

## EXHIBIT 2

### MAINTENANCE SPECIFICATION

#### **0100 General Maintenance Obligations**

Throughout the Maintenance Term, Maintenance Contractor shall be responsible for and shall carry out Maintenance Services for the Maintenance Elements identified in Attachment 2 within the “Existing ROW / Maintenance Limits” as shown in Attachment 3 as modified by the Released for Construction Documents as defined in Exhibit 1 to the Design-Build Agreement, as set forth in this Exhibit 2 and the COMA Documents. For clarity, Maintenance Contractor shall not be responsible for Maintenance Services for the Non-Maintained Elements except as provided in Sections 3.1.1.9 and 10.10.1(b) of the COMA. Maintenance Contractor shall establish and maintain an organization that effectively manages all Maintenance Services in a manner set forth in the approved Maintenance Management Plan and the requirements of the COMA Documents. Maintenance Contractor shall take all necessary actions to achieve the following:

- Coordinate activities of other entities with interests or activities within or respecting the Project or Project ROW, including the Authority, TxDOT, emergency services, police, toll operator, towing companies, and regional traffic management center.
- Provide Incident and Emergency response, management and reporting.
- Conduct regular patrols of all lanes of the Project to identify conditions that are unsafe or have the potential to become unsafe, conditions that could threaten the infrastructure, and to attend to existing or changing conditions.
- Maintain the Maintenance Elements in a manner appropriate for a facility of the character of the Project and maintain all lanes in accordance with the same standard of maintenance.
- Minimize delay and inconvenience to Users and, to the extent Maintenance Contractor is able to control, Users of adjacent and connecting roadways.
- Monitor and observe weather and weather forecasts to proactively deploy resources to minimize delays and safety hazards due to heavy rains, snow, ice, or other severe weather events.
- Minimize the risk of damage, disturbance, or destruction of third-party property during the performance of Maintenance Services.
- Coordinate with and enable TxDOT and others with statutory duties or functions in relation to the Project to perform such duties and functions.
- Perform systematic Project inspections, operational work, periodic maintenance, routine maintenance, and Renewal Work in accordance with the provisions of Maintenance Contractor’s Maintenance Management Plan and Maintenance Contractor’s Maintenance Safety Plan and the COMA Documents.
- Promptly investigate reports or complaints received from all sources.

In carrying out the Maintenance Services, where there is a requirement for design, the Maintenance Contractor shall ensure that the Project is restored either to the original design used for the construction of the Project, or to a different design that shall be in accordance with the requirements for design set forth in the COMA Documents.

Maintenance Contractor shall submit an annual report to TxDOT by each anniversary of the Initial Maintenance Term Commencement Date. This annual report shall include the following elements:

- An assessment of the actual Maintenance Services achievements versus the planned goals established in the Maintenance Management Plan, as well as corrective actions and measures to be taken in the ensuing year to ensure that any shortcomings are corrected;
- An assessment of compliance with the various traffic control requirements and limitations contained in Section 3.4 of the COMA and the traffic control plans developed in accordance with Section 1100, as well as any corrective measures taken to correct any breach or violation of such requirements and limitations and any corrective measures necessary to prevent such future breach or violation of such requirement and limitations;
- A report of the quality inspections and tests performed, the results of such inspections and tests, and occurrences and resolution of nonconformance discoveries.

On or about the Effective Date of termination of Maintenance Services, the Maintenance Contractor shall submit to TxDOT a complete set of Record Drawings. The Record Drawings shall be an organized, complete record of drawings and supporting calculations and details that accurately represent what the Maintenance Contractor constructed. Maintenance Contractor shall ensure that the Record Drawings reflect the actual condition of the Maintenance Services construction.

Maintenance Contractor agrees that its Maintenance Manager shall be responsible to oversee and perform the Maintenance Services in accordance with the COMA including ensuring proper training of its maintenance personnel and resources available for conducting Maintenance Services. Maintenance Manager shall be responsible for the health and safety of personnel involved with Maintenance Services and the general public affected by the Project and shall serve as the point of contact for Maintenance Contractor in communication with TxDOT and in coordination activities with other entities during Emergencies.

### **0110 Performance Requirements**

Maintenance Contractor is responsible for performing all activities necessary to satisfy the Performance Requirements set forth in Tables 2 and 3 of this Maintenance Specification and Tables 1-1 and 1-2 of Exhibit 16 with respect to the Maintenance Elements. Failure to meet a Performance Requirement shall be deemed to be a Defect. Whenever a Defect is identified, either by Maintenance Contractor's inspections, by TxDOT or any third party, Maintenance Contractor shall act to remedy, repair and record the Defect as described herein.

The remedy or repair of any Maintenance Element shall meet or exceed the Performance Requirements stated in Tables 2 and 3 of this Maintenance Specification and Tables 1-1 and 1-2 of Exhibit 16 and a Maintenance Record shall be created by Maintenance Contractor to verify that this requirement has been met.

Where a Defect Hazard Noncompliance Event is identified, Maintenance Contractor shall take immediate steps to respond with the necessary personnel and equipment to temporarily mitigate the hazard and provide a safe area for any Emergency vehicles or maintenance vehicles, by use of traffic control devices to secure the hazard and other appropriate measures. Maintenance Contractor shall also coordinate with TxDOT to alert Users to the hazard. Maintenance Contractor shall categorize, correct, make safe and provide a temporary mitigation to the Defect in accordance with Table 1-1 of Exhibit 16

For a Defect Hazard Noncompliance Event for which temporary mitigation is specified as a minimum Performance Requirement in Table 1-1 of Exhibit 16, Maintenance Contractor shall take necessary action such that the hazard to Users is mitigated within the Cure Period given in Table 1-1 of Exhibit 16; and after the Defect Hazard Noncompliance Event has been properly mitigated, Maintenance Contractor shall take the necessary actions to promptly repair the Defect.

For all other Noncompliance Events, Maintenance Contractor shall take necessary action to restore the Maintenance Element to a condition which meets or exceeds the minimum Performance Requirements within the applicable period given in the column entitled "Cure Period" in Exhibit 16.

Where action is taken to remedy or repair any Defect in any Maintenance Element of the Project, Maintenance Contractor shall create a Maintenance Record that identifies the nature of the remedy or repair. Maintenance Contractor shall include within the relevant Maintenance Record a measurement record which includes the details of all relevant inspections and actions taken with respect to Defects, including temporary protective measures and repairs.

Should Maintenance Contractor propose any changes to Exhibit 16, Maintenance Contractor shall propose for TxDOT's approval such amendments to the inspection and measurement methods and measurement records as are necessary to cause these to comply with this Maintenance Specification.

#### **0120 Maintenance Management Plan**

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, a Maintenance Management Plan (MMP). Approval by TxDOT of the MMP shall be a condition precedent to the performance of Maintenance Services.

The MMP is an umbrella document that describes the Maintenance Contractor's managerial approach, strategy, and quality procedures to maintain the Maintenance Elements and achieve all requirements of the COMA Documents. The MMP shall define the process for maintenance of the Maintenance Elements throughout the Maintenance Term. Unless otherwise agreed by TxDOT, the MMP shall be consistent with the maintenance approach and MMP submitted with the Proposal.

The MMP shall include Performance Requirements, measurement procedures, threshold values at which maintenance is required, inspection procedures and frequencies, and subsequent maintenance to address noted deficiencies, for each Maintenance Element, including impacts to adjacent and connecting roadways, in addition to the general sequence of Maintenance Services and schedule deadlines. The MMP shall identify response times to mitigate hazards and to repair Defects. The MMP shall be consistent with Exhibit 16, including the Performance Requirements and response times therein, and with all other COMA Documents. Maintenance Contractor shall update this plan at least annually, and more often as required.

The MMP shall also include a detailed process by which events are handled and processed including:

- a) Notification: This includes event identification, notification triggers (periodic or inspection based), responsible individuals, and entities or individuals to be notified.
- b) Classification: This includes how events are classified (i.e. by Maintenance Element or its function, safety impacts, Governmental Entities/public concern, etc.).

- c) Action Plan: This includes developing a detailed plan based on event classification type listing all actions necessary to handle and close out the event.
- d) Action: By event classification type, this includes a description of how the actions are carried out stating the responsible individuals and the duration it will take to complete such actions in accordance with the requirements of the COMA Documents.
- e) Closure: This includes how the event is closed out stating necessary notification and the individuals to be notified for such event closure.
- f) Documentation: This includes how events are entered, updated and closed in the MMS and other applicable data and communication systems.

The MMP shall include procedures for managing Maintenance Records, including appropriate measures for providing protected duplication of the records. Maintenance Records shall be kept for the Maintenance Term and shall be provided to TxDOT at the time the Project is delivered to TxDOT, at either the expiration of the Maintenance Term or earlier termination of the Agreement. All records obtained during the Warranty Periods shall be kept and provided to TxDOT at the end of the last Warranty Period.

