

Texas Department of Transportation

BOOK 2 – TECHNICAL PROVISIONS

FOR

US 181 HARBOR BRIDGE PROJECT

DESIGN-BUILD PROJECT

ATTACHMENT 19-1

BASELINE PERFORMANCE AND

MEASUREMENT TABLE NEW HARBOR BRIDGE

ATTACHMENT 19-1: PERFORMANCE AND MEASUREMENT TABLE BASELINE FOR NEW HARBOR BRIDGE

ELEMENT CATEGORY	ELEMENT	PERFORMANCE REQUIREMENT	DEFECT REMEDY PERIOD			INSPECTION AND MEASUREMENT METHOD	MEASURE-MENT REF	MEASUREMENT RECORD	TARGET
			Cat 1	Cat 1	Cat 2				
			Hazard Mitigation	Permanent Remedy	Permanent Repair				
1) ROADWAY						<i>Unless stated otherwise, measurements shall be conducted using procedures, techniques, and measuring equipment consistent with TxDOT's Pavement Management Information System Rater's Manual.</i>			
1.1	Obstructions and debris	Roadway and clear zone free from obstructions and debris	2 hrs	NA	NA	Visual Inspection	1.1.1	Number of obstructions and debris	Nil
1.2	Pavement	All roadways have a smooth and quiet surface course (including bridge decks, covers, gratings, frames and boxes) with adequate skid resistance and free from Defects.	24 hrs	28 days	6 months	a) Ruts – Mainlanes, shoulders & ramps Depth as measured using an automated device in compliance with TxDOT Standards. 10ft straight edge used to measure rut depth for localized areas. b) Ride quality c) Failures Instances of failures exceeding the failure criteria set forth in the TxDOT PMIS Rater's Manual, including potholes, base failures, punchouts and jointed concrete pavement failures d) Edge drop-offs Physical measurement of edge drop-off level compared to adjacent surface	1.2.1	Percentage of wheel path length with ruts greater than ¼" in depth in each Performance Section	
							1.2.2	• Mainlanes, shoulders and ramps - 3%	Nil
							1.2.3	Depth of rut at any location greater than ½"	Nil
								NOT USED	
							1.2.4	Individual discontinuities greater than 1/4"	Nil
							1.2.5	Occurrence of any failure	Nil
1.2.6	Number of instances of edge drop-off greater than 2"	Nil							
1.2	Pavement	Road users warned of potential skidding hazards	24 hrs	28 days	6 months	e) Skid resistance ASTM E 274 Standard Test Method for Skid Resistance Testing of Paved Surfaces at 50 MPH using a full scale smooth tire meeting the requirements of ASTM E 524	1.2.7	• Performance Sections with skid numbers for 0.5-mile section of mainlines, shoulders and ramps exceeding 30 and for which investigations as to potential risk of skidding accidents and appropriate remedial actions have been taken.	100%
							1.2.8	• Performance Sections with skid numbers for 0.5-mile section of frontage roads exceeding 30 and for which investigations as to potential risk of skidding accidents and appropriate remedial actions have been taken.	100%
							1.2.9	• When the skid number is below 25 and/or when a site is categorized by TxDOT in accordance with the Wet Weather Accident Reduction Program, as a Wet Weather Accident Site, Developer shall perform a site investigation and perform required corrective action.	100%
							1.2.10	Instances where road users are warned of a potential skidding hazard where corrective action is required following the categorization as a Wet Weather Accident Reduction Site.	100%
1.3	Crossovers and other paved areas	Crossovers and other paved areas are free of Defects	24 hrs	28 days	6 months	a) Potholes b) Base failures	1.3.1	Number of potholes of low severity or higher	Nil
							1.3.2	NOT USED	Nil
1.4	Joints in concrete	Joints in concrete paving are sealed and watertight	24 hrs	28 days	6 months	Visual inspection of joints	1.4.1	Length of unsealed joints greater than ¼"	Nil
		Longitudinal joint separation is controlled				Measurement of joint width and level difference of two sides of joints	1.4.2	Joint width more than 1" or faulting more than ¼"	Nil
1.5	Curbs	Curbs are in good alignment and free of Defects	24 hrs	28 days	6 months	Visual inspection	1.5.1	Continuous curb lengths where more than 10% of the length has defects such as cracks and chips	Nil
						Physical measurement	1.5.2	Continuous curb lengths where more than 5% of the length has a separation exceeding 0.25" between curb face and adjacent roadway surface	Nil
						Survey and 10' straight edge	1.5.3	Continuous curb lengths where more than 5% of the length has either the top or face of curbs exceeding 0.5" from intended design alignment	Nil

