SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

1. WINTER SERVICE GENERAL

1.1 General

1.1.1 During the Winter Service Period, the Operating Company shall prevent snow or ice from remaining on all Trunk Roads within the Unit in accordance with the requirements of this Part.

1.1.2 The Operating Company shall provide all resources, including depots (except where stated elsewhere in this Contract), materials, labour and Winter Service Plant to meet all winter weather conditions and deliver the level of Winter Service required to fulfil its obligations under this Contract.

1.1.3 The resources identified in Annex 7.2/J of this Part are the minimum provisions and shall not be construed as representing all resources required by the Operating Company to fulfil its obligations for the Winter Service.

1.1.4 The Operating Company shall ensure resources are available to provide and maintain the Winter Service if winter conditions occur outwith the Winter Service Period.

1.1.5 The Operating Company shall identify to the Director circumstances in which it considers it should execute Winter Service Operations as Mutual Aid. The Director will determine whether to issue Orders to provide Mutual Aid in respect of these or any other circumstances.

1.1.6 No later than 30 days prior to the end of Mobilisation Period 2, the Operating Company shall review and, where relevant, amend each of the Annexes of this Part to take account of Network 2 and shall submit the amended Annexes of this Part to the Director for his prior written consent.

1.2 Winter Service Plan

1.2.1 The Winter Service Plan shall comprise the Operating Company's proposals and approach for delivering the Winter Service in any Winter Service Period to meet the requirements of this Contract.

1.2.2 The Winter Service Plan shall comply with the requirements of Transport Scotland's *Manual for the Management of the Risk of Unplanned Network Disruption* and be included within the Operating Company's Disruption Risk Management Plan as stated in Schedule 7 Part 3.

1.2.3 The Operating Company shall prepare the Winter Service Plan in accordance with the structure in Annex 7.2/A of this Part and include the details required by Annex 7.2/J of this Part.

1.2.4 The Operating Company shall also include the following details in the Winter Service Plan as a minimum:

(i) liaison arrangements to ensure the coordination of Winter Service Operations at the boundaries of the Unit,

(ii) Mutual Aid arrangements with other operating companies or local authorities,

(iii) its response times for mobilising Winter Service Plant and such other resources as shall be required to meet the requirements of this Part,

(iv) rosters detailing the availability of all Operating Company staff required to provide the Winter Service throughout the Winter Service Period. The rosters shall include names, addresses and telephone numbers of the staff listed,

(v) proposed arrangements for safe clearing of all roads within the Unit when they are covered in snow or ice,

(vi) proposed arrangements for safe clearing of the Principal Crossings within the Unit when they are covered in snow or ice,

(vii) proposed arrangements for dealing with freezing rain/rain falling on extremely cold surfaces,

(viii) the type, location and procedures for the operation of snow gates in each Winter Service Plan,

(ix) the arrangements for re-opening roads and the Principal Crossings and snow gates within the Winter Service Plan,

(x) processes and procedures for deciding when it is unsafe to continue with, or commence, clearing Operations,

(xi) arrangements for dealing with vulnerable gradient locations and other areas requiring special attention, and

(xii) arrangements for controlling access to key routes in severe conditions.

1.2.5 When preparing the Winter Service Plan, the Operating Company shall consult the Emergency Services, adjacent local authorities and their agents, other operating companies and other interested parties.

1.2.6 Not later than 30 days prior to the end of Mobilisation Period 1, the Operating Company shall prepare and submit to the Director for his written consent, the Winter Service Plan for Network 1 for the period between Commencement of Service Date 1 and midnight on 15 May that first follows Commencement of Service Date 1 in the event that Commencement of Service Date 1 falls between 31 August and 15 May.

1.2.7 Prior to 31 July of each Annual Period, the Operating Company shall prepare and submit to the Director for written consent the Winter Service Plan for the forthcoming Winter Service Period. The Operating Company shall update the Winter Service Plan to take account of Network 2 no later than 30 days prior to the end of Mobilisation Period 2 and shall submit the updated Winter Service Plan to the Director for his written consent.