The documents listed below are documents TxDOT currently uses and are strictly for "information purposes only" in the development of the MMP. TxDOT does not warrant or guarantee, in any way, the outcomes achieved by the Maintenance Contractor in using any of these documents.

- a) Maintenance Operations Manual
- b) Maintenance Management Manual
- c) Roadside Vegetation Management Manual
- d) Herbicide Operations Manual
- e) Herbicide Recordkeeping Book
- f) Traffic Operations Manual
- g) Sign Crew Field Book
- h) Highway Condition Report (HCR) Manual
- i) Use of Right of Way (ROW) by Others Manual
- j) Material Producer List
- k) Public Assistance Guide FEMA 322
- l) Emergency Relief Manual FHWA
- m) Department's Function Code Chart 12

The MMP shall include a schematic clearly illustrating the limits, using Auditable Sections per Section 0130.

The MMP shall include procedures and schedules for the development and submission of the following maintenance reports:

- a) Texas Traffic Assessment Program (TxTAP) Reports. Signing, striping and operational reports will be prepared annually.
- b) Pavement Management Information System (PMIS). PMIS reports will be prepared annually.

- c) Texas Maintenance Assessment Program (TxMAP) Reports. TxMAP reports will be prepared annually.
- d) Lighting Reports. Inspection reports will be prepared annually for continuous lighting and high mast lighting features.
- e) Quarterly Noncompliance Events Report.

In the event that the Authority assumes responsibility for the COMA, Maintenance Contractor shall promptly revise the MMP to include procedures and schedules for the development and submission of the following maintenance reports on an annual basis in lieu of the reports (a) through (e) listed above:

- a) Maintenance Rating Program. The Maintenance Rating Program requires monthly inspection of 10% of the system selected on a random sample basis.
- b) Capital Asset Management and Inspection Report. This is an annual report of the inspections performed on the Authority's assets during the previous year.
- c) Pavement Management Report. This report provides the result of any pavement evaluation conducted during the previous year. It includes information about the International Roughness Index (IRI) and the Authority's Condition Rating System (CRS) as well as skid test results.
- d) Overhead Sign Inspection Report. This report provides the results of the inspections of overhead sign structures conducted during the previous year. Every sign structure shall be inspected every five years, inspecting a portion of the structures each year. The inspection shall be expanded to include the Project structures. Adjustments and minor repairs are made during inspections.
- e) Other Reports. - These are reports of special inspections that are conducted in response to assets exhibiting signs of abnormal wear or fatigue. Environmental studies are also conducted, when required, to comply with various issues, such as the Municipal Separate Storm Sewer System program. The Authority will notify TxDOT of the studies and provide a copy of the reports if requested by TxDOT.

### **0130 Auditable Sections**

Maintenance Contractor shall implement the Authority's Station Marker System and shall establish Auditable Sections referenced to the station markers.

Maintenance Contractor shall prepare drawings identifying the Auditable Sections and shall submit them to TxDOT for approval as a condition precedent to commencing Maintenance Services. The drawings shall identify the boundaries of each Auditable Section and shall cross reference to an inventory describing each Maintenance Element of the Project contained within each Auditable Section.

### **0140 Incident Management**

As part of the MMP, Maintenance Contractor shall prepare and implement an Incident Management Plan to address Incident and Emergency response, including:

- Procedures to identify Incidents and notify Emergency Services providers and establish traffic control for Incident management activities in a timely manner;

- Procedures for removal of stalled, broken down, wrecked or otherwise incapacitated vehicles from the travel lane, including coordination with Emergency Services/Law enforcement;
- Procedures to institute all measures to clear the Incident and return lane availability within one hour of notification;
- Procedures for cleanup of debris, oil, broken glass, etc. and other such objects foreign to the roadway surface;
- Procedures to identify, contain, and dispose all hazardous material spill;
- Procedures for automobile towing of Users' light and heavy vehicles at the Users' expense;
- Descriptions of contact methods, personnel available, and response times for any Emergency condition requiring attention during off-hours;
- Procedures to communicate Incident and Emergency information and response information to Maintenance Contractor's and TxDOT's public information personnel and notify the public of traffic issues related to Incidents and Emergencies

Maintenance Contractor shall prepare the Incident Management Plan and its subcomponents in coordination with and input from the governmental agencies that are responsible for responding to Incidents or for Emergency Services.

Maintenance Contractor shall train its personnel who may be involved in Incident or Emergency management in accordance with all Laws. Maintenance Contractor shall cause a trained member of staff to be on standby 24 hours a day seven days a week to coordinate Maintenance Contractor's response to any Incident or Emergency. Maintenance Contractor shall attend to Incidents with trained personnel, equipped to carry out the functions required. After inception of an Incident or Emergency, Maintenance Contractor shall commence the implementation of safety procedures (including road signing, information for Users, information for law enforcement agencies) as soon as practicable and in accordance with any applicable Performance Requirements.

Where an Incident or Emergency has an effect on the operation of the Project, Maintenance Contractor shall clear obstructions and repair damage to the Project in accordance with the procedures under the Incident Management Plan and under the supervision of the relevant Emergency Services if necessary, such that the Project is returned to normal operating standards and safe conditions as quickly as possible.

Where liquid or soluble material spills are involved, Maintenance Contractor shall take all necessary measures to minimize pollution of watercourses or groundwater. Where structural damage to structures is suspected, Maintenance Contractor shall cause a suitably qualified bridge engineer or specialist inspector to be available to evaluate the structure and to advise on temporary repairs and shoring needed to provide safe clearance of the Incident or Emergency. Where such an Incident or Emergency involves a personal injury, Maintenance Contractor shall not remove any vehicle or other item that may assist a potential investigation by Emergency Services until authorized to do so by the Emergency Services agency or agencies.

### **0150 Renewal Work**

The MMP shall include Maintenance Contractor's proposals for Renewal Work. As part of the MMP, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, a

Renewal Work Submittal which includes the timing, scope, and nature of work that Maintenance Contractor proposes during each year. Maintenance Contractor shall set forth, by Maintenance Element:

- The estimated Useful Life;
- The description of the Renewal Work anticipated to be performed at the end of the Maintenance Element's Useful Life;
- A brief description of any Renewal Work anticipated to be performed before the end of the Maintenance Element's Useful Life including reasons why this work should be performed at the proposed time; and
- A schedule for the Renewal Work planned for the current year and for the next five-year period.

Within 60 days after issuance of Maintenance NTP1, as part of the MMP, the Maintenance Contractor shall submit the first Renewal Work Submittal to TxDOT for review.

Not later than 120 days before each anniversary of the Initial Maintenance Term Commencement Date thereafter, Maintenance Contractor shall prepare and submit, for TxDOT's review and approval, either: (a) a revised Renewal Work Submittal for the upcoming year or (b) the then-existing Renewal Work Submittal, accompanied by a written statement that Maintenance Contractor intends to continue in effect the then-existing Renewal Work Submittal without revision for the upcoming year (in either case, referred to as the "updated Renewal Work Submittal"). Maintenance Contractor shall make revisions as reasonably indicated by experience and then-existing conditions respecting the Project, changes in technology, changes in Maintenance Contractor's planned means and methods of performing the Renewal Work, and other relevant factors. The updated Renewal Work Submittal shall show the revisions, if any, to the prior Renewal Work Submittal and include an explanation of reasons for revisions. If no revisions are proposed, Maintenance Contractor shall include an explanation for the lack of revisions.

### **0160 Maintenance Management System**

Maintenance Contractor shall implement a computer based Maintenance Management System (MMS), compatible with TxDOT's MMS, to record inventory, failures, repairs, maintenance activities, inspections performed, and record of all Noncompliance Events.

The MMS shall include relevant Maintenance Element information, including location to the nearest tenth mile, using the posted reference marker number, Geographic Information System data and control number for bridge class structures, asset description, date of installation, type of failure, date-time of failure, date-time of response to the site and date-time returned to service, preventive maintenance work, scheduled work, work repair code, time of failure, to time of repair. The MMS shall be configured to report work by TxDOT "function code" shown in Attachment 7, Maintenance Element, reference marker, and unit of measurement, as the same described in the MMS user manual, to categorize the Maintenance Services performed by the Maintenance Contractor.

The MMS shall be able to record all complaints and service requests. The Maintenance Contractor shall report weekly to TxDOT, in a format approved by TxDOT, information on any complaints or service requests received by the Maintenance Contractor. This information will include the following:

- The date and time of the complaint;

- The location and nature of the problem;
- Injuries and police involvement, including agency, name and badge number;
- Who made the complaint; and
- Date and action taken to address the complaint.