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1.6	Maintenance/Access Roads	Maintenance / access roads are free of Defects	24 hrs	28 days	6 months	Crown: Flat A shape or super-elevation with 4% cross slopes maintained to minimize ponding	1.6.1	Cross slope less than 3% or more than 6%	Nil
						Shoulder: Maintain slope away from the travel way and shoulder flush with travel way	1.6.2	Shoulder cross slope less than travel way cross slope; shoulder lower or higher than travel way	Nil
						Ditch: Maintain size and shape of ditch for proper drainage	1.6.3	Sides of ditches slumping or eroding, or obstructed by debris	Nil
						Ruts/potholes: Depth as measured using an automated device in compliance with TxDOT standards	1.6.4	Depth of ruts or potholes at any location greater than 1"	Nil
						Subgrade: Identify and repair any subgrade failures	1.6.5	Locations where subgrade failure is evident	Nil
2) DRAINAGE									
2.1	Pipes and Channels	Each element of the drainage system is maintained in its proper function by cleaning, clearing and/or emptying as appropriate 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	Length of pipe or channel in feet with less than 90% of cross sectional clear area, calculated as the arithmetic mean of the clear cross-sectional areas of individual 10 feet lengths of pipes and channels in each Performance Section.	Nil
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 on 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 by virtue of its position and depth.	24 hrs	28 days	6 months	Visual inspection of water on surface.	2.3.1	Number of instances of hazardous water build-up.	Nil
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 hrs	28 days	6 months	Visual inspection and records	2.4.1	Performance Sections with surface water discharge systems performing their proper function and discharging in compliance with the relevant legislation and permits.	100%
2.5	Protected Species	Named species and habitats are protected.	24 hrs	28 days	6 months	Visual inspection	2.5.1	Performance Sections with named species and habitats with protection of these named species and habitats.	100%
3) STRUCTURES									
3.1	Structures having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or springlines of arches or extreme ends of openings or multiple boxes	Substructures and superstructures are free of: <ul style="list-style-type: none"> • undesirable vegetation • debris and excessive bird droppings • blocked drains, weep pipes manholes and chambers • blocked drainage holes in structural components <ul style="list-style-type: none"> • defects in joint sealants • defects in pedestrian protection measure • scour damage • corrosion of rebar • paint system failures • impact damage 	24 hrs	28 days	6 months	Inspection and assessment in accordance with the requirements of federal National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways – Part 650, the TxDOT Bridge Inspection Manual, and the Federal Administration's Bridge Inspector's Reference Manual.		<i>Records as required in the TxDOT Bridge Inspection Manual</i>	
						As above	3.1.1	Occurrence of condition rating, in accordance with the TxDOT Bridge Inspection Manual, below seven for any deck, superstructure or substructure	Nil
						As above	3.1.2	Performance Sections with structure components with condition states of one, in accordance with the TxDOT Field Inspection Manual	100%