1.2.8 Once consented to by the Director, the Winter Service Plan shall be incorporated into the Management System.

1.2.9 The Operating Company shall ensure the Winter Service Plan is kept under review prior to and during the Winter Service Period. The Operating Company shall submit any amendments to the Winter Service Plan to the Director for his prior written consent. When consented to, the amended Winter Service Plan shall be incorporated into the Management System.

1.2.10 Prior to the commencement of each Winter Service Period, the Operating Company shall provide one Electronic Copy of each approved Winter Service Plan to:

(i) the Director,

(ii) the Performance Audit Group,

(iii) the Emergency Services,

(iv) adjacent local authorities and their agents, and

(v) other operating companies.

1.3 Monitoring and Reporting

1.3.1 The Operating Company shall support the Director in the operation of the Scottish Salt Group as required. For the purposes of this Part, the "Scottish Salt Group" includes representatives from the Society of Local Authority Chief Executives (SOLACE), the Society of Chief Officers of Transportation in Scotland (SCOTS), Convention of Scottish Local Authorities (COSLA) and Transport Scotland. Its function is to monitor local authority and Trunk Road operator's salt returns, identify pressure points, arrange Mutual Aid, input to the United Kingdom Salt Cell, liaise with salt suppliers, provide salt conservation guidance, identify alternative salt suppliers and identify alternative de-icers.

1.3.2 The Operating Company shall provide the Director when requested with daily or weekly salt stock monitoring reports. Monthly salt stock monitoring reports shall be produced and submitted to the Director on the first Working Day of each month during the Winter Service Period.

Such reports shall detail salt stocks held, supply arrangement within the Unit, salt usage and include a position statement on salt stocks, actual and imminent salt orders and a forecast of forward usage. The salt stock monitoring report shall be in accordance with the structure shown in Annex 7.2/L of this Part.

1.3.3 No later than 31 May in each Annual Period, the Operating Company shall prepare a Winter Service Report on the Winter Service Plan and Winter Service Operations for the previous Winter Service Period, for review by the Director and the Performance Audit Group. The Winter Service Report shall help to inform the Director and the Operating Company about the improvements required for the next Winter Service Plan. The Winter Service Report shall be in accordance with the structure shown in Annex 7.2/B of this Part.

1.3.4 Prior to 31 May of the first Annual Period, the Operating Company shall prepare a Winter Service Report and submit it to the Director for the portion of the Winter Service Period ending 15 May in the first Annual Period.

1.3.5 To assist in the preparation of this Winter Service Report, prior to Commencement of Service Date 1 the Director will provide the Operating Company with the Winter Service Plan prepared by the previous operating company for any part of the Unit and details of the Winter Service provided by it and any other historic information.

1.3.6 An annual review meeting between the Operating Company and the Director shall take place 10 Working Days after each annual Winter Service Report has been submitted to the Director, to consider the findings.

1.3.7 During the Winter Service Period, the Operating Company shall produce daily reports on planned treatments for the following 24 hour period and actual treatments for the previous 24 hour period for each precautionary treatment Route and each Winter Service Patrol route.

These reports shall be recorded in an electronic format and shall include as a minimum:

(i) summary forecast and actual weather data,

(ii) planned and actual spread rates,

(iii) planned and actual commencement times,

(iv) completion times,

(v) amount of de-icing material spread and the cumulative amount spread by weight during the relevant Winter Service Period,

(vi) plough usage,

(vii) number of treatment days (capability) of each de-icing material available for each depot based on six treatments per Route per day at 20 grammes per square metre for pre wetted salt and six treatments per Route per day at 0.0156 litres per square metres for potassium acetate,

(viii) the weather forecast accuracy, and

(ix) any other relevant information.

1.3.8 In addition to the provisions of 1.3.7, the Operating Company shall upload its daily report on planned treatments for the following 24 hour period onto the Traffic Scotland Service website by 15:00 hours each day during the Winter Service Period.

1.3.9 For each operative, a log of hours spent on "call out" or "standby" shall be kept in accordance with the documented procedures in the Management System.

1.4 Basic Facility

1.4.1 Operatives of Winter Service Plant shall hold at all times up to date recognised qualifications and shall have the skills and experience to operate such Plant safely.

