 60 inches or more in diameter and that have a clear distance between openings of less than half of the smallest pipe diameter)	(i) Substructures and superstructures are free of: • defects in joint sealants • defects in pedestrian protection measure • scour damage • corrosion of rebar • paint system failures • impact damage (ii) Expansion joints free of: • defects in drainage system • loose nuts and bolts • defects in gaskets and/or seals (iii) The deck drainage system operates as intended. (iv) Parapets free of: • loose nuts and bolts • impact damage • concrete spalling	24 hours	28 days	6 months	a. The National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways – Part 650 b. The TxDOT Bridge Inspection Manual c. The Federal Highway Administration's Bridge Inspector's Reference Manual d. Visual Inspection	3.1.1	Performance objective is met and records maintained as required in the TxDOT Bridge Inspection Manual. Condition rating equal to or greater than seven (7) for any deck, superstructure or substructure.	100%
			v) Bearings and bearing seats are: • properly aligned horizontally and vertically (vi) Sliding and roller surfaces are clean and greased to ensure satisfactory performance. Additional advice contained in bearing manufacturers' instructions in the structure maintenance manual is followed. (vii) Special finishes are clean and perform to the appropriate standards. (viii) All non-structural items such as hoists and electrical fixings, operate correctly, are clean and lubricated as appropriate, in accordance with the manufacturer's recommendations and certification of lifting devices is maintained					3.1.2	Performance objective is met and records maintained as required in the TxDOT Bridge Inspection Manual. Condition rating equal to or greater than seven (7) for any deck, superstructure or substructure.	100%
	3.2	Non-bridge class culverts and pipes	Non-bridge class culverts and pipes are free of: • vegetation, debris and silt • defects in sealant at movement joints • scour damage • corrosion of rebar • impact damage	24 hours	28 days	6 months	Visual inspection	3.2.1	Performance objective met.	100%

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				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
3) STRUCTURES										
	3.3	Load ratings	All structures maintain the design load capacity and no load restrictions for Texas legal loads (including legally permitted vehicles)	24 hours	28 days	6 months	a. Load rating calculations in accordance with the AASHTO Manual for Bridge Evaluation and the TxDOT Bridge Inspection Manual. b. Load restriction requirements as per the TxDOT Bridge Inspection Manual.	3.3.1	Performance objective met.	100%
	3.4	Gantries and high-masts	Sign gantries, signal gantries and high masts are structurally sound and free of: • loose nuts and bolts • defects in surface protection systems	24 hours	28 days	6 months	Visual inspection	3.4.1	Performance objective met.	100%
	3.5	Access points	All hatches and points of access have fully operational and lockable entryways.	24 hours	28 days	6 months	Visual inspection	3.5.1	Performance objective met.	100%
	3.6	Retaining walls	Retaining walls are free of: • defects in sealed joints • defects in pedestrian protection • scour damage • corrosion of rebar • paint system failure • concrete spalling • impact damage	24 hours	28 days	6 months	Visual inspection	3.6.1	Performance objective met.	100%
			Parapets are free of: • loose nuts and bolts • impact damage • concrete spalling					3.6.2	Performance objective met.	100%
4) PAVEMENT MARKINGS, OBJECT MARKERS, BARRIER MARKERS AND DELINEATORS (NOT USED)										
5) CURBS, GUARDRAILS, SAFETY BARRIERS AND IMPACT ATTENUATORS (NOT USED)										
6) TRAFFIC SIGNS (NOT USED)										
7) TRAFFIC SIGNALS (NOT USED)										
8) LIGHTING (NOT USED)										
9) FENCES, WALLS AND SOUND ABATEMENT (NOT USED)										
10) ROADSIDE MANAGEMENT (NOT USED)										
11) REST AREAS AND PICNIC AREAS (NOT USED)										
12) EARTHWORKS, EMBANKMENTS AND CUTTINGS										

ELEMENT CATEGORY	REF	ELEMENT	PERFORMANCE OBJECTIVE	REMEDY PERIOD			INSPECTION AND MEASUREMENT METHOD	REF	MEASUREMENT RECORD	TARGET
				Cat1	Cat1	Cat2				
				Hazard Mitigation (Note 1)	Permanent Remedy (Note 2)	Permanent Repair (Note 3)				
	12.1	Slope failure	No structural or natural failures of the embankment and cut slopes of the Project.	24 hours	28 days	6 months	Visual inspection	12.1.1	Performance objective met.	100%
	12.2	Slopes General	Slopes are in conformance to the original, as-designed, graded cross-sections (or any modifications to such cross sections needed to address erosion or instability).	24 hours	28 days	6 months	Visual inspection	12.2.1	Performance objective met.	100%
	12.3	Slopes Erosion	Slopes function properly with no erosion of a nature that may result in further deterioration. All necessary erosion prevention measures are in place, including landscaping materials, seeding, turf or other vegetation. The roadway, shoulders and ditches are free from all eroded materials.	24 hours	28 days	6 months	Visual inspection	12.2.2	No erosion greater than six inches deep.	100%
	12.4	Slopes - Permanent Erosion Control Measures	Where permanent erosion control measures such as rock or concrete riprap are utilized, erosion control measures are not damaged or undermined, function properly and concrete slope protection joints are sealed and free from vegetation.	24 hours	28 days	6 months	Visual inspection	12.2.3	Performance objective met.	100%
13) ITS EQUIPMENT (NOT USED)										
14) TOLLING FACILITIES AND BUILDINGS (NOT USED)										
15) AMENITY (NOT USED)										
16) SNOW AND ICE CONTROL (NOT USED)										
17) INCIDENT RESPONSE (NOT USED)										
18) CUSTOMER RESPONSE (NOT USED)										
19) SWEEPING AND CLEANING (NOT USED)										

NOTES FOR PERFORMANCE AND MEASUREMENT TABLE

Note 1. “Category 1 Hazard Mitigation” shall be an action taken by DB Contractor to restore the condition of a Maintained Element for which a Defect has been recorded: (a) to the standard required for new construction; or (b) to a condition such that the Performance Threshold is achieved.

Note 2. “Category 1 Permanent Remedy” shall be an action taken by DB Contractor to restore the condition of a Maintained Element following “Category 1 Hazard Mitigation” of a Category 1 Defect: (a) to the standard required for new construction; or (b) to a condition such that the Target is achieved for each Measurement Record.

Note 3. “Category 2 Permanent Repair” shall be an action taken by DB Contractor to restore the condition of a Maintained Element for which a Category 2 Defect has been recorded: (a) to the standard required for new construction or (b) to a condition such that the Target is achieved for each Measurement Record.

Note 4. Pavement distress data includes distresses identified directly by automated methods and distresses revealed by post-processing of visual images obtained during data collection by TxDOT certified visual distress raters for flexible and rigid pavements.

Texas Department of Transportation

CMA SPECIFICATIONS

Item 9

Attachment 9-2

Maintenance Management Plan

January 2, 2019

DRAFT

Maintenance Management Plan

NAME OF PROJECT
Contract #XXXXX

Day Month Year

Prepared By: **DB Contractor's Name**
Street Address
Suite XXX
City Name, Texas XXXX

Note this is a Template for the MMP and is included to show Proposers what to include and to ensure a consistent approach to the MMP across all TxDOT's maintenance contracts.