The MMS shall be able to record all accidents and Incidents. The Maintenance Contractor shall report in writing to TxDOT, no later than the 15th of each calendar month in a format approved by TxDOT, information from the previous month on any accident or Incident related to Maintenance Services being performed by Maintenance Contractor or within a work zone, including:

- Accidents involving the Maintenance Contractor or any Subcontractor personnel, equipment, barricades or tools;
- Traffic accidents within the limits or in the vicinity of any Maintenance Services being performed by Maintenance Contractor or any Subcontractors;
- Releases of Hazardous Materials;
- Any accident involving the Maintenance Contractor or the traveling public that causes damage to any Project appurtenance, structure, improvement or fixture.
- With respect to any accident or Incident, the information provided shall include as a minimum:
  - The date and time of the accident or Incident;
  - The location of the problem;
  - The nature of the problem;
  - All parties involved in the Incident, including names, addresses, telephone numbers and their involvement (including witnesses);
  - Responsible party and insurance information;
  - Action taken to address the Incident; and
  - Documentation of traffic control in place at location.

When a Maintenance Element is constructed, installed, maintained, inspected, modified, replaced or removed, Maintenance Contractor shall update the MMS within three days of completion of such work. Defects shall be recorded on the MMS within three days of coming to the attention of Maintenance Contractor. All other recording requirements shall be recorded on the MMS within 15 days of completion or occurrence of the relevant activity.

The MMS shall be fully populated and operational prior to the commencement of Maintenance Services and kept updated and operational for the duration of the Maintenance Term. Maintenance Contractor shall provide equipment, facilities and training necessary to permit remote, real-time, dedicated high-speed access to the MMS, via one terminal each, for TxDOT. Maintenance Contractor shall handover the MMS and everything required for its operation to TxDOT, or other entity as directed by TxDOT, upon expiration or earlier termination of Maintenance Term.

## **0170 Maintenance Services Quality Control Plan (Maintenance Services QCP)**



Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit a comprehensive quality control plan (Maintenance Services QCP) to TxDOT for approval that is consistent with and expands upon the preliminary Quality Management Plan (QMP) submitted with the Proposal.

The Maintenance Services QCP shall capture all Work performed by Maintenance Contractor and its Subcontractors and shall contain detailed procedures for the Maintenance Contractor's quality control activities including a complete description of the quality policies and objectives that Maintenance Contractor shall implement throughout its organization. The policies shall demonstrate Maintenance Contractor senior management's commitment to implement and continually improve the maintenance quality system.

The Maintenance Services QCP shall contain detailed descriptions of the inspection and test plans, including the timing and frequency of testing, as well as detailed systems and procedures for the following:

- Control of quality records
- Management reviews
- Resource allocation
- Measurement of customer satisfaction
- Control of nonconforming products and services
- Internal audits

Maintenance Contractor shall update the Maintenance Services QCP as needed to ensure current versions of the following information are contained in said plan:

- The organizational chart that identifies all quality management personnel, their roles, authorities and line reporting relationships;
- Descriptions of the roles and responsibilities of all quality management personnel and those who have the authority to stop activities;
- Identification 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; and
- Resumes for all quality management personnel.

Maintenance Contractor shall revise its Maintenance Services QCP when its own quality management organization detects a repeating or fundamental non-conformance in the work performed or in the manner the Maintenance Services are inspected or tested, or when TxDOT advises the Maintenance Contractor of such a problem.

The Maintenance Services QCP shall be consistent with current versions of ISO standards relating to quality and audit as updated by the International Standards Organization. Maintenance Contractor may elect to obtain formal ISO quality certification, but will not be required to do so.

Quality terminology, unless defined or modified elsewhere in the COMA Documents, shall have the meaning defined in BS ISO 9001. Terms used in BS ISO 9001 shall have the meanings defined below:

- Organization - the Maintenance Contractor's organization, including any Affiliates and Subcontractors

- Customers - the Users of the roadways, TxDOT, Customer Groups, and key stakeholders that have an adjacent property interest or connecting roadway
- Suppliers - Contractors
- Product - Maintenance Services
- Quality control - the part of quality management focused on fulfilling quality requirements
- Quality Management Plan - the Maintenance Services QCP

Maintenance Contractor shall make all quality records available to TxDOT for review upon TxDOT's request and shall submit to TxDOT the results of all internal audits within seven Days of their completion.

Maintenance Quality Manager shall be responsible to see that the methods and procedures contained in approved Maintenance Services QCP are implemented and followed by Maintenance Contractor and Subcontractors in the performance of the Maintenance Services. Maintenance Quality Manager shall be a Registered Professional Engineer.

### **0180 Maintenance Safety Plan**

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit to TxDOT for approval a comprehensive safety plan ("Maintenance Safety Plan") that is consistent with and expands upon the preliminary Safety and Health Plan submitted with the Proposal. The Maintenance Safety Plan shall fully describe the Maintenance 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 Term.

Maintenance Contractor's Maintenance Safety Plan shall address procedures for immediately notifying TxDOT of all Incidents and Emergencies arising out of or in connection with the performance of the Maintenance Services, whether on or adjacent to the Project.

A safety manager shall be assigned to the Project. The safety manager shall be responsible for carrying out the Maintenance Contractor's safety plan and all safety-related activities, including training and enforcement of safety operations. The safety manager shall have the authority to stop all Maintenance Services. Upon TxDOT's approval, this position can be fulfilled by another employee of the Maintenance Contractor if the employee can meet all qualification requirements and can be available on site to the extent needed to perform the level of oversight deemed necessary for the work being performed. Requirements include:

- Roadway construction and safety enforcement experience;
- 10 years of progressive safety experience, five years of which must be safety management experience on similar operations and maintenance projects;
- Designation, at or before the Effective Date, as a Construction Health and Safety Technician by the Board of Certified Safety Professionals, or designation as a Certified Safety & Health Official, either of which may be substituted for two years of safety management experience;
- Completion of the OSHA #500 course – Trainer Course in OSHA Standards for Construction;
- Training and current certification for CPR and First Aid; and
- Completion of the following training sponsored by an accredited agency:

- Work zone traffic control
- Flaggers in work zones.

### **0190 Management of Communications between Maintenance Contractor and TxDOT**

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit a comprehensive communications plan (“Maintenance Communications Plan”) to TxDOT for approval that is consistent with and expands upon the preliminary communications plan submitted with the Proposal.

The Maintenance Communications Plan shall describe the processes and procedures for communication of Project information between the Maintenance Contractor’s organization and TxDOT and shall describe how the Maintenance Contractor’s organization will respond to unexpected requests for information, communicate changes or revisions to necessary Maintenance Contractor personnel, and notify TxDOT before and after changes are made to the COMA Documents.

Maintenance Contractor shall maintain and update the Maintenance Communications Plan as the Maintenance Term progresses.

### **0200 Maintenance Transition Plan**

Within 60 Days after issuance by TxDOT of Maintenance NTP1, Maintenance Contractor shall submit a Maintenance Transition Plan to TxDOT and the Authority which includes the following items:

- Maintenance transition punch list
- List and status of equipment Warranties
- Vendors’ test reports
- Maintenance Contractor’s test reports
- Record Drawings for Renewal Work
- Maintenance Records (including NBIS records)
- Copies of Warranty and service contracts
- List of spare parts purchased as part of the Maintenance Services

At 60 days prior to the end this COMA, or promptly upon earlier termination, Maintenance Contractor shall submit an updated Maintenance Transition Plan to TxDOT for review and approval.

Maintenance Contractor shall coordinate the identification of Maintenance transition punch list items required to be completed by Maintenance Contractor prior to maintenance transfer. The Maintenance transition punch list shall include (a) estimated completion dates, (b) responsible party(s), and (c) items that must be completed prior to maintenance transfer. Maintenance Contractor shall be responsible to prepare (in conjunction with TxDOT), administer and complete all items on the Maintenance transition punch list to the satisfaction of TxDOT and the Authority prior to the transfer of maintenance responsibilities to TxDOT and the Authority.

The Maintenance Contractor shall coordinate with TxDOT to achieve a smooth transition of Maintenance Services to TxDOT and the Authority.

### **0210 Maintenance Document Management Plan**

Maintenance Contractor shall establish and maintain an electronic document control system ("Maintenance Document Management Plan") to store, catalog, and retrieve all Maintenance Records in a format compatible with Texas Reference Marker System used by TxDOT. Unless otherwise directed by TxDOT, record retention shall comply with the requirements of the Texas State Records Retention Schedule.