1.4.2 The Operating Company shall ensure that sufficient operatives shall be available at all times to provide the Winter Service Operations and to meet the required response times.

1.4.3 The Operating Company shall ensure that, throughout each Winter Service Period, sufficient trained operatives are available for each item of front line and reserve Winter Service Plant and each item of loading Winter Service Plant such that up to 24 hours per day working can be carried out.

1.4.4 The Operating Company shall ensure that, throughout the Winter Service Period, sufficient resources are available to minimise disruption to Winter Service Operations caused by breakdown or any other similar circumstance and that Winter Service Operations are not delayed.

1.4.5 The Operating Company shall arrange for any necessary repairs to the front line Winter Service Plant to be carried out without delay unless such repair compromises delivery of the Winter Service, in which case the Operating Company shall mobilise

the reserve Winter Service Plant to meet the required response times. The Operating Company shall ensure that repairs are carried out to the front line vehicles without delay while the reserve fleet is operational.

1.4.6 A system that allows spoken communication with other Winter Service Plant operatives and the Winter Service Duty Officers shall be fitted in all Winter Service Plant. Such system shall be effective at all times and within all parts of the Unit including the location of each of the Winter Service Duty Officers.

1.4.7 Prior to 1 October in each Annual Period, the Operating Company shall:

(i) drive the whole length of each precautionary treatment route in the Winter Service Plant to be used for the precautionary treatment of such route at speeds not exceeding those required for such precautionary treatment, and

(ii) fit and remove the plough to all Winter Service Plant so equipped,

in order to ensure its operatives are familiar with the route and plant to be used.

1.4.8 Records of the requirements of paragraph 1.4.7 including as a minimum details of:

(i) time taken from depot to start of treatment route,

(ii) time taken to travel the route,

(iii) time taken to travel the treated route,

(iv) time taken to fit the plough,

(v) any problems encountered and actions taken to resolve them,

(vi) proposed longer term solutions to prevent recurrence of such problems, and

(vii) any other relevant information,

shall be held electronically by the Operating Company in accordance with the documented procedures in the Management System.

2. WINTER SERVICE MANAGEMENT

2.1 Equipment and Services

2.1.1 The Operating Company shall provide the following to assist with its decision making process:

(i) an expert weather forecasting service,

(ii) a computerised road weather information system (the "Computerised Road Weather Information System") which includes hardware, software and telecommunication links required to obtain, interpret and display as a minimum:

(a) road sensor data (forecast and actual),

(b) weather data,

(c) weather camera images,

(d) frontline Winter Service Plant sensor data (air, road surface temperature and spreading rates) in real time,

(e) audible warnings and alarms for winter duty staff, and

(f) other relevant information,

in a manner that predicts trends in weather and road conditions.

2.1.2 The Computerised Road Weather Information System shall be accessible to the expert weather forecasting service provider and shall be able to accept road sensors, mobile road sensors, alarms and action logs additional to those listed in Annex 7.2/G of this Part.

The Operating Company shall be responsible for the provision of everything within the Computerised Road Weather Information System with the exception of road sensors and weather cameras. No later than 30 days prior to the end of Mobilisation Period 1, the Operating Company shall submit its proposed Computerised Road Weather Information System to the Director for his written consent. No later than 30 days prior to the end of Mobilisation Period 2, the Operating Company shall amend the Computerised Road Weather Information System to take account of Network 2 and shall submit its proposed amendments to the Director for his written consent. If in either case, consent is not given, the Operating Company shall submit a revised Computerised Road Weather Information System for approval within 10 Working Days of consent being refused.

2.1.3 The Computerised Road Weather Information System shall have suitable computer terminals and software for the display of weather related radar information from the expert weather forecasting service provider. Such information shall be accessible to the Operating Company at all times during the Winter Service Period to assist in the Winter Service decision making process.

2.1.4 The Operating Company shall provide the Director with real time access to the Computerised Road Weather Information System and arrange for access to the expert weather forecaster's website to allow remote monitoring of proposed daily actions.

2.2 Other Provisions

2.2.1 The Operating Company shall provide and maintain all telecommunication links to meet the requirements of this Part.