DRAFT

MAINTENANCE MANAGEMENT PLAN

For The

NAME OF PROJECT

Approved By:

_____ _____

FirstName LastName
Maintenance Manager (MM) **Date**

_____ _____

FirstName LastName
Maintenance Quality Manager (MQM) **Date**

_____ _____

FirstName LastName
TxDOT's Authorized Representative **Date**

Record of Revisions

Rev.	Date Issued	Pages Affected	Comments
0	XX/XX/XXXX	All	Initial Issue
1	XX/XX/XXXX	XX-XX	Add brief comment regarding revision

Instructions to DB Contractor:

(These instructions to be removed from completed MMP)

1. This Maintenance Management Plan (MMP) template defines the structure and required contents of the MMP. Use this template for each version and revision of the MMP submitted to TxDOT for approval.
2. Include the DB Contractor's processes to achieve compliance with the obligations in the Contract Documents including the Performance Requirements. Describe who is responsible for each activity.
3. Processes should be clear, auditable, measurable, and achievable. Include control points at which the DB Contractor causes its own personnel or independent parties to verify that the work is in compliance with the contract. Identify points in the processes at which TxDOT is given the opportunity to witness or approve the work.
4. Identify the procedures (i.e. detailed steps) that will be utilized (see Appendix 13 for a listing of procedures that are needed at a minimum).
5. Describe the MMP updating process so that TxDOT knows who will be performing what actions when.
6. Section 4.2 of the CMA General Conditions sets forth TxDOT's approval rights and the conditions attached to its approval of the MMP.
7. Provide references to sections of the PMP applicable to Maintenance Services. Keep relevant sections of the PMP updated as needed throughout the Maintenance Period, for design work and construction work after Substantial Completion.
8. Do not duplicate the CMA General Conditions or Design-Build Special Specification Item 50 within the MMP. Where necessary, cross reference relevant parts of the CMA General Conditions or Design-Build Special Specification Item 50.
9. Include within the MMP all Proposal Commitments and how TxDOT will be able to verify the Proposal Commitments have been fulfilled.
10. Ensure the MMP is consistent with the Preliminary MMP included with the Proposal.
11. Instructions to the DB Contractor are shown in this template in parentheses and italics and shall be removed prior to submittal of the MMP to TxDOT.
12. Include references to all policies from the QMP applicable to Maintenance Services.

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1. GENERAL MANAGEMENT AND ADMINISTRATION

1.1 Organization and Personnel

1.1.1 DB Contractor Maintenance Organization Chart

Figure 1.1 below shows the organization chart for Maintenance Services after Substantial Completion.

[Describe the organizational structure and how it will enable the DB Contractor's obligations for Maintenance Services to be met. Describe the reporting lines to TxDOT and internally. Describe the roles and responsibilities assigned to each position. Identify Major Subcontractors and describe the Maintenance Services to be performed by them. Describe continuity of organization and personnel between Maintenance Work before Substantial Completion and Maintenance Services after Substantial Completion.]

Figure 1.1: Organization Chart for Maintenance Services after Substantial Completion

[Insert organization chart showing reporting lines to include at a minimum:

- *TxDOT Project Manager*
- *DB Contractor corporate management team*
- *Maintenance Manager**
- *Maintenance Quality Manager**
- *Maintenance Safety Manager**
- *Individual responsible for training program**
- *Individual responsible for assessing the condition of specified assets and scheduling Renewal Work**
- *Field crews responsible for Maintenance Services for Maintained Elements*
- *Field crews responsible for inspections, Defect identification, categorization, and remedy*

For each individual (*) identify the employing organization. Show positions and activities to be undertaken by Major Subcontractors.]

Appendix 1 shows every staff position delivering Maintenance Services in connection with the Project together with the TxDOT employee counterpart(s) with whom each staff member will regularly interact.

[Include at a minimum the individuals marked with (*) on Figures 1.1, including individuals employed by subcontractors]

1.1.2 Qualifications, Experience necessary and training requirements for DB Contractor staff positions

Appendix 2 shows the individual(s) assigned to staff positions with their positions, contact information (email and mobile phone number), education/qualifications, role, and summary of previous experience.

[Include at a minimum the individuals required to be identified on the organization chart, including individuals employed by subcontractors]

1.1.3 Personnel Training and Certification

Table 1.1 defines responsibility for development and implementation of training programs, who will be conducting the training and certification process for each staff position, including maintenance personnel, subcontractors and maintenance crew members on the topics below.

Forms documenting evidence of attendance and frequency/schedule of training updates to be attended by all relevant staff are shown in Appendix 15.

Table 1.1: Training Program Matrix

Training Program	Person responsible to develop and deliver	Staff positions requiring training	Frequency of training	Link to training program
Maintenance Management Plan training				
Inspections, Defect identification and categorization of Defects				
Hazardous materials, response and mitigation of Incidents involving contamination or waste, OSHA 1910.120 (HAZWOPER Training)				
Maintenance Safety Plan, equipment use, all safety-related activities and enforcement of safety operations				
CPR and first aid				
Work zone traffic control and flaggers in work zones				
Environmental impacts associated with Maintenance Services				
Operating railroad requirements prior to performing Maintenance Services or other activities affecting railroad property				
[Other training programs (details to be added by DB Contractor)]				

[Include at a minimum training requirements for the individuals required to be identified on the organization chart, including individuals employed by subcontractors]

1.2 Communication Protocols

[Transfer processes applicable to Maintenance Services, with suitable amendments from the PMP to the MMP]

1.2.1 Communications with TxDOT and other Governmental Entities

Refer to the following procedures in Appendix 13:

- MMP-001 –Submittals and Coordination with TxDOT, Other Agencies and Third Parties

Contact details for TxDOT, Government Entities, third parties, other stakeholders and their consultant offices with whom the DB Contractor will communicate are listed in Appendix 3.

[Within MMP-001 identify all adjacent highway agencies and address all interfaces with adjacent and connecting roadways.]

1.2.1.1 Coordination during ITS integration and ITS operations

The following are maintenance interfaces with ETCS:

[List the points of interfaces and include reference to diagrams or drawings showing interface lines and demarcations of responsibility for each tolling zone. Include updates consistent with progress of design].

The contact details for the Toll Services Integrator are as follows:

[List the contact details here]

1.2.1.2 Oversize / Overweight Permits

The process for requests for permitting, issuance of permits and enforcement of permits through TxDOT is included in the following procedure in Appendix 13:

- MMP-002 –Agency Coordination for Oversize Loads

[State how TxDMV will be notified of closures associated with permits and how updates for roadway clearances during maintenance and Renewal Work will be provided.

1.2.2 Coordination with Utilities, Stakeholders and other 3rd Parties

Refer to the following procedures in Appendix 13:

- MMP-001 –Submittals and Coordination with TxDOT, Other Agencies and Third Parties

Table 1.2 below shows:

- Utilities, stakeholders and other third parties;
- In-house staff and specialized resources from the maintenance team responsible for coordination (including development and compliance with processes and the production of documentation) for each utility, stakeholder and other 3rd Party; and
- Reference to procedures contained in Appendix 13 specific to each named entity.

Table 1.2: Coordination with Governmental Entities, Stakeholders, Utilities, and Third Parties

Entity, Utility, stakeholder or third party	DB Contractor Personnel responsible for coordination	Reference to Procedure (specific to the named entity)

[Insert Governmental Entity, utility and stakeholder or third party coordination responsibilities and processes for Maintenance Work before Substantial Completion. Include reference to individual procedures applicable to each entity, covering the following:

- *Notification to entity of upcoming Maintenance Services that may affect the entity's operations, e.g. Maintenance Services affecting adjacent business of utility interest*
- *Application by entity for access to inspect, repair, renew or replace its equipment within the Maintenance Limits]*

1.2.3 Internal Communications

For internal communications processes and responsible personnel, refer to

- MMP-001 –Submittals and Coordination with TxDOT, Other Agencies and Third Parties

1.2.4 Public Information and Communications

Refer to Section 6.3

1.3 Project Meetings

[Complete the following information for meetings]

The meeting types, topics, required participants and frequencies of meetings in connection with Maintenance Services shall be in accordance with Table 1.6.

Table 1.6 Meetings In Connection with Maintenance Services

Meeting Type	Frequency	Attendees
Monthly Maintenance Work review meeting	Monthly	TxDOT, Maintenance Manager, other senior personnel

[Insert details of all other meetings in connection with the Maintenance Services including mandatory meetings required by TxDOT.]

1.4 Document Control and Information Management

[Complete the following information for document control and information management]

Document Control and information management for *Maintenance Services* shall be as identified in Table 1.7.

Table 1.7: Document Control and Information Management

Person responsible for compliance with TxDOT maintenance and inspection of records requirements	*[Insert name of individual or staff position]*
Procedures applicable	*[Insert references to applicable procedures]*
Document management EDMS software system	*[Insert details of software and reference to manuals]*
Person responsible for the storage and retention of Maintenance Records	*[Insert name of individual or staff position]*
[Insert other requirements applicable to document control and information management]	

1.5 Procurement and Subcontractors

Maintenance Services activities including Renewal Work that will be subcontracted are shown in Table 1.8 below.

Table 1.8: Details of Subcontractors Performing Maintenance Services

Name of Subcontractor and start date	Key contact details	Work responsibility

[Add details of each subcontractor within the time periods permitted in the DBA or CMA as applicable.]