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3.2	Structure components	i) Expansion joints are free of: <ul style="list-style-type: none"> dirt debris and vegetation defects in drainage systems loose nuts and bolts defects in gaskets ii) The deck drainage system is free of all debris and operates as intended. iii) Parapets are free of: <ul style="list-style-type: none"> loose nuts or bolts blockages of hollow section drain holes vegetation accident damage iv) Bearings and bearing shelves are clean. Bearings allow for translation and rotation as designed. No presence of water exists on bearings and bearing seats. v) Sliding and roller surfaces are clean and greased to ensure satisfactory performance. Additional advice contained in bearing manufacturers' instructions is followed. vi) Special finishes are clean and perform to the appropriate standards. vii) 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.	24 hrs	28 days	6 months	Inspection and assessment in accordance with the requirements of federal National Bridge Inspection Standards (NBIS) of the Code of Federal Regulations, 23 Highways – Part 650, the TxDOT Bridge Inspection Manual, and the Federal Administration's Bridge Inspector's Reference Manual.	3.2.1	Occurrence of condition rating, in accordance with the TxDOT Bridge Inspection Manual, below seven for any deck, superstructure or substructure	Nil
						Visual inspection of Elements listed in (i) through (vii) of the general performance requirement column.	3.2.2	Instances of condition of any element not meeting general performance requirement as determined in accordance with Good Industry Practice.	Nil
3.3	Integral wearing surface	Integral wearing surface is in a structurally sound condition in which cracking and concrete cover to reinforcement is controlled to ensure durability	24 hrs	28 days	6 months	Concrete cover measured at [10ft] intervals	3.3.1	Occurrence of any instance where integral wearing surface thickness is less than [50%] of design value	Nil
						Cracks measured at [3 ft] intervals on the surface of the deck prior to 3 hours after sunrise at concrete age greater than 28 days	3.3.2	Instances of cracks wider than [0.025] inches	Nil
						De-lamination or spalling	3.3.3	Instances of de-lamination or spalling	Nil
3.4	Stay Cables	Stay cable system operates as intended including damping system (if any) and acoustic monitoring system.	24 hrs	28 days	NA	Visual and hands-on inspection	3.4.1	Instances of damage or deterioration of the corrosion protection system including coatings, protective pipes and anchorage units	Nil
							3.4.2	Instances of damaged or broken strand / wire	Nil
							3.4.3	Instances of stay cable damping system not operating as intended including failure to provide the minimum design level of damping	Nil
							3.4.4	Instances of stay cable acoustic monitoring system not operating as intended including failure to transmit measured information.	Nil
3.5	Inspection and access equipment	Inspection and access equipment is properly maintained including: <ul style="list-style-type: none"> Under-deck inspection systems such as maintenance travelers Fixed access and inspection platforms Access stairways and lift systems 	24 hrs	28 days	6 months	Visual and hands-on inspection	3.5.1	Instances of loose assemblies or nuts and bolts not fully tightened	Nil
							3.5.2	Instances of defects in surface protection such as failures of coating systems to bare metal or loss of galvanizing	Nil
							3.5.3	Instances of failures to conform with relevant standards for fixed and mobile inspection facilities, hoists and lifts	Nil
							3.5.4	Instances where maintenance traveler fails to operate smoothly under power or braking, has uneven or inconsistent movement of any driven component or exhibits binding or swaying, in each case in a manner that exceeds normal operational parameters.	Nil