### **0220 Maintenance Services Deliverables Schedule**

Maintenance Contractor recognizes the importance of the schedules for defining the time-frame for the maintenance of the Maintenance Elements and the achievement of the milestones, monitoring the progress of Maintenance Services and denoting changes that occur. Within 60 days after issuance of Maintenance NTP1 and periodically thereafter as required under the COMA Documents, Maintenance Contractor shall prepare a Maintenance Services Deliverables Schedule and shall submit it to TxDOT for review and approval. Approval of the Maintenance Services Deliverables Schedule shall be a condition precedent to commencing Maintenance Services.

The Maintenance Services Deliverables Schedule shall include all Maintenance Services activities required under the COMA Documents, in sufficient detail to monitor and evaluate progress during the Maintenance Term(s) including maintenance and interfaces with other projects, third parties and Governmental Entities.

For each activity, Maintenance Contractor shall indicate the duration (in Days) required to perform the activity and the anticipated beginning and completion date of each activity. In addition, the Maintenance Services Deliverables Schedule shall indicate the sequence of performing each activity and the logical dependencies and inter-relationships among the activities.

The Maintenance Services Deliverables Schedule shall include a listing of all submittals as called out in the COMA Documents. Submittal activity durations shall include specific durations for TxDOT review and/or approval of the Maintenance Contractor's submittals as called out elsewhere in the COMA Documents.

With the exception of activities relating to Environmental Approvals by Governmental Entities, each activity depicting the Maintenance Contractor's maintenance operations shall have duration of not more than 20 Days, and not less than one Day, except as otherwise approved by TxDOT.

Maintenance Contractor shall update the approved Maintenance Services Deliverables Schedule to reflect the current status of the Project, including approved Change Orders or provide a notification of no change to the current schedule, on at least a monthly basis. Each Maintenance Services Deliverables Schedule update shall accurately reflect all activities as of the Effective Date of the updated schedule and shall include a schedule narrative report which describes the status of the Maintenance Services in detail.

The Maintenance Services Deliverables Schedule shall include a schedule for Renewal Work as set forth in the Renewal Submittal or most recent update thereto.

Maintenance Contractor shall submit a hardcopy of the schedule on full-size (11" x 17") color plot sheets, as well as an electronic version of the schedule in its native format for each submittal of the schedule along with a narrative.

### **0230 General and Specialist Inspections**

Maintenance Contractor shall establish and implement an inspection plan and inspection procedures for a program of General Inspections and Specialist Inspections (as described in Table 1 below) of the Project to be included within the Maintenance Services Deliverables Schedule. The program of such inspections shall :

- Verify the continuing safety of the Project for Users;
- Prioritize timely detection and cure of Defect Hazard Noncompliance Events;
- Ensure that all Defect Hazard Noncompliance Events are detected timely and repaired such that the hazard to Users is mitigated within the applicable period given in the column entitled “Cure Period” in Table 1-1 of Exhibit 16;
- Ensure that all Noncompliance Events are detected timely and a mitigation action, remedy, or repair, as required under Section 0110, is achieved within the applicable period given in the column entitled “Cure Period” in Exhibit 16;
- Be responsive to reports or complaints received from Customer Groups;
- Take account of Incidents and Emergencies affecting the Project;
- Monitor the effects of extreme weather conditions; and
- Collate data to monitor performance of the Project and to establish priorities for future maintenance operations and Renewal Work.

Maintenance Contractor shall ensure that personnel performing inspections of road pavements and structures are certified as inspectors and/or raters in accordance with TxDOT’s PMIS program or applicable certifying agency for the type of inspection being performed. Inspections, reviews, and testing performed with respect to Maintenance Services shall only be performed by personnel with appropriate training and qualifications, using appropriate equipment that is accurately calibrated and maintained in good operating condition at an AASHTO Materials Reference Laboratory (AASHTO R18, “Establishing and Implementing a Quality System for Construction Materials Testing Laboratories”) accredited facility, or at a facility with comparable certification (e. g. ISO 17025, “General requirements for the competence of testing and calibration laboratories”).

Maintenance Contractor shall deliver to TxDOT not less than seven days' prior notice of any General Inspection or Specialist Inspection. TxDOT shall have the right, but not the obligation, to attend and observe any General Inspection or Specialist Inspection.

The periods stated in Exhibit 16 under the heading of Cure Period shall be deemed to start as set forth in Section 19.2.3.2 of the COMA. Maintenance Contractor shall investigate reports and complaints on the condition of the Project received from all sources. Maintenance Contractor shall record such reports and complaints as Maintenance Records.

Maintenance Contractor shall perform General Inspections in accordance with the MMP so that the repairs of all Defects are included in planned programs of work. General Inspections shall be conducted more frequently than, and are in addition to, Audit Inspections.

Maintenance Contractor shall record in the Maintenance Records details of the manner of inspection (e. g. center lane closure or shoulder), the weather conditions and any other unusual features of the inspection.

Maintenance Contractor shall undertake Specialist Inspections for Maintenance Elements listed in Table 1 and shall include the inspection results as Maintenance Records.

**Table 1: Specialist Inspections**

<b>Maintenance Element</b>	<b>Specialist Inspection</b>
All Maintenance Elements in Maintenance Element Category 'Roadway' in Attachment 2 to this Maintenance Specification	Annual survey and scoring of pavement condition for the entire Project, including mainlanes, ramps, and frontage roads, undertaken using automated condition survey equipment to measure all necessary criteria including: ruts, skid resistance and ride quality according to the requirements set forth in Exhibit 16
All Maintenance Elements in Maintenance Element Category 'Structures' in Attachment 2 to this Maintenance Specification	TxDOT will perform NBIS inspections as per FHWA regulations and at the frequency specified in FHWA regulations and shall provide reports of the inspections to the Maintenance Contractor and the Authority.
Pavement markings for all lane lines, edge lines, centerline/no passing barrier-line	Annual Mobile Retroreflectivity Data Collection 60 days before the first anniversary of the date of authorization to begin work and each year thereafter in accordance with Special Specification 8094 Mobile Retroreflectivity Data Collection for Pavement Markings.

Maintenance Contractor shall submit to TxDOT non-conformance reports within seven days of issuance and shall notify TXDOT of Nonconforming Work within two days of discovering the Nonconforming Work. TxDOT will issue a non-conformance report if TxDOT discovers any Nonconforming Work.

**0240 Baseline Condition Score; Maintenance Contractor Audit Inspections**

TxDOT will perform a baseline condition assessment for all Maintenance Elements listed in Table 2 below to establish a Baseline Condition Score at Substantial Completion for such Maintenance Elements, for the Components listed in Table 2 below, and overall, using the criteria in Table 2 and Table 3 below. This baseline condition assessment will be performed within 30 days after Substantial Completion. Maintenance Contractor will be notified at least three days prior to the date of the baseline condition assessment and is encouraged to accompany TxDOT during the assessment. This Baseline Condition Score will be used during the Initial Maintenance Term to apply Section 1-2.01 of Exhibit 16.

TxDOT will perform another baseline condition assessment to establish a new Baseline Condition Score approximately five years after Substantial Completion for all Maintenance Elements listed in Table 2 below, for the Components listed in Table 2 below, and overall, using the criteria in Table 2 and Table 3 below. This baseline condition assessment will be performed within 30 days after issuance of Maintenance NTP2. Maintenance Contractor will be notified at least three days prior to the date of the baseline condition assessment and is encouraged to accompany TxDOT during the assessment. If the score is adversely affected by any then-existing failures to meet Performance Requirements, TxDOT shall have the right to upwardly adjust the score to neutralize this effect in arriving at the new Baseline Condition Score. This Baseline Condition Score will be used during the Second and Third Maintenance Terms respectively to apply Section 1-2.01 of Exhibit 16.

For clarity, Maintenance Contractor's satisfaction of the Baseline Condition Scores in its Audit Inspections shall not excuse Maintenance Contractor from meeting the other Performance Requirements.

Maintenance Contractor shall undertake Audit Inspections of TxDOT's randomly selected Auditable Sections for audit purposes at least once quarterly, under a detailed schedule agreed

with TxDOT. The Audit Inspections shall be designed such that over a period of one year the sample sections are statistically valid for 100% of the assets. In the Audit Inspections, Maintenance Contractor shall assess and score the condition of each Maintenance Element listed in Table 2 of this Maintenance Specification.

Maintenance Contractor shall create a new Maintenance Record, in accordance with Exhibit 16, for each Maintenance Element physically inspected. Maintenance Contractor shall provide TxDOT seven days' prior written notice of the physical inspections associated with the Audit Inspections. TxDOT shall have the right, but not the obligation, to accompany Maintenance Contractor on each such physical inspection.