1.6 Monitoring and Control of Subcontractors

The following procedure contained in Appendix 13 is designed to ensure all subcontractors' work is adequately monitored and action taken in the event of noncompliance:

- MMP-003 – Quality Control of Subcontractors Activities and Products.

[Include within MMP-003 processes and responsibility for:

(i) Issuing instructions to subcontractors, including consultants and subconsultants

(ii) Ensuring steps taken to ensure subcontractors and suppliers meet the obligations imposed by their respective subcontracts

(iii) Monitoring the work of subcontractors, issuing noncompliance or nonconformance notices and providing feedback

(iv) Ensuring training for employees of Subcontractors.]

1.7 Insurances

The checklist of all required insurances required for the Maintenance Services with dates on which policies were renewed and evidence/dates proof of insurance was provided to TxDOT consistent with the requirements of *Section 3.5 of the CMA General Conditions* (Verification of Coverage and P&P Bonds) are included in Appendix 11. The Payment and Performance Bonds required for the Maintenance Services was provided to TxDOT consistent with the requirements of Section 3.5.1.4 of the CMA General Conditions (Verification of Coverage) are included in Appendix 11.

2. ENVIRONMENTAL COMPLIANCE

2.1 Governmental Approvals and Permits

The required permits for government agencies and third parties as part of the Maintenance Services are included in Appendix 4.

2.2 Hazardous Material Management Plan

The Hazardous Materials Management Plan (HMMP) governs the safe handling, storage, treatment and/or disposal of Hazardous Materials, whether encountered at or brought onto the Project by the DB Contractor, encountered or brought onto the Project by a third party, or otherwise.
The following designated individuals are responsible for management of Hazardous Materials, including development of processes compliant with all applicable Environmental Laws:

[Include names, contact details and applicable certifications and licenses of designated individuals]

The following designated individual is responsible to ensure that:

- All personnel delivering the Maintenance Services who may be expected to handle Hazardous Materials have been trained and certified at least to the minimum requirements established under the guidelines of OSHA 1910.120 (HAZWOPER Training)
- All applicable certifications, licenses, authorizations and Governmental Approvals for DB Contractor personnel handling Hazardous Materials are current and valid.

[Include name, contact details and applicable certifications and licenses of designated individual]

The following procedure in Appendix 13 is part of the HMPP.

- MMP-004 – Hazardous Material Management Plan.

[Transfer the applicable procedures from the PMP to the MMP and include within the HMPP processes and responsibilities for:

(i) Updating safety data sheets, per OSHA requirements, for all chemicals used in connection with the Maintenance Services

(ii) Identification and documentation of potential contaminated sites which might impact Users or the performance of the Maintenance Services

(iii) Mitigation of contamination encountered during the Maintenance Services

(iv) A project-specific spill response plan including the prevention, control, and mitigation of fugitive noxious or toxic vapors or particulate matter (dust), contaminated soil, and contaminated groundwater during disturbance of noxious or hazardous materials and media

(v) Training of personnel for responding to and mitigating Incidents involving contamination or waste including a Hazardous Materials training module and worker training awareness so that workers recognize the potential Hazardous Materials to which they may be exposed

(vi) Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project

(vii) An Investigative Work Plan (IWP) and Site Investigative Report (SIR) in the event that Hazardous Materials are discovered during Maintenance Services

(vii) List of all personal protection equipment available to protect workers from exposure in connection with the Maintenance Services.]

2.3 SW3P Implementation

Maintenance Services will be undertaken in compliance with the TCEQ Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit in accordance with the TxDOT Storm Water Management and Guidelines for Construction Activities Manual.

Refer to the following procedure in Appendix 13:

- MMP-005 Implementation of SW3P After Substantial Completion

[*Transfer only the requirements applicable to Renewal Work of the SW3P from the PMP to the MMP and provide processes and responsibilities for:*
Project-specific decision criteria regarding the types of Maintenance Services for which the SW3P requirements shall be followed (e.g. for any activity disturbing soil.)]

2.4 Spill Prevention and Countermeasures Plan

The following procedure is part of the Spill Prevention and Countermeasures Plan:

- MMP-006: Implementation of Spill Prevention and Countermeasures Plan

[Transfer only the requirements applicable to Renewal Work of the SPCP from the PMP to the MMP and include the following:

(i) State that the goal for Maintenance Services is to have one hundred percent compliance with the requirements of the SW3P and TXR 150000 and zero violation notices.

(ii) Specify minimum increments for internal audits to be conducted of the contractor's compliance with the SPCP to assess whether these goals were achieved through review of environmental documentation

(iii) State the circumstances when the DB Contractor will employ an Environmental Compliance Manager for Maintenance Services (e.g. for any activity that requires permitting)].

2.5 Pollution Prevention Plan (P2), Recycling Plan, and Waste Management

The Pollution Prevention (P2) Plan is prepared in accordance with the Texas Waste Reduction Policy Act. Refer to the following procedures in Appendix 13:

- MMP-007 Implementation of Pollution Prevention Plan
- MMP-008 Implementation of Waste Management
- MMP-009 Implementation of Recycling Plan

[transfer only the requirements applicable to Renewal Work of the Pollution Prevention Plan from the PMP to the MMP and include the following criteria consistent with the Texas Waste Reduction Policy Act:

(i) Large and small quantity generators of hazardous waste

(ii) Toxics Release Inventory (TRI)

(iii) A list of all hazardous wastes and TRI chemicals

(iv) The activities that generate the waste or TRI chemical

(v) An explanation of P2 projects

(vi) An implementation schedule

(vii) The measurable P2 goals

(viii) An employee awareness program (refer here to Section 1.1.3)

(ix) A P2 Plan Executive Summary.]

2.6 Truck Routes, Hazardous Material Routes and related Approvals

2.7 Environmental Compliance and Mitigation Plan

Refer to the following procedures in Appendix 13:

- MMP-010 – Implementation of Environmental Procedures and Training
- MMP-011 – Mitigation Procedures for Impacts to Neighboring Facilities

The Environmental Compliance and Mitigation Plan (ECMP) includes compliance strategies and processes to be employed in accordance with the requirements of applicable Environmental Laws and Environmental Approvals. Maintenance Services will be undertaken in compliance with the ECMP and the Environmental Commitments.

Refer to Section 1.1.3 for education and training requirements for all project personnel.
Refer to Section 9 – Maintenance Quality Management Plan for:

- Conveying a commitment to the Project's environmental quality to all employees;
- Conveying a commitment to zero tolerance for violations; and
- Ensuring that environmental requirements are reflected in maintenance processes.

[Transfer only the requirements applicable to Renewal Work of the ECMP from the PMP to the MMP and include processes and responsibilities for:

(i) Maintaining the Environmental Commitments for all Maintenance Services including Project-specific identification of significant Environmental Commitments that will require monitoring after Substantial Completion

(ii) Verification that any discharge from the Project into a sanitary sewer system complies with appropriate codes and standards of the sanitary sewer owner

(ii) Identification and mitigation of any potential traffic noise caused by Maintenance Services

(iii) Environmental monitoring within the Project area and submittal of all necessary environmental documentation and monitoring reports to the appropriate Governmental Entities and, when applicable, to TxDOT, to the extent necessary to maintain compliance with applicable Environmental Approvals

(iv) Training personnel to avoid or take appropriate action to minimize environmental impacts caused by Maintenance Services.]

3. GOVERNING STANDARDS, MAINTENANCE LIMITS, RENEWAL WORK SCHEDULE AND MAINTENANCE SERVICES SUBMITTAL SCHEDULE

3.1 Maintenance Limits, Layout and Limits of Performance Sections

Schematic Drawings showing the Maintenance Limits and the extents of the Performance Sections are included in Appendix 6, consistent with the requirements *of Section 50.1.3 of the Design-Build Special Specifications* .

[Include processes and responsibilities for:

(i) Periodically validating that the Maintenance Limits are correctly and clearly identified in the field

(ii) Liaison with TxDOT and Governmental Entities at least annually to review the Maintenance Limits, identify any jurisdictional gaps or inefficiencies and recommend solutions]

3.2 Renewal Work Procedure and Renewal Work Schedule

The Renewal Work Schedule is included in Appendix 7 in accordance with *Section 50.7.6.4 of the Design-Build Special Specifications*.