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3.6	Ship impact protection system	The ship impact protection system (if any) including any fenders and exposed foundations shall be maintained such that it is able to perform its intended function	24 hrs	28 days	6 months	Visual inspection	3.6.1	Instances of marine boring (timber systems)	Nil	
							3.6.2	Instances of corrosion that would reduce the system resistance to below its intended design state	Nil	
							3.6.3	Instances of damage from vessel impact that would reduce the system resistance to below its intended design state or would cause a material reduction in the remaining service life	Nil	
3.7	Corrosion protection systems	Corrosion protection systems are intact and operating in line with design intent including: • Paint systems for steel • Concrete surface protection systems • Sacrificial protection systems Zinc metalizing	24 hrs	28 days	6 months	Visual inspection	3.7.1	Instances of failure of coating system down to bare metal or instances of repair / removal of overcoat that damages underlying metallized coating.	Nil	
							3.7.2	Loss of galvanizing	Nil	
							3.7.3	Damaged, blistered, cracked, delaminated or peeling material including any painted surface for which a color is specified that has changed color by more than 10 Delta-E CIE LAB units.	Nil	
							3.7.4	Noncompliance with manufacturer's recommendations for the maintenance and re-application of coatings	Nil	
3.8	Lightning Protection Systems	Lightning protection systems are intact and operating in line with design intent.	24 hrs	7 days	NA	Inspection and assessment in accordance with the requirements of Underwriters Laboratories, Inc. (UL) 96 and Lightning Protection Institute (LPI) 175.	3.8.1	Noncompliance with specified standards.	Nil	
							3.8.2	Instances of lightning protection system not operating as intended.	Nil	
3.11	Load Ratings	All structures maintain the design load capacity.	24 hrs	7 days	NA	Load rating calculations in accordance with the Manual for Bridge Evaluation and the TxDOT Bridge Inspection Manual and per the Technical Provisions	3.11.1	Number of structures with load restrictions for Texas legal loads (including legally permitted vehicles) in each Performance Section	Nil	
3.12	Access Points	All hatches and points of access have fully operational and lockable entryways.	24 hrs	28 days	6 months	Visual Inspection	3.12.1	Number with defects in locks or entryways	Nil	
3.14	Structural Surfaces	Vertical Surfaces free of graffiti, markings by vandalism.	24 hrs	28 days	6 months	Visual Inspection	3.14.1	Number of areas where graffiti is present	Nil	
4) PAVEMENT MARKINGS, OBJECT MARKERS, BARRIER MARKERS AND DELINEATORS										
4.1	Pavement markings	Pavement markings are: • clean and visible during the day and at night • whole and complete and of the correct color, type, width and length • placed to meet the TMUTCD and TxDOT's Pavement Marking Standard Sheets	24 hrs	28 days	6 months	a) Markings - General Portable retroreflector, which uses 30 meter geometry, meeting the requirements described in ASTM E 1710 Physical measurement	4.1.1	Percentage of total length of pavement marking in each Performance Section meeting the minimum retroreflectivity 175 med/sqm/lx for white	100%	
							4.1.2	Percentage of total length of pavement marking in each Performance Section meeting the minimum retroreflectivity 125 med/sqm/lx for white	100%	
							4.1.3	Length of pavement marking in each Performance Section with more than 5% loss of area of material at any point	Nil	
							4.1.4	Length of pavement marking in each Performance Section with spread more than 10% of specified dimensions.	Nil	
							b) Profile Markings			
							4.1.5	Percentage of total length of pavement marking in each Performance Section performing its intended function and compliant with relevant regulations	100%	

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4.2	Raised Reflective Markings	Raised reflective pavement markers are: • clean and clearly visible • of the correct color and type • reflective or retroreflective in accordance with TxDOT standards • correctly located, aligned and at the correct level • are firmly fixed • are in a condition that will ensure that they remain at the correct level.	24 hrs	28 days	6 months	Visual inspection	4.2.1	Number of markers associated with road markings that are ineffective in any 10 consecutive markers. (Ineffective includes missing, damaged, settled or sunk)	Nil
							4.2.2	A minimum of four markers are visible at 80' spacing when viewed under low beam headlights.	100%
							4.2.3	Uniformity (replacement raised reflective pavement markers have equivalent physical and performance characteristics to adjacent markers).	100%
4.3	Delineators and Markers	Object markers, mail box markers and delineators are: • clean and visible • of the correct color and type • legible and reflective • straight and vertical	24 hrs	28 days	6 months	Visual inspection	4.3.1	Number of object markers or delineators in each Performance Section that is defective or missing	Nil
5) GUARDRAILS, SAFETY BARRIERS AND IMPACT ATTENUATORS									
5.1	Guardrails and Safety Barriers	All guardrails, safety barriers, concrete barriers, etc. are maintained free of Defects, , and undesirable vegetation. They are appropriately placed and correctly installed at the correct height and distance from roadway or obstacles. Installation and repairs shall be carried out in accordance with the requirements of NCHRP 350 standards.	24 hrs	28 days	6 months	Visual inspection	5.1.1	Performance Sections with all guard rails and safety barriers appropriately placed and correction installed	100%
							5.1.2	Performance Sections with all guard rails and safety barriers free from defects	100%
							5.1.3	Performance Sections with all guard rails and safety barriers at correct heights	100%
							5.1.4	Performance Sections with all guard rails and safety barriers at correct distances from roadway obstacles	100%
5.2	Impact Attenuators	All impact attenuators are appropriately placed and correctly installed	24 hrs	28 days	6 months	Visual inspection	5.2.1	Performance Sections will all impact attenuators appropriately placed and correctly installed.	100%
6) TRAFFIC SIGNS									
6.1	General - All Gantry-Mounted overhead signs	i) Signs are clean, correctly located, clearly visible, legible, reflective, at the correct height and free from structural and electrical defects ii) Identification markers are provided, correctly located, visible, clean and legible iii) Visibility distances meet the stated requirements iv) Obsolete and redundant signs are removed or replaced as appropriate v) Sign information is of the correct size, location, type and wording to meet its intended purpose and any statutory requirements vi) All structures and elements of the signing system are kept clean and free from debris and have clear access provided. vii) All replacement and repair materials and equipment are in accordance with the requirements of the TMUTCD viii) Dynamic message signs are in an operational condition	24 hrs	28 days	6 months	a) Retroreflectivity Determination of Coefficient of retro-reflectivity	6.1.1	Number of signs with actual reflectivity below the requirements of TxDOT's TMUTCD in each Performance Section	Nil
						b) Face damage Visual inspection	6.1.2	Number of signs in each Performance Section with face damage greater than 5% of area	Nil
						c) Placement Visual inspection	6.1.3	All signs in each Performance Section are placed in accordance with TxDOT's Sign Crew Field Book including not twisted or leaning	100%
						d) Obsolete signs Visual inspection	6.1.4	Number of obsolete signs in each Performance Section	100%
						e) Sign Information Visual inspection	6.1.5	All sign information in each Performance Section is of the correct size, location, type and wording to meet its intended purpose	100%
						f) Dynamic Message Signs Visual inspection	6.1.6	Dynamic message signs are fully functioning	100%