2.2.2 All road sensors and weather prediction equipment shall use an open protocol based upon the Department for Transport *TR2020C* protocol.

Updated protocols may be used, but only where open access of the protocol is available to the Director to enable access to such protocol to other providers of equipment or service.

For new and replacement weather stations, open protocol shall be provided at outstation level to ensure full functionality is available to other providers of equipment or service.

2.2.3 To obtain regular updates of road conditions, road sensors shall be polled by the Operating Company at intervals of 20 minutes between 1 October and 15 May and hourly at all other times.

2.2.4 The Operating Company shall ensure that all cameras are operational throughout each Annual Period and as a minimum weather camera images shall be updated every 10 minutes. These images shall be delivered to the Traffic Scotland Service website in a format agreed with the Director.

2.2.5 The Operating Company shall hold welfare kits and shall distribute these in the event of a Critical Incident which involves stranded vehicles. The welfare kits shall be carried by each Winter Service Plant and shall as minimum include 24 space blankets, 24 bottles of water and 24 energy bars.

2.3 Winter Service Duty Officers

2.3.1 The Winter Service Duty Officers shall be authorised by the Operating Company to take decisions and to issue instructions on behalf of the Operating Company for implementing and directing the Winter Service and shall take such decisions and issue such instructions as are required. The Winter Service Duty Officers shall be on duty in the control room whenever Winter Service Operations are planned and or in operation. The Winter Service Duty Officers shall keep all Records relating to each decision made.

2.4 Decision Making Processes

2.4.1 The Director will provide, where available, to the Operating Company road sensor data for Network 1 during Mobilisation Period 1 and for Network 2 during Mobilisation Period 2.

2.4.2 During the Winter Service Period, the Operating Company shall monitor and interpret:

(i) weather forecasts,

(ii) Trunk Road conditions,

(iii) data from fixed and mobile road sensors,

(iv) the Computerised Road Weather Information System, and

(v) weather station and Traffic Scotland closed circuit television cameras

to ensure that the Winter Service Duty Officers receive and monitor climatic and road information to assist in the decision making process and in taking appropriate actions.

2.4.3 When snow or ice is forecast, action shall be taken by the Operating Company to keep the roads within the Unit in safe condition based on the Winter Service Plan.

2.4.4 Following any precautionary treatment undertaken by the Operating Company, the Winter Service Duty Officers shall continue to monitor the weather forecasts and the actual weather conditions, including reports from Winter Service Patrols and data from the Computerised Road Weather Information System, to determine the ongoing effectiveness of the treatment and to instruct further treatment when this shall be required.

This shall be particularly important in situations where:

(i) precipitation is forecast or has occurred that may reduce the effectiveness of a treatment, or

(ii) the trend data from the Computerised Road Weather Information System changes from that predicted, or

(iii) on exposed bridge decks where temperatures can be lower than adjoining roads.

Where the information available to the Winter Service Duty Officers requires a review of the ongoing effectiveness of any precautionary treatment that has been undertaken,

in terms of the ability of residual levels of de-icing material remaining on any pavement surface to deal with forecast or actual weather conditions, the Winter Service Duty Officers shall arrange for further precautionary treatment to be carried out.

2.5 Winter Service Exercises

2.5.1 The Operating Company shall carry out Winter Service "snow desk" exercises prior to 1 November in each Winter Service Period. Such exercises shall be based on scenarios provided by the Director and shall serve to test the effectiveness of the Operating Company's proposed Winter Service personnel.

2.5.2 The Operating Company shall assess the performance of its proposed Winter Service personnel and such shall also be assessed by the Director and the Performance Audit Group. In the event that such performance is deemed unsatisfactory by any party, the Operating Company shall be required to take remedial action to improve demonstrably the effectiveness of the Winter Service personnel.

2.6 Liaison and Communication

2.6.1 During the Winter Service Period, the Operating Company shall report the known effects of adverse weather conditions to the Traffic Scotland Operations and Infrastructure Services Contractor. The Operating Company shall liaise closely with:

(i) Transport Scotland,

(ii) the Police,

(iii) the Traffic Scotland Operations and Infrastructure Services Contractor,

(iv) adjacent local road and road authorities, and

(v) adjacent Trunk Road operators,

to monitor adverse winter weather and travelling conditions and ensure that the Winter Service Plan for provision of Winter Service at boundary interfaces is implemented.