The approach to Renewal Work consistent with Section 50.7.6.4 of the Design-Build Special Specifications is described in the following procedure in Appendix 13.

- MMP-012 – Renewal Work

[Include processes and responsibilities for:

(i) Determining when any element requires Renewal Work

(ii) Updating the Renewal Work Schedule and preparing the Renewal Work Submittal as required]

3.3 Maintenance Services Submittal Schedule

The Maintenance Services Submittal Schedule is included in Appendix 8 in accordance with *Section 50.9 of the Design-Build Special Specification*.

4. COMPLIANCE WITH PERFORMANCE REQUIREMENTS

4.1 Performance and Measurement Tables

Appendix 9 to the MMP contains the most recent approved versions of the Performance and Measurement Tables updated in accordance with *Section 50.3.3 of the Design-Build Special Specifications*.

4.2 Maintenance Management System (MMS)

Refer to the following procedure in Appendix 13:

- MMP-013 – Establishing Maintenance Management System

4.2.1 Software

The software for the MMS is *[Insert the name of the software]*. The individual responsible for maintaining the system and ensuring required access for TxDOT is *[Insert name of individual]*
Appendix 12 includes a link to the MMS software user guide including:

- Customization undertaken in connection with the Project
- Sample reports of the MMS software that provides evidence of compliance with *Section 50.6.6 of the Design-Build Special Specifications*.
- Links to MMS training including a record of the most recent MMS demonstration provided to TxDOT.

4.2.2 Software Updates and Lifetime Compatibility with TxDOT's MMS

Version *[..]* of the software will be initially used. Software updates will be noted under this section and update details will be available at the software's manual in Appendix 12.
The MMS software is fully compatible with TxDOT's MMS as demonstrated at the software's manual (pages *[..]*) and at the data transferability process and reports that can be found in Appendix 12.

4.2.3 Documentation and Forms

Documentation and Forms needed to verify and enter the field gathered data to the MMS software can be found in Appendix 12.

4.3 Defects and Inspections

Refer to the following procedures in Appendix 13:

- MMP-014 – Defect Categorization and Repair
- MMP-015 – Maintenance Inspection Plan
- MMP-016 – Maintenance Repair Submittal Plan

[Include within the above processes and responsibilities for:

(i) Training of responsible personnel to identify and to categorize Defects discovered during inspection. This shall include training specific to the identification and recording of Category 1 Defects.

(ii) Tracking and reporting of Defects including fault detection logs, software output

(iii) Generation of corrective action work orders through the MMS including how backlog of corrective maintenance and repair activities will be populated and monitored in the MMS

(iv) Action by Defect category type, to include a description of how the actions are carried out stating the responsible individuals and the processes for specific Defect types with examples

(v) How Defects will be remedied, with examples provided for all common Defects, stating necessary notification and the individuals to be notified for such Defect remedy.

(vi) Documentation including how Defects will be entered, updated and closed in the Maintenance Management System.

(vii) Verification of the satisfactory completion of Maintenance Services and restoration of asset condition

(viii) Discovery of maintenance trends to determine the need for adjustments in the weekly, monthly and annual maintenance plan to address changing project conditions

(ix) Inspection and testing of Project items and the identification and classification of Defects and inspection failures.

(x) Monitoring instrumentation according to applicable specification

(xi) Field inspections of completed Maintenance Services and for preparing daily reports to document all inspections performed

(xii) Identification of inspection agencies and organizations, including information on each agency's capability to provide the specific services required, certifications held, and equipment

(xiv) Hazard mitigation for any Category 1 Defect in a Maintained Element of which the DB Contractor is aware through its own inspections, from a third party or through notification by TxDOT

(xv) Proposal to TxDOT of a repair method for any Defect]

4.4 Tracking and Reporting Noncompliance Events

Refer to the following procedure in Appendix 13 for Noncompliance Events:

- MMP-017 – Tracking and Reporting Noncompliance Events

[Include within the above processes and responsibilities for:

(i) Meeting self-reporting obligations

(ii) Identification of the start date of each Noncompliance Event

(iii) Accurate assessment and reporting of the date of cure

(iv) Proper use of the Noncompliance Events database and integration with the MMS.

(v) Validation of the data, times, dates and other information entered into the Noncompliance Event database described in CMA Exhibit 10 including frequency of checks / audits]

5. MAINTENANCE SAFETY PLAN

Refer to the following procedure in Appendix 13:

- MMP-018 – Implementation of Safety Plan

The Maintenance Safety Plan describes the DB Contractor's policies, plans, training programs, and work site controls to ensure the health and safety of personnel involved in the Project and the general public affected by the Project during the Maintenance Period. The Maintenance Safety Plan is designed to preserve the safety of Users, adjacent communities, transportation workers and Emergency Services. Coordination with applicable Traffic Management Centers (TMCs) will occur as described in Section 1.2 of the MMP.

The Maintenance Safety Manager complying with the requirements of *Section 50.2.3.3 of the Design-Build Special Specifications* is *[Insert name and contact details].*

[Develop the plan based on the requirements of Section 5.1.3 of the CMA General Conditions and tailored specifically to meet the Project's Maintenance Services requirements. Include within the Maintenance Safety Plan processes and responsibilities for:

- *(i) Transition from safety of Maintenance Work before Substantial Completion to safety of Maintenance Services after Substantial Completion in order to provide continuity and apply lessons learned*
- *(iii) The individual assigned during each shift during the Maintenance Services assigned to ensure compliance with the Maintenance Safety Plan*
- *(iv) Project-specific amendments for any Renewal Work not covered by the existing plan*
- *(v) Notification and recording of safety incidents associated with Maintenance Services including the location, number of vehicles involved, severity of incident, number of lanes affected, and duration of any associated Lane Closure.]*

6. TRAFFIC MANAGEMENT PLAN

Refer to the following procedure in Appendix 13:

- MMP-019 –Traffic Collection and Reporting

6.1 Descriptions, Qualifications, Duties and Responsibilities of Traffic Personnel

The qualifications and duties of the traffic engineering manager, traffic control coordinator, traffic safety officer, and other personnel with traffic control responsibilities are shown in Table 7.1.

Table 7.1: Qualifications and Duties of Traffic Personnel for Maintenance Services

Traffic Personnel Title	Required Qualifications	Description of Duties

Refer to Chapter 1 of the MMP for Personnel Training and Certification of patrol staff in health and safety, traffic control, incident management, and identification of Defects.

6.2 Processes for Lane Closures and Traffic Control Plans

[Transfer applicable procedures from the PMP and include within the MMP processes and responsibilities for:

(i) Obtaining acceptance of detours, road and Lane Closures and other traffic pattern modifications from applicable Governmental Entities, and implementing, maintaining and removing those modifications

(ii) Obtaining approval of Lane Closure and traffic control plan from TxDOT;

(iii) Installation, maintenance and removal of interim signing and the corresponding handling of permanent signing during maintenance work

(iv) Installation, maintenance, replacement and removal of traffic control devices, including pavement markings and traffic barriers, if used

(v) Safe ingress and egress of construction vehicles in the work zone;

(vi) Continuous access to established truck routes and Hazardous Material (HazMat) routes, and to provide suitable detour routes, including obtaining any approvals required by the appropriate Governmental Entities for these uses. (Refer to Section 3.1 Hazardous Material Management Plan of the MMP)

(vii) Comprehensive traffic control strategy to be implemented at the work site including an evaluation of the work operation, traffic conditions, safe ingress and egress of construction vehicles

(viii) Modification of plans as needed to adapt to changing Project circumstances;

(ix) Communication of TMP information to DB Contractor's public information personnel and notify the public of maintenance of traffic issues; and

(x) Contingency plan of how traffic congestion can be alleviated.]

Refer to Exhibit 15-1 of the CMA for Traffic Control Plan requirements during the Maintenance Period.

Refer to the following procedure in Appendix 13:

- MMP-020 – Lane Closures and Traffic Control

6.3 Public Information and Communications Plan

Refer to the following procedure in Appendix 13:

- MMP-021 – Implementation of Public Information and Communications Plan

[Transfer applicable procedures from the PMP and include within the MMP processes and responsibilities for public information and communications necessary for performance of Maintenance Services. This section may cross reference to the Traffic Management Plan if this contains the necessary processes.]