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6.2	Gantries	Sign and signal mounting structures (including gantries) are structurally sound and free of: • defects in surface protection systems • loose nuts and bolts • graffiti	24 hrs	28 days	6 months	Visual inspection	6.2.1	Number with defects in surface protection system	Nil
							6.2.1	Number with loose nuts and bolts	Nil
							6.2.3	Number with graffiti	Nil
7) TRAFFIC SIGNALS (NOT PART OF MAINTAINED ELEMENTS)									
8) LIGHTING									
8.1	Roadway Lighting	i) All lighting is free from defects and provides acceptable uniform lighting quality ii) Lanterns are clean and correctly positioned iii) Lighting units are free from any damage or vandalism iv) Columns are upright, correctly founded, visually acceptable and structurally sound	24 hrs	28 days	6 months	a) Mainlane lights operable Night time inspection or automated logs	8.1.1	Performance Sections with less than 90% of lights functioning correctly at all times	Nil
						b) Mainlane lights out of action Night time inspection or automated logs			
8.2	Sign Lighting	Sign lighting is fully operational	24 hrs	28 days	6 months	Night time inspection or automated logs	8.2.1	Number of instances of more than one bulb per sign not working in each Performance Section	Nil
8.3	Electrical Supply	Electricity supply, feeder pillars, cabinets, switches and fittings are electrically, mechanically and structurally sound and functioning	24 hrs	7 days	28 days	Testing to meet NEC regulations, visual inspection	8.3.1	Inspection records showing safe installation and maintenance in each Performance Section	Nil
8.4	Access Panels	All access panels in place at all times.	24 hrs	7 days	28 days	Visual Inspection	8.4.1	Number of instances of missing or damaged access panels in each Performance Section	Nil
8.5	High Mast Lighting	NOT USED				NOT USED			
8.6	Navigational Lighting	Navigational lighting is fully operational	24 hrs	7 days	28 days	Night time inspection or automated logs	8.5.1	Number of instances of more than one bulb per sign not working in each Performance Section	Nil
8.7	Architectural Lighting	All architectural lighting is functioning in accordance with the original design requirements and specifications			28 days	Night time inspection or automated logs	8.6.1	Instances of architectural lighting with more than 10% of lamps not functioning	Nil
8.8	Bridge Inspection Lighting	All bridge inspection lighting is functioning in accordance with original design requirements and specifications	24 hrs	7 days	28 days	Night time inspection or automated logs	8.7.1	Instances of bridge inspection lighting where failures could adversely impact safety or security of inspections or access	Nil
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 (NOT USED)									
13) ITS EQUIPMENT									
13.1	ITS Equipment - Maintenance	All ITS equipment is fully functional and housing is functioning and free of defects. i) All equipment and cabinet identification numbers are visible, sites are well drained and access is clear. ii) Steps, handrails and accesses are kept in a good condition. iii) Access to all communication hubs, ground boxes, cabinets and sites is clear. iv) All drainage is operational and all external fixtures and fittings are in a satisfactory condition. v) All communications cable markers, cable joint markers and duct markers are visible and missing markers are replaced. vi) Backup power supply system is available at all times	24 hrs	14 days	28 days	Visual Inspection	13.1.1	Inspection records showing compliance with requirements for maintenance of ITS equipment in each Performance Section.	100%