2.6.2 When Winter Service Operations are planned, the Operating Company shall notify electronically the organisations referred to in paragraph 2.6.1 of this Part, to inform them of such Operations and, when appropriate, to request that messages be displayed on all relevant electronic warning systems and variable message signs.

2.6.3 The police may supply information to the media regarding Trunk Road travelling conditions during periods of Severe Weather.

2.7 Winter Service Patrols

2.7.1 From 1 November to 31 March inclusive, the Operating Company shall carry out Winter Service Patrols on those sections of Trunk Roads identified in Annex 7.2/C of this Part.

2.7.2 Category A and Category B Winter Service Patrols are identified in Annex 7.2/C of this Part.

2.7.3 All Winter Service Patrol vehicles shall comprise a pre-wet spreader with a minimum capacity of six cubic metres and with full functionality that meets the requirements of the Specification.

2.7.4 When the road surface temperature for any climatic area within a Winter Service Patrol route is forecast at any time within the period 02.00 to 10.00 hours to be less

than, or equal to, three degrees centigrade, a Winter Service Patrol shall be enacted in accordance with the requirements of paragraph 2.7.10 and paragraph 2.7.11.

2.7.5 Winter Service Patrols shall:

(i) patrol all carriageways of Trunk Roads within the Unit, excluding slip roads,

(ii) report on road conditions encountered to, and take instruction on treatments from, the Winter Service Duty Officers,

(iii) provide an immediate response when instructed to carry out treatments or other de-icing Operations by the Winter Service Duty Officers,

(iv) deal with any situation on the Winter Service Patrol route requiring immediate attention,

(v) pay particular attention to the areas identified in Annex 7.2/F of this Part,

(vi) undertake short stops for minor maintenance such as clearing grips and removing debris, and

(vii) provide daily reports in the format indicated in Table 7.2.J.3 of Appendix WSP1 to Annex 7.2/J of this Part.

Where any situation on the Winter Service Patrol route cannot be resolved by any of the actions described in this paragraph, the Operating Company shall deploy additional resources to resolve the situation. Where any Incident occurs within the Unit, but outwith the Winter Service Patrol route, the Operating Company shall deploy additional resources to manage the Incident.

2.7.6 When, during a Winter Service Patrol, ice is found to have formed on a major Structure, the Operating Company shall use potassium acetate as a spot treatment.

2.7.7 The Operating Company shall monitor the operation of Winter Service Patrols and take any action necessary to ensure that they comply with the requirements of this Part.

2.7.8 Winter Service Plant for Winter Service Patrols shall be fully loaded with de-icing material at the commencement of the Winter Service Patrol.

2.7.9 Category A Winter Service Patrols shall operate from 02:00hrs to 10:00hrs at two hourly intervals as described in paragraph 2.7.10 of this Part when during this period the road surface temperature for any climatic domain within a Winter Service Patrol route is forecast at any time to be less than, or equal to three degrees centigrade. A minimum of two Winter Service Patrol routes shall be designed such that each Winter Service Patrol alternates between a one hour patrol and a one hour standby on each Winter Service Patrol route. All Winter Service Patrol routes shall be designed such that patrols are completed within one hour of commencement allowing for typical morning peak traffic flows.

Winter Service Patrol routes for motorways, dual carriageways and other connecting roads shall be further designed so that the Winter Service Patrol vehicle, when working, is able to attend any location on its route within 30 minutes of receiving a call from any of the Winter Service Duty Officers.

2.7.10 Operating periods for Category A Winter Service Patrols shall be between 02:00hrs and 04:00hrs, 04:00hrs and 06:00hrs, 06:00hrs and 08:00hrs and 08:00hrs and

10:00hrs. The Winter Service Patrol route must be covered in the same direction in each period.