7. TRANSITION PLAN

7.1 Maintenance Transition Plan

The Maintenance Transition Plan complies with *Section 50.7.10 of the Design-Build Special Specifications* and is designed to coordinate the identification of Maintenance Transition punch list items required to be completed prior to maintenance transfer at the end of the Maintenance Term.

Refer to the following procedure in Appendix 13:

- MMP-022 – Implementation of Transition Plan

[Include within the MMP processes and responsibilities for:

(i) Training TxDOT employees to have a complete understanding of the infrastructure and the maintenance activities required to maintain adequate performance of highway facility.]

8. MAINTENANCE QUALITY MANAGEMENT PLAN

8.1 Quality Management Organization

The Maintenance Work /Maintenance Quality Management Plan (MQMP) complies with *Section 50.2.2 of the Design-Build Special Specifications*. As shown on Figure 9.1, TxDOT's Quality Assurance Program (QAP) encompasses design, construction and maintenance throughout all phases of delivery.

Figure 9.1: Overview of TxDOT's Quality Assurance Program including Maintenance

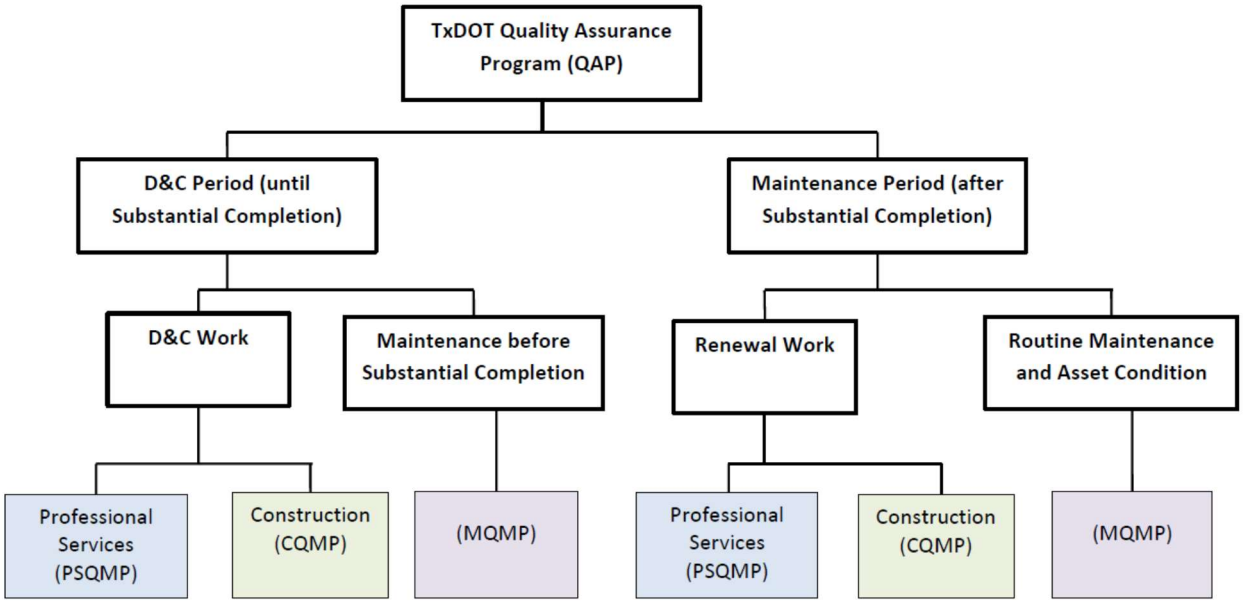

Table 9.1 below shows the maintenance quality management organization and staffing plan showing the period of time that each quality management staff member will be present on the site and the resumes of the Key Personnel.

Table 9.1 Maintenance Quality Management Organization

Name of Person within Maintenance Quality Organization	Start date and period required	Percentage of time allocated to Project	Required experience and qualifications

An organizational chart identifying all quality management personnel, their roles, authorities and line reporting relationships and resumes for all quality management personnel is included in Appendix 16.

A description of the roles and responsibilities of all quality management personnel and those who have the authority to stop activities is included in Appendix 16.

A list of testing agencies, including information on each agency's capability to provide the specific services required for the activities, certifications held, equipment, and location of laboratories is included in Appendix 16.

8.2 Quality Policies

The quality policies and objectives that DB Contractor shall implement throughout its organization are included in Appendix 16. The policies shall demonstrate the DB Contractor senior management's commitment to implement and continually improve the maintenance quality system.

8.3 MQMP Processes

Processes in the MQMP are developed in accordance with the following:

- Objectives, targets and responsibilities are: consistent with TxDOT's Quality Policy and QAP requirements; assigned for each organizational level within DB Contractor organization; clear, specific, measurable and achievable; and a *[Insert name of individual]* is responsible for the measurement and analysis of their achievement.
- Sources of information used to identify opportunities for continuous improvement include: records available on systems such as MMS; customer complaints database; Noncompliance Events database; level of satisfaction of Users; and evidence of lack of effectiveness of existing processes.

Refer to the following procedures in Appendix 13 for the MQMP:

- MQMP-001 – Performance Requirements Compliance
- MQMP-002 – Verification of Records
- MQMP-003 – Records for TxDOT Review

[Include within the MQMP processes and responsibilities for:

(i) How DB Contractor will meet the Performance Requirements, including the necessary inspection procedures and frequencies to ensure compliance with Targets and the achievement of Defect Remedy Period to mitigate hazards, permanently remedy, and permanently repair Defects.

(ii) Inspection and test plans, including the timing and frequency of testing

(iii) Control of quality records

(iv) Validation of the accuracy of Maintenance Records

(v) Management reviews

(vi) Measurement of customer satisfaction

(vii) Control of nonconforming products and services

(viii) Validation of the data, times, dates and other information entered into the Maintenance Management System for Noncompliance Events

(ix) Verification of DB Contractor's compliance with the Performance Requirements including frequency of checks / audits

(x) Accuracy of all Maintenance Records including frequency of checks / audits

(xi) Making all quality records immediately available to TxDOT for review]

The person responsible for updating the MMP is *[Insert the name of the position]*. The TxDOT individuals that will need to be consulted with changes from the PMP to the MMP are *[Insert names of individuals]*.

Refer to the following procedure in Appendix 13:

- MMP-023 – Updating the MMP Plan

APPENDIX 1: STAFF REQUIREMENTS TABLE

[Insert personnel details for Maintenance Services]

Key personnel or other personnel position	Number of employees in category	Dates required in connection with Project	% of time to be allocated to Project	Corresponding TxDOT person

APPENDIX 2: STAFF NAMES CONTACT DETAILS AND QUALIFICATIONS

[Insert contact details, qualifications and training record for Maintenance Services]

Key Personnel or other personnel position	Staff name and start date	Contact details	Education, qualifications and experience	Link to training record in connection with Project
			[Insert details or link to resume]	

APPENDIX 3: CONTACT DETAILS FOR TXDOT AND THIRD PARTIES

[Insert contact details for Maintenance Services]

Organization	Contact name, e-mail and address	Business Phone
TxDOT *[List all TxDOT contacts in connection with Project]*		
Governmental Entities *[list all Governmental Entities]*		
Traffic Management Centers (TMC)		
Utilities *[list all utilities]*		
[Other third parties]		

APPENDIX 4: PERMITS FOR GOVERNMENT AGENCIES AND THIRD PARTIES

Permit Name	Agency/Reason for Permit	Description of Permit	Date of expiry / revision

[List all Permits Required in connection with Project]			

APPENDIX 5: [NOT USED]

APPENDIX 6: MAINTENANCE LIMITS AND LIMITS OF PERFORMANCE SECTIONS

[Include Schematic drawings that show the Maintenance Limits and the limits of the Performance Sections in accordance with Section 50.1.3 of the Design-Build Special Specifications]

APPENDIX 7: RENEWAL WORK SUBMITTAL

[Include the Renewal Work Submittal (including Renewal Work Schedule)]

APPENDIX 8: MAINTENANCE SERVICES SUBMITTAL SCHEDULE

[Include Maintenance Services Submittal Schedule]

APPENDIX 9: PERFORMANCE AND MEASUREMENT TABLES

[Insert the latest version of the Performance and Measurement Tables]

APPENDIX 10: MAINTENANCE FACILITY LOCATION

[Insert a map showing the location of the Maintenance Facility]

APPENDIX 11: INSURANCE VERIFICATION AND P&P BONDS

[Provide verification of insurance coverage in accordance with Section 3.5 of the CMA General Conditions]