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13.2	Dynamic Message Sign Equipment	Dynamic Message Signs are free from faults such as: i) Any signal displaying a message which is deemed to be a safety hazard. ii) Failure of system to clear sign settings when appropriate. iii) 2 or more contiguous sign failures that prevent control office setting strategic diversions. iv) Signs displaying an incorrect message.	2 hrs	24 hrs	14 days	Defect measurement dependent on equipment	13.2.1	Inspection records showing compliance with requirements for Dynamic Message Signs in each Performance Section	100%	
13.3	CCTV Equipment	CCTV Systems are free from serious faults that significantly limit the availability of the operators to monitor the area network, such as: i) Failure of CCTV Systems to provide control offices with access and control of CCTV images. ii) Failure of a CCTV camera or its video transmission system. iii) Failure of a Pan / Tilt unit or its control system. iv) Moisture ingress onto CCTV camera lens. v) Faults that result in significant degradation of CCTV images.	2 hrs	24 hrs	14 days	Defect measurement dependent on equipment	13.3.1	Inspection records showing compliance with requirements for CCTV equipment in each Performance Section	100%	
13.4	Vehicle Detection Equipment	All equipment free of defects and operational problems such as: i) Inoperable loops. ii) Malfunctioning camera controllers.	2 hrs	24 hrs	28 days	Defect measurement dependent on equipment	13.4.1	Inspection records showing compliance with requirements for vehicle detection equipment in each Performance Section	100%	
							13.4.2	Traffic Detector Loop circuit's inductance to be > 50 and < 1,000 micro henries.	100%	
							13.4.3	Insulation resistance to be > 50 meg ohms.	100%	
14) TOLLING FACILITIES AND BUILDINGS (NOT USED)										
15) AMENITY (NOT USED)										
16) SNOW AND ICE CONTROL										
16.1	Travel lanes	Maintain travel way free from snow and ice.	2 hrs	NA	NA	Maximum 1hr response time to complete manning and loading of spreading vehicles.	16.1.1	Inspection records showing compliance with requirements for snow and ice control in each Performance Section	100%	
							16.1.2	Maximum 2hrs from departure from loading point to complete treatment and return to loading point.	Inspection records showing compliance with requirements for snow and ice control in each Performance Section	100%
							16.1.3	Maximum 1hr response time for snow and ice clearance vehicles to depart from base.	Inspection records showing compliance with requirements for snow and ice control in each Performance Section	100%
16.2	Weather Forecasting	Weather forecast information is obtained and assessed and appropriate precautionary treatment is carried out to prevent ice forming on the travel way.	2 hrs	NA	NA	Operations plan details the process and procedures in place and followed.	16.2.1	Inspection records showing compliance with requirements for weather forecasting in each Performance Section	100%	
16.3	Operational Plans	Operate snow and ice clearance plans to maintain traffic flows during and after snowfall and restore the travel way to a clear condition as soon as possible.	2 hrs	NA	NA	Operations plan details the process and procedures in place and followed.	16.3.1	Inspection records showing compliance with snow and ice clearance plans in each Performance Section	100%	
16.4	Operations and Maintenance Manual	Operations and maintenance instructions for the anti-icing system and items of equipment (if Used)	2 hrs	NA	NA	Operations and maintenance instructions detail the process and procedures in place and followed.	16.4.1	Inspection records showing compliance with operations and maintenance instructions in each Performance Section.	100%	
17) INCIDENT RESPONSE										
17.1	General	Monitor the Project and respond to Incidents in accordance with the Maintenance Management Plan (MMP).	1 hr	NA	NA	Response times are met for 98% of incidents measured on a 1 year rolling basis.	17.1.1	Inspection records showing compliance with the MMP and requirements regarding incident response times in each Performance Section	100%	
						No complaints from Emergency Services.	17.1.2	Inspection records showing compliance with the MMP and requirements regarding incident response times in each Performance Section	100%	