2.7.11 Category B Winter Service Patrols shall operate from 00:00hrs to 09:00hrs at three hourly intervals. Operating periods for Category B Winter Service Patrols shall be between 00:00hrs and 03:00hrs, 03:00hrs and 06:00hrs and 06:00hrs and 09:00hrs. The Winter Service Patrol Route must be covered in the same direction in each period.

2.7.12 Winter Service Patrols shall allow for rest periods, patrolling both sides of dual carriageways and motorways and all actions required in accordance with paragraph 2.7.5 of this Part.

2.7.13 Winter Service Plant for Winter Service Patrols shall not be used by the Operating Company for undertaking precautionary treatments.

2.7.14 Winter Service Plant for Winter Service Patrols shall be used by the Operating Company for the clearance of snow or ice where or when such usage does not conflict with its primary function, or when the extent of the snowfall requires it to be used for snow clearing on the Winter Service Patrol route.

2.7.15 Category A Winter Service Patrols shall operate outwith the times specified in paragraph 2.7.9 when forecasts indicate snow and ice conditions causing an increased risk of delays and disruption to road users.

2.8 Airwave Communications

2.8.1 Category A and Category B Winter Service Patrols shall use Airwave in accordance with Schedule 7 Part 3. The Operating Company shall utilise this equipment as a dedicated communication system between Winter Service Patrol personnel, the Traffic Scotland National Control Centre, the Winter Service Duty Officers and the police.

2.9 Areas Requiring Special Attention

2.9.1 Areas requiring special attention are areas where frost or ice is prone to occur, where water run-off is likely to happen or where the gradient is likely to affect the traction of vehicles.

2.9.2 The Operating Company shall review the areas requiring special attention referred to in Annex 7.2/F of this Part at least once in each Annual Period and amend the list as it considers necessary.

2.10 Road Closures

2.10.1 The police are responsible for taking decisions to close roads during periods of adverse weather or adverse road conditions.

When the police, in consultation with the Operating Company, consider that the road is unsafe for vehicular traffic, the Operating Company shall arrange with the Police to close the road(s) and, if applicable, snow gates listed in Annex 7.2/G of this Part as considered necessary following such consultation.

2.10.2 The Operating Company shall liaise with the Police to establish and carry out procedures for the operation of snow gates, including checking that no vehicles or pedestrians are trapped on sections of Trunk Road between closed snow gates. The procedures shall include:

(i) manning the gates until a Police search of the road between the gates has been undertaken,

(ii) securing the gates, having ascertained that no-one has been trapped between them,

(iii) withdrawing all Operating Company personnel except those involved in the clearance of snow, and

(iv) agreeing the method of securing snow gates.

The Operating Company shall discuss and agree with the Police a standard type of padlock and suitable number of keys for the snow gates within the Unit. The Operating Company shall also agree with the Police on the number of keys to be held by each organisation. Two of the Operating Company's keys shall be held at the depot nearest to each snow gate. The Winter Service Duty Officer shall ensure that the keys are kept safely at all times and that they are returned to the depot in the event that they are taken out by the Operating Company in the course of its Winter Service Operations.

The Operating Company shall include the type, location and procedures for the operation of snow gates in each Winter Service Plan.

The Operating Company shall advise the police when it considers that the road can be re-opened safely and shall arrange with the police to re-open the road. The Operating Company shall document the arrangements for re-opening roads and snow gates within the Winter Service Plan.

2.10.3 When a snow gate is intended to be closed, the Operating Company shall immediately notify the Traffic Scotland Operations and Infrastructure Services Contractor by telephone.

2.10.4 The Operating Company shall provide regular updates to the Traffic Scotland Operations and Infrastructure Services Contractor by telephone and e-mail of progress on clearing the closed section of road and the expected and actual time of re-opening.

2.10.5 The Operating Company shall immediately notify the Traffic Scotland Operations and Infrastructure Services Contractor by telephone following a Critical Incident which has caused or will cause significant disruption to traffic flow.

2.10.4 The Operating Company shall comply with the requirements of Schedule 7 Part 3 regarding notification of Critical Incidents to the Director and Performance Audit Group.