#### **0250 Asset Condition Score by Maintenance Contractor**

Within 10 days of the Audit Inspections, Maintenance Contractor shall determine its Asset Condition Scores, compare them to the Baseline Condition Scores, and measure the Asset Condition Scores according to the Performance Requirement thresholds set forth under "Asset Condition Score" in Table 1-2 of Exhibit 16.

Maintenance Contractor shall report to TxDOT an overall Asset Condition Score, an Asset Condition Score for each Component listed in Table 3, and an Asset Condition Score for each Maintenance Element listed in Table 3, to include all of the Auditable Sections inspected in the most recent Audit Inspection. Maintenance Contractor shall assess such Asset Condition Scores according to the measurement criteria set forth in Table 2 and the methodology set forth in Table 3.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Component - Asphalt Pavement</b>					
<b>Rutting</b> (Do not count rutting associated with "Failures" below)	No rutting.	Minor < ¼" Flushing, Rock wearing	Moderate ( ¼" to ½") May be able to feel when crossing in vehicle	Major ( > ½" to 1")	Severe (> 1")
<b>Cracking</b> (Do not count cracking associated with "Failures" below)	No cracking	Minor cracking (tight cracking that a seal would cover). All cracks sealed and no sealed areas wider than 3".	Moderate cracking (cracking wide enough to be crack sealed). Minor cracking throughout the section. All cracks sealed and sealed areas are wider than 3".	Major cracking (cracks wider than ½"). Moderate cracking throughout the section. May have some pumping or may have some squeegee seal areas.	Severe cracking (cracks wide than 1"). Major cracking throughout section. Substantial pumping and substantial squeegee seal areas.



**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Failures</b>	No repairs of any type.	All patched and repaired areas are smooth and level. Small depressed areas, (gopher runs, settled areas, ant towns or etc.)	Moderate failures (small areas that have minor pavement movement and/or tight cracking that you will need to dig in near future). Several small depressed areas. Un-level repairs. Small open potholes.	Major failures (areas in need of repair, that have cracking and may have some pavement movement, needs repairs now). Have several moderate failures. Large open potholes.	Severe failure (areas that have loose pavement or missing pavement). Several major failures.

**Table 2: Asset Condition Scoring System**

<b>Maintenance Element</b>	<b>Perfect 5</b>	<b>Above Average 4</b>	<b>Average 3</b>	<b>Below Average 2</b>	<b>Poor 1</b>
<b>Ride</b> (Settlement)	Very smooth with no humps, lumps or depressions.	Smooth with few minor humps, bumps or depressions. All patches are smooth and level.	Adequate with several minor humps, bumps or depressions. Some repairs are not smooth and level. May have 3 moderate humps, bumps or depressions (will feel sharpness in vehicle).	Rough with many moderate humps, bumps or depressions. Most repairs are not smooth and level. May have 2 locations that you feel the vehicle bottom out.	Unacceptable, causing a reduction in speed (Example: Open failure).

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<p><b>Edges</b> Raveling/ broken area first 1 foot of pavement and drop-off area foot off pavement.</p>	<p>No repairs made. May have complete edge seal.</p>	<p>Minor drop-offs (short lengths &lt; 50' and &lt; 2" deep) and/or minor broken edge (areas &lt; 100' and up to 3" wide). All repaired.</p>	<p>Moderate drop-offs (short areas of &lt; 50' and 2" to 4" deep. Long areas of minor drop-offs. Moderate broken edge (areas under 100' and up to 6" wide). Long areas of minor broken edge. Not all repaired.</p>	<p>Major drop-offs (over 4" to 6"). Long areas of moderate drop-offs. Major broken edge (areas over 6" wide). Long areas of moderate broken edge.</p>	<p>Severe drop-offs (over 6"). Long areas of major drop-offs. Long areas of major broken edge.</p>
<p><b>Shoulders</b> Must be wider than 2'. Rating based on cracking, crack seal, patching and failures.</p>	<p>Very good condition no repairs made.</p>	<p>Pavement in good condition (few repairs) or very few repairs needed.</p>	<p>Pavement in fair condition (several repairs). Some minor repairs needed.</p>	<p>Pavement in poor condition major repairs needed.</p>	<p>Pavement is coming apart.</p>

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Component - Concrete Pavement</b>					
<b>Rutting</b>	Concrete pavement will not be rated.				
<p><b>Cracking/continuously reinforced concrete pavement</b> Do not rate cracking associated with large pop outs.</p>	Has typical tight transverse cracking on 3'-6' spacing.	Minor Cracking, (typical transverse cracking on 3' -6' spacing with very minor spalls along cracks). May have a very few tight transverse cracks.	Moderate cracking (most transverse cracking closer than the typical 3' - 6' spacing). May have a very few minor longitudinal cracks.	Major cracking (several areas of tight transverse and longitudinal cracking, some may have very minor spalls along crack).	Severe cracking (wide transverse and longitudinal cracking, some may have minor pop outs).

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<p><b>Cracking/jointed concrete pavement</b> Do not count cracking associated with pop outs.</p>	<p>No cracking.</p>	<p>Minor cracking (a few tight transverse or longitudinal cracks). All cracks sealed, none wider than 3".</p>	<p>Moderate cracking (transverse or longitudinal cracks that are wide enough to be sealed). A large amount of minor cracking. Some sealed and some unsealed. All cracks sealed, some wider than 3".</p>	<p>Major cracking (transverse or longitudinal cracks that are wide enough to be sealed with some minor spalls). A large amount of moderate cracking. More unsealed than sealed.</p>	<p>Severe cracking (wide transverse or longitudinal cracks &gt; 3/4". A large amount of major cracking.</p>

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Failures</b>	No pop outs or punch outs. No repairs.	All repairs are smooth and level. No asphalt patches. No more than 3 very small pop outs (small pieces missing pavement, may be by joints).	Some rough repairs. May have some small pop outs patched with asphalt. More than 3 very small pop outs. No more than 3 small low severity punch outs (longitudinal and transverse cracks are tight and will have minor spalls).	More than 3 small low severity punch outs. No more than 3 moderate severity punch outs (longitudinal and transverse cracks are wide and will have spalls, needs repair in near future).	More than 3 moderate severity punch outs. Any high severity punch out (longitudinal and transverse cracks are wide and concrete will move under traffic or is missing).

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Ride</b>	Ride smooth with no humps, bumps or rough joints.	Smooth with few minor humps, bumps or rough joints. All repairs are smooth and level.	Adequate with several minor humps, bumps or rough joints (will feel sharpness in vehicle).	Rough with many moderate humps, bumps or rough joints. Most repairs are not smooth and level. May have 2 locations that you feel the vehicle bottom out.	Unacceptable causing a reduction in speed (Example: open punch outs).
<b>Edges</b>	No repairs made.	Minor drop-offs (short lengths less than 50' and less than 2" deep) and/or all repaired.	Moderate drop-offs (short areas of less than 50' and 2" to 4" deep) Long areas of minor drop-offs. Not all repaired.	Unacceptable drop-offs > 50 feet in length and 2" to < 4" .	Unacceptable drop-offs > 4" .
<b>Shoulders</b>	Very good condition, no repairs made.	Pavement in good condition (few repairs) or very few repairs needed.	Pavement in fair condition (several repairs). Some minor repairs needed.	Pavement in poor condition, major repairs needed.	Pavement is coming apart.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Component - Traffic Operations</b>					
<b>Raised Pavement Markers</b>	Markers like new with none missing. Placed on standard placement.	Most in place, may have a few missing or obviously non-reflective cracked or pressed into adhesive.	Most in place, maximum of 10% missing or obviously non-reflective, cracked or pressed into adhesive or adhesive over reflective face.	Many missing, maximum of <25% missing or obviously non-reflective, cracked or pressed into adhesive or adhesive over reflective face.	Most >25% missing or non-reflective or no markers installed.
<b>Large Signs</b> (Installed on I or H beams or sign bridge)	Signs like new, with all back ground, lettering, borders and shields clean and reflective. No damage.	Signs generally good; background, lettering, borders and shields may be slightly faded. May have very minor damage.	Signs borderline acceptable; background, lettering, borders and shields may be slightly faded or mildewed. May have some damage.	Signs unacceptable with dirt or mildew. May be faded or have substantial damage. May have one or two high or low bases.	Signs totally unacceptable with severe dirt, mildew or fading. May be damaged or totally knocked down. Several bases are high or low.