[Provide Payment and Performance Bonds required for the Maintenance Services in accordance with Section 3.4 of the CMA General Conditions]

APPENDIX 12: MAINTENANCE MANAGEMENT SYSTEM DETAILS

[Insert the required details of the MMS]

APPENDIX 13: MMP PROCEDURES

MMP Mandatory procedures are shown below. *[Add additional procedures as necessary and provide cross references to the applicable section of the MMP]*

MMP Procedure Number	MMP Procedure Name	MMP Section Reference
MMP-001	Submittals and Coordination with TxDOT, Other Agencies and Third Parties	1.2.1, 1.2.2
MMP-002	Agency Coordination for Oversize Loads	1.2.1.2
MMP-003	Quality Control of Subcontractors Activities and Products	1.6
MMP-004	Hazardous Materials Management Plan	2.2
MMP-005	Implementation of SW3P after Substantial Completion	2.3
MMP-006	Implementation of Spill Prevention and Countermeasures Plan	2.4
MMP-007	Implementation of Pollution Prevention Plan	2.5
MMP-008	Implementation of Waste Management	2.5
MMP-009	Implementation of Recycling Plan	2.5
MMP-010	Implementation of Environmental Procedures and Training	2.7
MMP-011	Mitigation Procedures for Impacts to Neighboring Facilities	2.7
MMP-012	Renewal Work	3.3
MMP-013	Establishing Maintenance Management System	4.2
MMP-014	Defect Categorization and Repair	4.3
MMP-015	Maintenance Inspection Plan	4.3
MMP-016	Maintenance Repair Submittal Plan	4.3
MMP-017	Tracking and Reporting Noncompliance Events	4.4
MMP-018	Implementation of Safety Plan	5
MMP-019	Traffic Collection and Reporting	6
MMP-020	Lane Closures and Traffic Control	6.2
MMP-021	Implementation of Public Information and Communications Plan	6.3
MMP-022	Implementation of Transition Plan	7
MMP-023	Updating MMP Plan	8.3
MQMP-001	Performance Requirements Compliance	8.3
MQMP-002	Verification of Records	8.3
MQMP-003	Records for TxDOT Review	8.3

APPENDIX 14: TEMPLATE FOR TYPICAL PROCEDURE

1. PURPOSE AND NEED

[List the reason for the procedure's implementation.]

1.1 Methodologies

[List the methodologies to be defined as part of the procedure.]

2. SCOPE

[Define the limits of the procedure. Define individuals or workgroups to whom the procedure applies.]

3. DEFINED TERMS

- *[List the terms defined as part of the procedure]*

4. STEPS IN PROCEDURE

[Describe the procedure, in detail. List all steps. Assign individual responsibility for implementing the procedure]

[Include tables, flowcharts and figures as applicable.]

5. DOCUMENT CONTROL

[List the methods by which the procedure will be documented and archived. Define the location at which the procedure's records will be filed.]

REFERENCES

[Reference applicable documents within the contract with specific section and page locations.]

Approved By:

_____ _____

FirstName LastName
Maintenance Manager (MM) **Date**

_____ _____

FirstName LastName
Procedure Owner **Date**

RECORD OF REVISIONS

Rev.	Date Issued	Pages Affected	Comments
0	*XX/XX/XXXX*	*All*	*Initial Issue*
1	*XX/XX/XXXX*	*XX-XX*	*Add brief comment regarding revision*

APPENDIX 15: FORMS FOR MAINTENANCE PROCEDURES

[Where maintenance procedures listed in Appendix 13 require separate forms, include on table below. The form number shall directly relate to the procedure number. Change and complete as needed and provide references to Section of the MMP.]

MMP Form Number	MMP Form Name
	Trip Inspection Form
	Equipment Inspection Form
	Purchase Order Form
	Daily Roadway Inspection Form
	Monthly Roadway Inspection Form
	Lighting Inspection form
	Repair Log for Inspections
	Incident Report Form
	Incident Call Log
	Training Attendance Form
	[Add additional forms as required]

APPENDIX 16: QUALITY POLICIES AND PROCEDURES

[Insert here the quality policies and procedures applicable to the Maintenance Services]

Texas Department of Transportation

CMA SPECIFICATIONS

Item 9

Attachment 9-3

Function Codes, Descriptions and Allocations of Responsibility

January 2, 2019

ATTACHMENT 9-3: FUNCTION CODES, DESCRIPTIONS AND ALLOCATION OF RESPONSIBILITY

			RESPONSIBILITY		
CODE	TITLE	MAINTENANCE ACTIVITY	DB CONTRACTOR	TxDOT/THIRD PARTY	ALLOCATION OF RESPONSIBILITY NOTES
BASE AND SUBGRADE (TRAVEL LANE AND SHOULDERS)					
110+	Base Removal and Replacement (UM = CY)	The removal of base and/or subgrade materials from distressed or failed areas and replacement with suitable material. (Includes resurfacing.)	X		
120+	In Place Repair (UM = CY)	In place repair of existing base and/or subgrade material (Includes resurfacing, may or may not include additional stabilizing material).	X		
135+	Install and/or Maintain Under-drains (UM=EA)	Installation, repair and maintenance of all types of under-drains.	X		
145+	Unpaved Road Maintenance (UM = SY)	Repair of gravel or dirt roads, including blading, addition of base, etc.	X		
ASPHALTIC SURFACES (Travel Lane and Shoulders)					
211+	Leveling or Overlay with Laydown Machine (UM = SY)	The application of asphaltic tack coat and placing asphaltic concrete material to improve the ride qualities or level up low spots.	X		
212+	Leveling or Overlay with Maintainer (UM = SY)	The application of asphaltic tack coat and placing layers of asphaltic concrete material	X		
213+	Leveling by Hand (UM = SY)	The application of asphaltic tack coat and placing layers of asphaltic concrete material. This includes repair of pavement areas greater than one square yard.	X		
214+	Leveling or Overlay with Dragbox (UM=SY)	The application of asphaltic tack coat and placing layers of asphaltic concrete material.	X		
225+	Sealing Cracks (UM = LM)	Cleaning, filling and sealing cracks in the pavement using asphaltic rubber or other sealants.	X		
231+	Seal Coat (UM = SY)	Application of a single layer of asphaltic material followed by the application of a single layer of aggregate over the full width of the travel lane or shoulder (greater than 6' in width) for a minimum of 1000 continuous feet.	X		
232+	Strip or Spot Seal Coat (UM = SY)	Application of a single layer of asphaltic material followed by the application of a single layer of aggregate over areas that are not full width of the travel lane or shoulder (6' or less in width), or the full width of the lane or shoulder but less than 1000 feet in length.	X		
233+	Fog Seal (UM = SY)	Retain aggregate, enliven surface and/or seal hairline cracks by the application of a thin layer of asphaltic material.	X		
235+	Microsurfacing (UM = SY)	The application of a polymer modified high performance emulsion coupled with fine graded aggregate, mineral fillers and special additives in a slurry, to fill ruts or to provide a new wearing surface. (Caution: Should not be used to seal cracked pavements.)	X		
241+	Pothole Repair (UM = EA)	The repair of holes with a area less than or equal to one square yard. Charge to Function 213 if greater than one square yard.	X		
245+	Adding or Widening Pavement (UM = SY)	Widening travel lanes up to two (2) feet or adding shoulders up to four (4) feet to correct a maintenance problem (includes subgrade, base and surfacing, or adding turn lanes to improve safety).	X		This activity is a DB Contractor responsibility only where widening is needed to correct a maintenance problem.
252+	Milling or Planing (UM = SY)	The removal of the pavement surface by planing or milling.	X		
253+	Spot Milling (UM=SY)	The removal of pavement surface by milling using a small milling machine (drum width is 4 feet or less).	X		
265+	Treat Bleeding Pavement (UM = SY)		X		
270+	Edge Repair (UM = LF)		X		
CONCRETE PAVEMENT (Travel Lanes and Shoulders)					
315	Slab Stabilization/Jacking (UM=SY)	Leveling concrete pavement through the use of hydraulically placed material.	X		
325+	Cleaning and Sealing Joints and Cracks (UM = LF)	Cleaning, filling and sealing of joints in concrete pavement.	X		
330	Blowouts and Stress Relief (UM=SY)	Repair of blowouts and cutting pavement for stress relief.	X		
345+	Repair Spalling (UM = SY)	Clean and fill spalled areas (not full depth of concrete slab).	X		
360+	Full Depth Removal and Replacement (UM = SY)	The removal and replacement of failed areas for the full depth of the concrete slab.	X		