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17.2	Hazardous Materials	Monitor the Project and respond to Incidents involving Hazardous Materials in accordance with the Maintenance Management Plan (MMP).	1 hr	NA	NA	MMP details the process and procedures in place and followed.	17.2.1	Inspection records showing compliance with the MMP details regarding hazardous materials in each Performance Section	100%
17.3	Structural Assessment	Evaluate structural damage to structures and liaise with emergency services to ensure safe working environment while clearing the incident	1 hr	NA	NA	Inspections and surveys as required by incident	17.3.1	Inspection records showing compliance with the MMP and requirements for incidents in each Performance Section	100%
17.4	Temporary and permanent remedy	Propose and implement temporary measures or permanent repairs to Defects arising from the incident. Ensure the structural safety of any structures affected by the Incident.	24 hrs	28 days	NA	Review and inspection of the incident site	17.4.1	Inspection records showing compliance with requirements for temporary and permanent remedy for incidents in each Performance Section	100%
18) CUSTOMER RESPONSE									
18.1	Response to inquiries	Timely and effective response to customer inquiries and complaints.	48 hrs	NA	NA	Contact the customer within 48 hours following initial customer inquiry.	18.1.1	Percentage of responses within specified times in each Performance Section.	100%
						All work resulting from customer requests is scheduled within 48 hours of customer contact.	18.1.2	Demonstrated by O&M Records	100%
						Follow-up contact with the customer within 72 hours of initial inquiry.	18.1.3	Demonstrated by O&M Records	100%
						All customer concerns/requests are resolved to TxDOT's satisfaction within 2 weeks of the initial inquiry.	18.1.4	Demonstrated by O&M Records	100%
18.2	Customer Contact Line	Telephone line manned during business hours and 24 hour availability of messaging system. Faults to telephone line or message system rectified.	24 hrs	7 days	NA	Instances of line out of action or unmanned	18.2.1	Number of operations records showing non availability of the customer contact line in each Performance Section including complaints from public.	Nil
19) SWEEPING AND CLEANING									
19.1	Sweeping	i) Keep all channels, hard shoulders, gore areas, ramps, intersections, islands and frontage roads swept clean with vacuum sweepers, ii) Clear and remove debris from traffic lanes, hard shoulders, verges and central reservations, footways and cycle ways iii) Remove all sweepings without stockpiling in the right of way and dispose of at approved tip.	24 hrs	28 days	3 months	Buildup of dirt, ice, rock, debris, etc. on roadways and bridges not to accumulate greater than 24" wide or 1/2" deep	19.1.1	Inspection records showing compliance with requirements for sweeping in each Performance Section.	100%
19.2	Litter	i) Keep the right of way in a neat condition, remove litter regularly. ii) Pick up large litter items before mowing operations. Dispose of all litter and debris collected at an approved solid waste site.	24 hrs	28 days	3 months	No more than 20 pieces of litter per roadside mile shall be visible when traveling at highway speed.	19.2.1	Inspection records showing compliance with requirements regarding litter pick-up in each Performance Section.	100%
NOTES FOR ATTACHMENT 19-1									
1 Hazard Mitigation shall be an action taken by Developer to mitigate a hazard to Users or imminent risk of damage or deterioration to property or the environment such that the Category 1 Defect no longer exists.									
2 Permanent Remedy shall be an action taken by Developer to restore the condition of an Element following Hazard Mitigation of a Category 1 Defect: (a) to the standard required for new construction / Renewal Work; or (b) to a condition such that the Target is achieved for each Measurement Record.									
3 Permanent Repair shall be an action taken by Developer to restore the condition of an Element for which a Category 2 Defect has been recorded: (a) to the standard required for new construction / Renewal Work; or (b) to a condition such that the Target is achieved for each Measurement Record.									