**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Small Signs</b> (Chevron are signs)	Signs like new, on standard posts, no repairs needed. All straight.	All on standard supports. Very minor repairs needed. All required signs are in place. No high or low bases. Most are straight.	All on standard supports, < 50% leaning or with dirty, damaged or bad sign faces. No high or low bases.	All on standard supports, most leaning or dirty, damaged or bad sign faces. One non-regulatory sign may be missing. Some may have high or low bases.	Signs not on standard supports or any regulatory sign missing or more than one other sign missing. Most all are leaning or have bad or damaged sign faces.
<b>Striping Graphics</b>	New or like new. All required graphics are in place and like new.	Stripes in very good shape with no obvious loss of reflectivity. All required graphics are in good condition.	Stripes in acceptable shape with some cracking or minor loss of reflectivity. May have crack seal slightly obscuring some stripe. Required graphics are present.	Stripes unacceptable with cracking, fading, or severely worn. May be substantially covered with crack seal material. Needs to be replaced. Graphics are missing.	Stripes totally unacceptable with severe cracking, fading or severely worn. Major loss of reflectivity. ANY road without a stripe.

**Table 2: Asset Condition Scoring System**

<b>Maintenance Element</b>	<b>Perfect 5</b>	<b>Above Average 4</b>	<b>Average 3</b>	<b>Below Average 2</b>	<b>Poor 1</b>
<b>Attenuator</b>	New or like new to current standards with no damage.	Attenuator not damaged; may not be latest standard.	Attenuator functional but with very minor damage. May need painting.	Attenuator with moderate damage, but will still function as designed.	Attenuator that will not function as designed.
<b>Delineators</b> (OM3 or delineators)	Delineators, new or like new, straight, installed in accordance with standards. No repairs needed.	Delineators posts <50% slightly leaning or with some damaged and non-reflective delineators.	Delineators <50% slightly leaning and <50% delineators damaged or non-reflective, or most post slightly leaning, or most delineators non reflective.	Most post slightly leaning and delineators non reflective or one or two post bent, broken, down or missing.	Several bent, broken damaged or missing. Not installed in accordance with standards.
<b>Shoulder Texturing</b> Required on rural 4 lane divided (does not include inside the city limits)	Texturing in place like new.	May have in countered sealcoat not as effective as new. Profile Striping flattened down.	Seal over or patched over with level up, mill and inlay taking away effectiveness.	Most of texturing mill or patched over non-effective.	Missing on 4 lane divided.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Component - Roadside</b>					
<b>Vegetation Management</b>	Vegetation recently mowed or of uniform height. No noxious weeds. No grass in pavement. May contain "non-mow" areas.	Vegetation generally good, of uniform height and with very little noxious weeds, May have obvious signs of herbicide application. May contain "non-mow" areas.	Vegetation acceptable. May have some small stands of Johnson grass or other noxious weeds. Or have short areas of grass in pavement. No sight distance problems. May contain "non-mow" areas.	Vegetation needs mowing with large stands of Johnson grass or other noxious weeds or have grass along edge of pavement or in some cracks. May have minor sight distance problems.	Vegetation unacceptable with large stands of Johnson grass or other noxious weeds. May have severe sight distance problems. Grass is over one foot into edge of pavement.
<b>Litter</b>	Project ROW clean with no or very minor litter. Litter not visible at posted speed limit.	Project ROW generally clean with only a few pieces of litter or debris visible at posted speeds.	Project ROW acceptable with one or two objectionable spots of litter or debris. Several single pieces of litter, or debris.	Project ROW unacceptable, with much litter or debris.	Project ROW totally unacceptable with large quantities of litter or debris.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<p><b>Sweeping</b> (Rate as needed)</p>	<p>Clean, no dirt debris or ice rock along curbs, turn lanes, or barriers.</p>	<p>Very minor dirt, ice rock, or debris along curbs, turn lanes, or barriers.</p>	<p>Some debris, dirt or minor ice rock along curbs, turn lanes or barriers.</p>	<p>Substantial quantities of dirt, debris and/or ice rock built up along barriers, turn lanes, or curbs. May cause minor drainage problem.</p>	<p>Debris built up along curbs, or turn lanes that would cause a hazard or drainage problem.</p>
<p><b>Trees and Brush</b></p>	<p>Trees trimmed to allow mowing beneath. No sight restrictions or sign obstructions. Project ROW neat. No trees in clear zone.</p>	<p>Trees generally trimmed. No sight restrictions or sign obstructions. May have some minor brush or trees in need of trimming.</p>	<p>Trees and brush may have substantial growth. No sight restrictions or sign obstructions. May have a few trees within clear zone.</p>	<p>Trees and brush un-kept. Tree limbs encroaching onto pavement or large trees &gt; 5" within clear zone. May have sight restrictions or sign obstructions.</p>	<p>Trees and brush un-kept. Tree limbs encroaching onto travel lanes or large trees &gt; 5" within clear zone. Has sight restrictions and/or sign obstructions.</p>

**Table 2: Asset Condition Scoring System**

<b>Maintenance Element</b>	<b>Perfect 5</b>	<b>Above Average 4</b>	<b>Average 3</b>	<b>Below Average 2</b>	<b>Poor 1</b>
<b>Drainage</b>	Ditches and channels like originally constructed, clear of silt or erosion. Vegetation as appropriates in ditches. No high shoulders.	Ditches and channels like originally constructed may have minor silt or erosion. Vegetation as appropriates in ditches. Minor spots of high shoulders.	Ditches and channels like originally constructed, may have some silt or erosion (pipes 50% full). Vegetation as appropriates in ditches. Several areas of high shoulders.	Substantial erosion or siltation in ditches or channels. Does not function as designed. Potential exists for additional erosion. High shoulders may trap water on pavement. Washouts around culverts, bridges and etc.	Extreme erosion or siltation in ditches or channels. Does not function as designed. Potential exists for additional erosion. Erosion has created a safety hazard. High shoulders may trap water in travel lanes.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Encroachments Access Control</b>	No illegal signs, buildings, vehicles, etc. Encroaching on Project ROW. No apparent or frequent access control violations.	May have a few illegal signs, buildings, or vehicles slightly encroaching onto Project ROW. Does not cause a safety problem. May have very minor or infrequent access control violations.	May have illegal signs, buildings or vehicles encroaching onto Project ROW. They should not cause a safety problem, however it is apparent they have been there for a long period of time. May have one minor access control violation.	Has illegal signs, buildings or vehicles encroaching onto Project ROW. They are causing a safety problem and should be removed. May have one obvious access control violation.	Has illegal signs, buildings or vehicles encroaching onto Project ROW. They are causing a safety problem and should be removed. Has more than one obvious access control violation.

**Table 2: Asset Condition Scoring System**

<b>Maintenance Element</b>	<b>Perfect 5</b>	<b>Above Average 4</b>	<b>Average 3</b>	<b>Below Average 2</b>	<b>Poor 1</b>
<b>Guardrail</b> (Rate as needed)	Guardrail like new, appropriately placed, installed to the latest standards.	Guardrail all functional. May have one minor dent or may not be the latest standard.	Guardrail all functional with several minor dents or out of alignment.	Guardrail has been hit and is not functional. Guardrail has standup ends instead of turn down or turn down instead of Guardrail End Treatment (GET). Guardrail is low.	Guardrail has major damage and should be repaired as soon as possible. Guardrail is required and not installed at bridge ends.
<b>Guardrail End Treatments (“GETs”)</b> Does not include turndowns	GETs like new, in correct alignment and installed properly.	GETs still aligned properly may have minor damage to object markers	GET has minor damage but still functional.	GET damaged, not functional, needs repairs.	GET has major damage, needs replacement.

**Table 2: Asset Condition Scoring System**

Maintenance Element	Perfect 5	Above Average 4	Average 3	Below Average 2	Poor 1
<b>Mailboxes</b>	Mailboxes straight, all on standard supports and hardware, with standard delineation.	Mailboxes all on standard supports and hardware, with standard delineation. Some leaning.	Mailboxes all on standard supports and hardware. Many leaning, some may not have standard delineation.	One or two mailboxes on nonstandard supports. Most other boxes are too standard. Missing or incorrect delineation.	Several mailboxes on non-standard supports, some are safety problems, most other not to standard.
<b>Component - Bridges (Including approach slabs)</b>					
<b>Joints</b>	Joints are clean and seals have no damage.	Joints or seals have 10% damage or debris.	Joints or seals have 20% damage or debris.	Joints are 30% dirty and seals are 20% damaged.	Joints are 50%, or more, dirty and/or seals are 30%, or more, damaged.
<b>Curbs, sidewalks, railing</b>	Like new, no damage or vegetative encroachment.	All functional. May have minor damage, but not considered structural.	Minor damage, but still functional with minor vegetative encroachment.	Damaged and not functional needs repairs. Vegetation encroachment indicating lack of maintenance.	Major damage needs replacing/repair. Excessive vegetative encroachment.
<b>Drains</b>	Clean and functioning properly.	Minor visible debris and functioning properly.	Visible minor debris at inlet and functioning properly.	Visible debris at inlet with limitations on proper function.	Clogging present and not functioning.