ATTACHMENT 9-3: FUNCTION CODES, DESCRIPTIONS AND ALLOCATION OF RESPONSIBILITY

			RESPONSIBILITY		
CODE	TITLE	MAINTENANCE ACTIVITY	DB CONTRACTOR	TxDOT/THIRD PARTY	ALLOCATION OF RESPONSIBILITY NOTES
APPROACHES AND MISCELLANEOUS SHOULDER MAINTENANCE					
455+	Reshaping unpaved shoulders. (UM = LF)	Restore sod or flexible base shoulders to original sections. Includes reshaping frontslope to eliminate low pavement edges along a paved shoulder.	X		
480+	Side Road Approaches, Crossover and Turnouts (UM = SY)	The installation or maintenance of side road approaches, crossovers, historical markers, mailbox and litter barrel turnouts, etc.	X		
488+	Concrete Appurtenance Installation and Maintenance (UM=SY)	The maintenance, installation, or removal of concrete appurtenances which include curbs and/or gutters, raised medians, sidewalks and sound barriers.	X	X	DB Contractor responsible only for work associated with renewal, replacement, or repair of drainage elements.
495+	Parking Area Maintenance (UM = SY)	Repair of subgrade, base or surface of areas including parking lots, park and ride lots and camping pads.	N/A		
ROADSIDE AND OTHER					
511+	Mowing (UM = AC)	Mowing of the right-of-way		X	
513+	Spot Mowing (UM = HR)	Spot mowing of the right-of-way.		X	
520+	Illegal Dumpsite Removal and Disposal (UM=CY)	Removal and disposal of debris discarded or deposited in an unauthorized area in the right of way, such as under a bridge, overpass, culvert, etc.	X	X	Note DB Contractor is responsible for removal of all debris in drainage systems and culverts.
521+	Litter (UM = AC)	Removal and disposal of litter from the entire right-of-way, excluding paved areas, picnic and rest areas.		X	
522+	Street Sweeping (UM = MI)	Routine street sweeping. Units are the actual miles swept regardless of the centerline miles.		X	
523+	Debris (UM=MI)	Routine patrolling to remove and dispose of debris, including dead animals.		X	
524+	Spot Litter (UM = AC)	Spot removal and disposal of litter, including dead animals, from the right-of-way.		X	
525	Adopt-A-Highway (UM = HR)	Installation of posts and signs, materials furnished to groups, personnel and equipment used to assist in removal and disposal of collected litter.		X	
527	Hand Sweeping (UM=SY)	Hand sweeping of riprap, islands, medians, curb & gutter, bullpens, driveways, etc.		X	
530+	Removal of Graffiti (UM= SF)	Removal of graffiti from fixtures, wingwalls, bridge structures, etc. Not to be used in lieu of Function 733, Maintain Vandalized Signs, Function 731 or 732, Sign Maintenance		X	
531+	Picnic Area Maintenance (Without Restrooms) (UM = HR)	Work performed in maintaining picnic areas, including mowing, litter pickup, emptying litter barrels, paved areas, maintenance of plantings, graffiti removal, etc.		X	
532+	Rest Area Facility Maintenance (UM = HR)	Work performed in janitorial and grounds maintenance, including mowing, litter pickup, emptying litter barrels, maintenance of plantings, cleaning restrooms, cleaning arbors, graffiti removal, minor painting, etc. This item shall also include special maintenance required to repair buildings, repair/replace arbors, picnic tables, fixtures, litter barrels, paved areas, etc. (including maintenance of treatment plants and dump stations).		X	
533+	Rest Area Facility Maintenance through Regional Contracts (UM = HR)	(Maintenance Division Use Only)		X	
535	Maintenance of Specialty Facilities (UM = HR)	All maintenance costs to speciality facilities including border safety inspection facilities (BSIFs), toll booths, service plazas, fences and associated appurtenances. The highway class code will determine the type of facility.		X	
536	Toll Road System Operations	All operating costs for all system toll roads. Maintenance costs should be charged to the appropriate segment 78 function.		X	
538	Pest Control (UM=AC)	Activities related to the use of predatory animal and insect control whether in turf and ornamental sites or on the ROW.		X	
540	Hand Vegetation Control (UM = HR)	Hand cleaning vegetation out of islands, medians, riprap, drainage channels, etc. by chemical, manual or mechanical means.	X	X	DB Contractor responsible for vegetation control related to all drainage elements.
541+	Chemical Vegetation Control, Edges (UM = AC)	Complete control of vegetation encroaching in pavement edges, shoulders, medians, islands and curbs with herbicides.		X	
542+	Chemical Vegetation Control, Overspray (UM = AC)	Control of undesirable vegetation growth by overspraying the right-of-way including fixtures (i.e. signs, delineator, guardrails, culverts, etc) with herbicides.		X	
544+	Chemical Vegetation Control, Ropewick (UM = AC)	Control of tall vegetation (i.e. Johnson grass) in the right of way with wick applicator.		X	
545	Chemical Vegetation Control, Basal Application (UM = HR)	Control of undesirable brush species in the right of way with a low volume basal bark application.		X	
548+	Seeding, Sodding, Hydromulching and Blanketing (UM = SY)	Seeding, sodding, hydromulching and/or placing soil retention blankets.	X	X	DB Contractor responsible if reason for activity is failure of Maintained Element
551	Landscaping (UM=AC)	The installation or maintenance of landscape plantings and their facilities including planter walls, border, sprinkler systems, etc. (excluding picnic and rest areas).		X	
552	Tree and Brush Control (UM=CL)	The trimming, pruning and disposal of shrubs, vines, and trees (excluding picnic and rest areas).		X	