**Table 2: Asset Condition Scoring System**

<b>Maintenance Element</b>	<b>Perfect 5</b>	<b>Above Average 4</b>	<b>Average 3</b>	<b>Below Average 2</b>	<b>Poor 1</b>
<b>Debris</b>	No debris or ice rock on deck, caps, or around columns	Very minor debris or ice rock on deck, caps, and/or around columns.	Some debris, dirt or minor ice rock on deck, caps and/or around columns.	Substantial quantities of dirt, debris and/or ice rock on deck, caps, or around columns.	Debris built up causing a hazard or drainage problem.
<b>Channel</b>	Streambed & embankment are clean & free of obstructions. No presence of scour.	No erosion or obstructions. Channel protection system(s) functioning properly. Trees not encroaching. No vegetation in riprap.	Minor erosion and obstructions visible. Trees and vegetation present, but not obstructing drainage, encroaching or catching debris. No scour.	Erosion, scour and obstructions need correcting. Trees and vegetation present and obstructing drainage, encroaching or catching debris.	Undermining of footings/channel protection system and/or obstruction of channel.

**Table 3: Sample Audit Inspection Asset Condition Scoring**

Component <sup>1</sup>	Maintenance Element	Audit Inspection Scores												Average	Maintenance Element Score <sup>2</sup>	Weighted Factor <sup>5</sup>	Maintenance Element Composite Score <sup>3</sup>
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12				
Pavement	Rutting	5	4	4	4	5	4	5	4	4	5	4	4	4.33	86.7%	9	7.80
	Cracking	4	5	5	4	5	5	4	3	4	5	4	4	4.33	86.7%	10	8.67
	Failures	4	4	5	4	5	4	5	5	5	4	5	3	4.42	88.3%	11	9.72
	Ride	4	4	4	5	4	5	4	5	4	5	4	4	5.00	100.0%	6	6.00
	Edges	5	4	5	4	4	4	5	4	5	4	5	4	4.42	88.3%	7	6.18
	Shoulders	4	4	4	4	5	3	5	3	4	4	4	4	4.00	80.0%	7	5.60
Component Score <sup>4</sup>																87.9%	
Traffic Operations	Raised Pavement Markers	4	4	4	3	4	4	4	3	4	4	4	4	3.83	76.7%	3	2.30
	Signs - Large		4	4	4		5	4	5	4	4	4		4.22	84.4%	3	2.53
	Signs - Small			3	4	3	4	4	4	4	4	3	4	3.70	74.0%	3	2.22

**Table 3: Sample Audit Inspection Asset Condition Scoring**

Component <sup>1</sup>	Maintenance Element	Audit Inspection Scores												Average	Maintenance Element Score <sup>2</sup>	Weighted Factor <sup>5</sup>	Maintenance Element Composite Score <sup>3</sup>
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12				
	Striping, Pavement Graphics	5	4	4	5	4	4	4	5	4	4	5	4	4.33	86.7%	5	4.33
	Attenuators	4	4	3		5		5	4	4	3	4	5	4.10	82.0%	3	2.46
	Delineators	4	4	4	3	4	5	5	4	5	5	5	5	4.42	88.3%	2	1.77
	Shoulder Texturing	3	3	4	4	3	4	5	5	4	4	4	4	3.92	78.3%	1	0.78
Component Score <sup>4</sup>																	82.0%
Roadside	Vegetation Management	3	3	2	2	2	2	2	2	3	3	3	3	2.50	50.0%	2	1.00
	Litter	3	3	3	3	3	4	3	3	3	3	3	3	3.08	61.7%	1	0.62
	Sweeping	3	3	3	3	4	4	4	4	4	4	4	4	3.67	73.3%	1	0.73
	Trees and Brush	4	4	4	5	5	4	5	4	5	4	5	4	4.42	88.3%	1	0.88
	Drainage	3	4	4	4	4	4	4	4	4	4	3	4	3.83	76.7%	3	2.30
	Encroachments	5	5	5	5	5	5	5	5	5	5	5	5	5.00	100.0%	1	1.00
	Guardrails	4	4			3	3	4	4	4	4	4	3	3.70	74.0%	3	2.22

**Table 3: Sample Audit Inspection Asset Condition Scoring**

Component <sup>1</sup>	Maintenance Element	Audit Inspection Scores												Average	Maintenance Element Score <sup>2</sup>	Weighted Factor <sup>5</sup>	Maintenance Element Composite Score <sup>3</sup>
		#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12				
	Guardrail End Treatments	4	4			4	3	4	4	5	4	4	4	4.00	80.0%	2	1.60
	Mailboxes	4												4.00	80.0%	1	0.80
Component Score <sup>4</sup>																	74.4%
<b>Bridges</b>	Joints	5	4	5	4	5	4	5	5	5	4	5	5	4.67	93.3%	5	4.67
	Curbs, sidewalks, railing	5	5	4	4	4	4	5	5	5	5	5	5	4.67	93.3%	3	2.80
	Drains	4	4	4	4	4	4	4	4	4	4	4	4	4.00	80.0%	2	1.60
	Debris	4	4	4	4	4	4	4	4	4	4	4	4	4.00	80.0%	2	1.60
	Channel	4				4	4			4			4	4.00	80.0%	3	2.40
Component Score <sup>4</sup>																	87.1%
Overall Score <sup>6</sup>																	84.6%

Notes:

1. Weight of Components - Pavement (50%), Traffic Operations (20%), Roadside (15%), Bridges (15%)
2. Maintenance Element Score - Average of Audit Inspection Scores for the Maintenance Element/Maximum achievable score of (5)
3. Maintenance Element Composite Score – Maintenance Element Score X Weighted Factor
4. Component Score = Sum of Maintenance Element Composite Scores/Sum of Weighted Factors
5. If there are no ratings for a Maintenance Element then the multiplier will not be included in the Component calculation
6. Overall Score = Summary of Component Score X Weight of Components

**Table 3: Sample Audit Inspection Asset Condition Scoring**

		Audit Inspection Scores															
Component <sup>1</sup>	Maintenance Element	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	Average	Maintenance Element Score <sup>2</sup>	Weighted Factor <sup>5</sup>	Maintenance Element Composite Score <sup>3</sup>

### **0260 Hazardous Materials Management Plan (HMMP)**

Maintenance Contractor shall prepare a HMMP for the safe handling, storage, treatment and/or disposal of Hazardous Materials, whether encountered at or brought onto the Project by the Maintenance Contractor, encountered or brought onto the Project by a third party, or otherwise, during the Maintenance Term. Maintenance Contractor shall submit the final HMMP to TxDOT for review and approval in its good faith discretion within 60 days after issuance of Maintenance NTP1; approval of the HMMP by TxDOT shall be a condition of commencement of Maintenance Services.

The HMMP shall provide the identification and contact information for designated responsible individuals in the management of Hazardous Materials, include procedures compliant with all applicable Environmental Laws and include, at a minimum:

- a) Procedures for updating Material Safety Data Sheets, per OSHA requirements, for all chemicals used on the Project for the Maintenance Term;
- b) Designated individuals responsible for implementation of the plan;
- c) Procedures for identifying and documenting potential contaminated sites which might impact the Project or its operations or maintenance;
- d) Procedures for mitigation of contamination during the operation and maintenance of the Project;
- e) Procedures for developing a detailed spill response plan for the Maintenance Term;
- f) Processes for training personnel for responding to and mitigating Incidents involving contamination or waste;
- g) Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project for the Maintenance Term;
- h) Provisions for a Hazardous Materials training module; and
- i) Procedures for preparing an investigative work plan and site investigative report in the event that Hazardous Materials are discovered during operations or maintenance activities.
- j) Procedures for ensuring that all applicable certifications, licenses, authorizations and Governmental Approvals for Maintenance Contractor personnel handling Hazardous Materials are current and valid through the duration of the Maintenance Term.

The HMMP shall include provisions for making all on-Site workers of Maintenance Contractor-Related Entities aware of and able to recognize the potential Hazardous Materials to which they may be exposed, limiting Maintenance Contractor's workers' exposure to Hazardous Materials and providing all necessary personal protection equipment to protect workers from exposure. The HMMP shall require Maintenance Contractor to provide any non-Maintenance Contractor personnel who visit the Project with the appropriate personal protection equipment.

The HMMP shall require that all personnel of Maintenance Contractor-Related Entities handling Hazardous Materials be trained and certified at least to the minimum requirements established under the current guidelines of OSHA 1910. 120 (HAZWOPER Training).