ATTACHMENT 9-3: FUNCTION CODES, DESCRIPTIONS AND ALLOCATION OF RESPONSIBILITY

			RESPONSIBILITY		
CODE	TITLE	MAINTENANCE ACTIVITY	DB CONTRACTOR	TxDOT/THIRD PARTY	ALLOCATION OF RESPONSIBILITY NOTES
558	Storm Water Pollution Protection (UM=LF)	Maintenance or Installation of storm water pollution protection plan (SW3P) in accordance with EPA regulation on projects designated by Area Engineers	X		
560+	Riprap Installation and Maintenance (UM=SY)	Installation and maintenance of ditch liners, retards, down drains, riprap, flumes, concrete mowing strips, gabions, retaining walls and other erosion protection.	X		
561+	Ditch Maintenance (UM = CY)	Removal and hauling of silt, drift and/or filling eroded areas. Not to be used for work at culverts or bridges. (See Functions 570 and 620.)	X		
562+	Reshaping Ditches (UM = LF)	Reshaping ditches using maintainer and/or gradall, etc. Not to be used for work at culverts and bridges. (See Functions 570 and 620.)	X		
563+	Slope Repair/Stabilization (UM = SY)	Slope repair and/or stabilization. Not to be used for work at culverts and bridges. (See Functions 570 or 620)	X		
570	Culvert and Storm Drain Maintenance (UM=EA)	The repair and maintenance of culverts up to bridge classification (twenty feet measured along centerline of roadway). This work includes silt and debris removal from inlet, storm drains, retention ponds and culverts (except those costs associated with Function 571).	X		
571	Storm Water Pump Station Maintenance (UM=EA)	Repair and maintenance of motors, pumps, generators, wet wells, dry wells, debris screening baskets, buildings, etc., including costs of utility services.	X		
580+	Removal of Illegal Signs on ROW (Temporary, no special handling required.) (UM =EA)	Removal of illegal signs on right-of-way, including disposal and written notices to owners.		X	
581+	Removal of Illegal Signs on ROW (Permanent, special handling required.) (UM = EA)	Removal of illegal signs on right-of-way, including disposal and written notices to owners.		X	
582	Removal of Encroachments, Other than Signs (UM = HR)	Removal of illegal encroachments (other than signs) on the ROW, including disposal and written notice to owners.		X	
585+	Driveway Installation / Removal and Maintenance (UM = SY)	See access management policy		X	
591	Utilities and Driveway Inspection (UM = HR)			X	
593+	Cable Median Barrier (UM=LF)	Installation and maintenance of high tension cable median barrier systems, including the cable, posts and other end treatments.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
594+	Concrete Barrier (UM = LF)	Installation, removal and maintenance of concrete barrier, including attached headlight barrier fence.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
595+	Guard Fence (UM = LF)	Installation and maintenance of guard fence, M.B.G.F. turn down ends, median barrier and attached headlight barrier fence, including posts, metal beams, etc. (End treatment other than turn down ends see Function 596)	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
596+	Guardrail End Treatment Systems (UM=EA)	Installation and maintenance of guardrail end treatments systems. (For attenuators other than GETS, see function 725)		X	
597+	Mailboxes, Installation and Maintenance (UM = EA)			X	
598	Boat Ramp Maintenance (UM = HR)	Work performed in maintaining boat ramps including mowing, litter pick, emptying litter barrels, maintenance of paved and unpaved areas, etc.		X	
BRIDGES AND BRIDGE CHANNELS					
610+	Bridges, Movable Span (UM = HR)	Operation, routine maintenance and inspection of movable span bridges, (Swing barge, lift or turn). Restricted use: Beaumont, Houston, Pharr, and Yoakum District only.	X		
611+	Bridges, Portable (UM=HR)	Installation, removal, maintenance and inspection of portable bridges.	X		
620+	Bridge Channel Maintenance (UM=CY)	Removing of silt and drift, filling eroded areas, maintenance and repair of fenders, jetties, dikes, riprap and channel maintenance (including easements) except under bridges.	X		DB Contractor responsible for the entire bridge channel maintenance.
628+	Bridges, Rail (UM = LF)	Maintenance of bridge rail, posts and post connections to deck, including painting.	X		
645+	Bridges, Joint Maintenance (UM =LF)	Repair of bridge joints including cleaning and sealing.	X		
646+	Bridges, Joint Replacement (UM =LF)	Replacement of bridge joints.	X		
650+	Bridges, Deck (UM = SF)	Repair to bridge decks.	X		
660+	Bridges, Superstructure, Concrete (UM=SF)	Routine maintenance of concrete components of the bridge superstructure.	X		
665+	Bridges, Superstructure, Steel (UM=SF)	Routine maintenance of the steel components of the bridge superstructure, including bearings, concrete diapraghm and beams	X		
670+	Bridges, Substructure, Concrete (UM=SF)	Routine maintenance of the concrete components of the bridge substructure including caps, columns, abutments, wingwalls, piling, etc.	X		
675+	Bridges, Substructure, Steel and Timber (UM=SF)	Routine maintenance of the steel or timber components of the bridge substructure including caps, abutments, pile extensions, etc.	X		
680+	Bridges, Painting (UM=SF)	Cleaning and painting of steel superstructure or steel substructure.	X		
690+	Bridges, Mechanical and Electrical (UM = HR)	Maintenance and repair of the electrical and mechanical components of a bridge	X		

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			RESPONSIBILITY		
CODE	TITLE	MAINTENANCE ACTIVITY	DB CONTRACTOR	TxDOT/THIRD PARTY	ALLOCATION OF RESPONSIBILITY NOTES
695+	Fender Systems (UM=HR)	Installation and maintenance of fender systems.	X		
TRAFFIC OPERATIONS					
711+	Paint and Bead Striping (UM=LF)	Striping or re-striping lane lines, center lines and edge lines using paint and beads.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
712+	High Performance Striping (UM=LF)	Striping or re-striping lanes lines, centerlines and edge lines using thermoplastic or other high performance materials.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
713	Specialty Markings (UM=EA)	Medians, islands and other pavement markings not covered under functions 711 or 712. (Including make-ready operations for all stripe alignment, such as spotting, tabs, temporary tape, etc.)	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
715	Removing Pavement Striping (UM=LF)	Function 715 should be used for all activities associated with the removal or obliteration of pavement stripes when the stripe is not going to be replaced. Work items could include grinding, burning, scraping or covering existing pavement stripes by applying an asphaltic material.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
716	Performance-Based Contract Distribution (UM=LM)	These contracts are set up to pay the contractor a fixed price on a periodic basis regardless of the type of work performed and/or the amount of work performed.		N/A	
721+	Delineators (UM = EA)	Installation, maintenance and/or replacement of damaged or missing delineators and/or posts. This function shall include straightening of posts. Measured by each post and each reflector replaced.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
724	Roadway Access Control (UM=LF)	Installation and maintenance of barriers other than those covered by Functions 594 and 595, designed to control access on highways, including post and cable fences, ROW fences and cattle guards.		X	
725	Vehicle Attenuators (UM=EA)	Installation and maintenance of vehicle attenuator, crash cushions, etc. (Includes end treatment devices on guard fence).		X	
731+	Install or Reinstall Small Signs (UM=EA)	The installation of signs (less than 4' x 4'). Includes the installation of an old sign on a new post or the installation of a new sign on an existing post. Not to be used in lieu of Function 733, Maintain Vandalized Signs, Installation of Large Signs Function 732, or Adopt-A-Highway Function 525.		X	
732+	Install or Reinstall Large Signs (UM=EA)	The installation of signs (equal to or greater than 4' x 4'). Includes the installation of an old sign on a new post or the installation of a new sign on an existing post. Not to be used in lieu of Function 733, Maintain Vandalized Signs, Installation of Small Signs Function 731, or Adopt-A-Highway Function 525.	X	X	DB Contractor responsible for Maintenance Services associated with sign gantries in accordance with Performance and Measurement Table Item 3.4.
733+	Vandalized Signs (UM = EA)	Replacement or repair of signs damaged by vandalism.		X	
738	Installation and Maintenance of Flashing Beacons (UM=EA)	Installation and maintenance of overhead flashing beacons, pedestal or sign mounted flashing beacons, etc.		X	
742	Illumination (UM=EA)	Installation, maintenance and operation of illumination systems including continuous lighting, safety lighting, and sign illumination	X	X	DB Contractor responsible for Maintenance Services associated with high masts in accordance with Performance and Measurement Table Item 3.4.
743	Installation and Maintenance of Isolated Traffic Signals (UM=EA)	Maintenance and operation of isolated traffic signals, diamond interchange signals, etc.	X	X	DB Contractor responsible for Maintenance Services associated with signal gantries in accordance with Performance and Measurement Table Item 3.4.
745	Traffic Management System (UM=CM)	Maintenance and operation of traffic management systems on freeways or non-freeways, entrance/exit ramps, motorist information (e.g. changeable message signs, highway advisory radio, etc.), surveillance and related communications equipment. (ITS Control Center personnel should charge to Segment 70, Detail 0570).		X	
750+	Installation & Removal of Pavement Markers (UM=EA)	Installation and/or removal of traffic buttons or reflective pavement markers.	X	X	DB Contractor responsible only for work associated with Asphaltic and Concrete Pavement renewal maintenance activities.
790	Miscellaneous Traffic Services (UM = HR)	All traffic surveys (including all motor vehicle and pedestrian counts at intersections) and directly related locations and other traffic services not covered elsewhere.		X	
799	Traffic Control Plan (UM = HR)	The placement, maintenance and removal of barricades, signs, cones, lights and other such devices needed to handle traffic during the maintenance operation.	X	X	TxDOT or applicable Governmental Entity responsible for traffic control only for Non-maintained Elements.
EXTRAORDINARY MAINTENANCE					
811	Assistance to Traffic (Snow and Ice) (UM = HR)	Provide assistance to traffic caused by snow and ice conditions on all highways. (includes sanding, deicing, clearing, removal, etc.)	X	X	DB Contractor to provide Snow and Ice assistance and Clean Up services in accordance with Snow and Ice Clean-up Plan.
830	Hazardous Material Cleanup, Spill or Leaking Storage Tanks (UM = HR)	Investigation, testing, cleanup, removal, disposal, and restoration work associated with a spill or leaking storage tank.	X	X	

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			RESPONSIBILITY		
CODE	TITLE	MAINTENANCE ACTIVITY	DB CONTRACTOR	TxDOT/THIRD PARTY	ALLOCATION OF RESPONSIBILITY NOTES
831	Hazardous Material Cleanup (Abandoned Materials) (UM = HR)	Investigation, testing, cleanup, removal, disposal, and restoration work associated with abandoned hazardous materials of unknown ownership.	X	X	