### **0270 Environmental Compliance and Mitigation Plan (ECMP)**

Maintenance Contractor shall prepare an ECMP to document and fully detail compliance strategies and procedures to be employed in accordance with the requirements of applicable Environmental Laws and Environmental Approvals. Maintenance Contractor shall submit the

final ECMP to TxDOT for review and approval in its good faith discretion within 60 days after issuance of Maintenance NTP1; approval of the ECMP by TxDOT shall be a condition of commencement of Maintenance Services. The ECMP shall provide, at a minimum:

- a) Procedures for maintaining the environmental commitments required to verify that any discharge from the Project into a sanitary sewer system complies with appropriate codes and standards of the sanitary sewer owner;
- b) Procedures for identifying and mitigating any potential traffic noise caused by conducting Maintenance Services;
- c) Procedures for providing all other environmental monitoring within the Site and submitting 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; and
- d) Procedures for training personnel to avoid or take appropriate action to minimize environmental impacts caused by conducting Maintenance Services.

Maintenance Contractor shall meet the environmental requirements of Section 4 of the Technical Provisions during the performance of Renewal Work activities.

## **TRAFFIC MANAGEMENT**

### **1100 General Requirements**

Throughout the Maintenance Term, Maintenance Contractor shall conform with the requirements set forth herein, and shall provide for the safe and efficient movement of people, goods, and services, through and around the Project, while minimizing negative impacts to Users, residents, and businesses.

While planning and carrying out Maintenance Services, Maintenance Contractor shall take into account the restrictions (if any) set forth in Attachment 6 to this Maintenance Specification and shall coordinate its Traffic Management Plan (TMP) with the traffic management to be performed by others to minimize disruption to Users of the Project.

### **1110 (Not Used)**

### **1120 Traffic Management and Control Plans**

Within 60 days after issuance of Maintenance NTP1, Maintenance Contractor shall submit to TxDOT for approval a comprehensive traffic plan (“Traffic Management Plan” or “TMP”) that is consistent with and expands upon the preliminary Traffic Management Plan submitted with the Proposal. The TMP shall be implemented, maintained and used throughout the Maintenance Term. At a minimum, the TMP shall include the following:

- Descriptions of the qualifications and duties of the traffic engineering manager, traffic control coordinator, and other personnel with traffic control responsibilities;
- Procedures to identify and incorporate the needs of transit operators, Utility Owners, Governmental Entities, local governmental agencies, Emergency Service providers, school districts, business owners, and other related Users, Customer Groups and stakeholders in the Project corridor and surrounding affected areas;
- Procedures for obtaining acceptance of detours, road and Lane Closures and other traffic pattern modifications from applicable Governmental Entities, stakeholders, and

adjacent sections of roads and adjacent landowners, and implementing, maintaining and removing those modifications;

- Procedures for installation, maintenance and removal of interim signing and the corresponding handling of permanent signing during maintenance operations;
- Procedures for installation, maintenance, replacement and removal of traffic control devices, including pavement markings and traffic barriers, if used;
- Procedures and process for the safe ingress and egress of construction vehicles in the work zone;
- Provisions to provide continuous access to established truck routes and Hazardous Material routes, and to provide suitable detour routes, including obtaining any approvals required by the appropriate Governmental Entities for these uses;
- Procedures to modify plans as needed to adapt to changing Project circumstances;
- Procedures to communicate TMP information to Maintenance Contractor's public information personnel and notify the public of maintenance of traffic issues; and
- Descriptions of contact methods, personnel available, and response times for any Emergency conditions requiring TxDOT attention outside of regular working hours.

Within 30 days after TxDOT's approval of the Traffic Management Plan, Maintenance Contractor shall prepare and submit, for TxDOT's review, traffic control plans as described herein. Each traffic control plan shall be submitted to TxDOT for review a minimum of 10 Days prior to implementation. The Authority shall have the right to conduct a concurrent review of the traffic control plans.

Maintenance Contractor shall use the procedures in the TMP and the standards of the TMUTCD to develop detailed traffic control plans that provide for all Maintenance Services, as well as all required switching procedures. The traffic control plans shall include details for all detours, traffic control devices, striping, and signage applicable to each maintenance activity. Information included in the traffic control plans shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop off conditions, and temporary drainage. The traffic control plans shall clearly designate all temporary reductions in speed limits. Changes to posted speed limits will not be allowed unless specific prior approval is granted by TxDOT.

### **1130 Traffic Operation Restrictions**

Maintenance Contractor shall keep the number of Lane Closures to an absolute minimum and shall keep each Lane Closure to the shortest time necessary for safe and efficient operations and in accordance with Attachment 6. If Maintenance Contractor violates such requirements and restrictions, Maintenance Contractor shall be subject to Lane Rental Charges for Lane Closures in accordance with Section 12.5 of the COMA.

Maintenance Contractor shall ensure that opposing traffic on a normally divided roadway shall be separated with appropriate traffic control devices, shall maintain signing continuity within the project and intersecting streets at all times, and shall ensure all streets and intersections remain open to traffic to the greatest extent possible.

Maintenance Contractor shall maintain access to all adjacent streets and shall provide for ingress and egress to public and private properties at all times.



### **1140 Construction Requirements**

Traffic control during construction shall be in accordance with Maintenance Contractor's TMP, the manufacturer's directions or recommendations where applicable, and the applicable provisions of the TMUTCD.

Maintenance Contractor shall provide TxDOT the names of the traffic control coordinator and support personnel, and the phone number(s) where they can be reached 24 hours per day, seven days per week.

Maintenance Contractor shall maintain existing bicycle and pedestrian access and mobility with the frontage roads and across all cross streets. Maintenance Contractor shall maintain reasonable and safe access to existing transit stop locations during construction or reasonable alternative locations shall be provided.

Maintenance Contractor shall maintain all detours in a safe and traversable condition. Maintenance Contractor shall provide a pavement transition at all detour interfaces, suitable for the posted speed of the section.

### **1150 Public Information and Communications**

It is vital to the success of the Project that TxDOT and the Maintenance Contractor gain and maintain public support. The public will better support TxDOT and the Maintenance Contractor if they are kept abreast of Project information in a timely manner, are notified in advance of potential impacts, have an opportunity to identify issues and recommend solutions, receive timely and appropriate feedback from the Maintenance Contractor, and perceive a high quality, well executed communications plan for keeping them informed, engaged, and educated.

Maintenance Contractor shall provide information within 24 hours of a request by TxDOT, such that TxDOT may communicate such information to interested parties.

Maintenance Contractor shall meet the requirements of Section 3 of the Technical Provisions during the performance of Renewal Work activities.

### **1160 Additional Requirements**

If at any time TxDOT determines Maintenance Contractor's traffic control operations do not meet the intent of the TMP or any specific traffic control plan, Maintenance Contractor shall immediately revise or discontinue such operations to correct the deficient conditions.

### **1161 Rail**

Should the Project cross a railroad ROW owned by an operating railroad, Maintenance Contractor shall coordinate the Maintenance Services with the operating railroad and shall be responsible for obtaining the required approvals, permits, and agreements as required for the Maintenance Services, including any railroad related Maintenance Services.

Whenever an agreement for construction, maintenance and use of railroad right-of-way between the operating railroad and TxDOT is required, Maintenance Contractor shall prepare all the documentation required to obtain the agreement, including preparation of the agreement application on behalf of TxDOT, the drawings and specifications, making necessary modifications as required, and preparation of the agreement. Maintenance Contractor shall submit the draft agreement to TxDOT for transmittal to the operating railroad. After all comments have been incorporated or satisfactorily resolved by Maintenance Contractor, the operating railroad and TxDOT, Maintenance Contractor shall submit a complete and final agreement to TxDOT for execution.

Maintenance Contractor shall arrange with the operating railroad for railroad flagging as required. Maintenance Contractor shall comply with the operating railroad's requirements for contractor safety training prior to performing Maintenance Services or other activities on the operating railroad's property.

Maintenance Contractor shall cooperate and coordinate with all operating railroads for access by the operating railroad and/or their agents to the rail right-of-way as necessary for rail maintenance and operations activities.

Maintenance Contractor shall procure and maintain railroad insurance in accordance with Exhibit 10 of the COMA.

Maintenance Contractor shall comply with all construction requirements and specifications set forth by the operating railroad.

Maintenance Contractor shall be responsible for scheduling the work to be completed by the operating railroad as well as the work to be performed by its own forces. Maintenance Contractor shall be responsible for all costs associated with the railroad work, including the operating railroad's charges for the work performed by its own forces.

### **1162 Aesthetics and Landscape**

TxDOT and Maintenance Contractor acknowledge that installation and maintenance of landscape, in excess of the minimum landscaping necessary for erosion control, is not included in the current scope of Maintenance Services. However, if a structural or natural failure of the embankment or cut slope occurs in a landscaped area during the Maintenance Term, the Maintenance Contractor shall be responsible to install the minimum landscape necessary for erosion control.