2.10.5 A written report shall be submitted to the Director by email within 12 hours of snow gates being closed due to snow or other adverse weather, giving details of:

(i) the reason for closing the gates,

(ii) the time that the gates were closed,

(iii) the time that the gates were re-opened or are likely to be re-opened,

(iv) any action to be taken prior to re-opening the gates,

(v) stranded motorists, if any, and

(vi) any other relevant information.

2.10.6 Following the closure of snow gates, snow clearing Operations shall continue on the section of Trunk Road between the gates as weather conditions permit, to allow the earliest possible re-opening of the Trunk Road.

2.10.7 The Operating Company shall inspect snow gates annually prior to the commencement of the Winter Service Period and shall, subject to an Order, undertake Operations to ensure they are functional and of effective appearance throughout the Winter Service Period.

2.11 Snow Fences, Shelter Belts and Snow Poles

2.11.1 The locations of existing snow fences and snow poles are provided in Annex 7.2/G of this Part.

2.11.2 During the first Annual Period, the Operating Company shall review the need for snow fences, shelter belts and snow poles on the Unit and, where it considers that alterations to existing provisions are necessary, the Operating Company shall make recommendations in writing for the Director's consent.

2.11.3 The Operating Company's recommendations for erection of additional snow fences and creation of shelter belts erection of additional snow poles shall be included in each Winter Service Report.

2.11.4 Subject to an Order, the Operating Company shall Design and erect snow fences in accordance with the recommendations set out in Transport and Road Research Laboratory *Report LR 362 Snow Fences* by L E Hogbin dated January 1970, unless otherwise consented to in writing by the Director.

2.11.5 Subject to an Order, the Operating Company shall supply and erect snow poles. The Operating Company shall inspect snow fences and snow poles annually prior to the commencement of the Winter Service Period and shall, subject to an Order, undertake Operations to ensure they are functional and of effective appearance throughout the Winter Service Period.

2.12 Salt Bins

2.12.1 During Mobilisation Period 1, the Operating Company shall review the current locations of salt bins in the Unit and shall make proposals for the Director’s consent. The Operating Company shall keep the need for salt bins under review and shall consider provision of additional locations to improve the Winter Service. It shall make appropriate recommendations in each Winter Service Report.

2.12.2 By 30 September in each Annual Period, salt bins shall be provided and placed by the Operating Company at the locations identified in Annex 7.2/G of this Part. Throughout the Winter Service Period the Operating Company shall:

(i) replenish the salt bins with salt to ensure that a sufficient supply is always available for public use,

(ii) replace damaged, vandalised or missing salt bins within 48 hours of the damage, vandalism or absence becoming known by the Operating Company, and

(iii) at the end of each Winter Service Period, collect and take all salt bins to the Operating Company's depots for storage.

Before storage, the Operating Company shall empty and wash the salt bins and grease their hinges.

2.13 Hidden Message Signs

2.13.1 Hidden message signs are provided at the locations referred to in Annex 7.2/G of this Part.

2.13.2 The Operating Company shall open, or erect and open, snow or ice hidden message signs before the start of each Winter Service Period, or as conditions require, to provide information for weather and road conditions during the Winter Service Period.

2.13.3 The Operating Company shall liaise with the Police to coordinate the activation of relevant signs when closing roads.

2.14 Records

2.14.1 The Operating Company shall complete and keep daily Records for Winter Service requirements as referred to in Annex 7.2/H of this Part. The Records shall be held electronically and have a remote access facility available to both the Director and the Performance Audit Group. The format of these Records shall be in accordance with the documented procedure in the Management System as it relates to the Winter Service. Data transmitted from the Winter Service Plant shall be received and stored in accordance with clause 2804AR of the Specification.

3. WINTER SERVICE TREATMENTS

3.1 Precautionary Treatment

3.1.1 The Operating Company shall undertake such precautionary treatment as is required.

3.1.2 The Winter Service Duty Officers shall instruct the commencement time and the spread rates for precautionary treatment Operations.

3.1.3 The total width of carriageway areas including:

(i) slip roads,

(ii) hardshoulders,

(iii) hard strips,

(iv) turning Lanes,

(v) central reserve crossovers,

(vi) contiguous lay-bys,

(vii) bus bays,

(viii) car parks,

(ix) cycle lanes, and

(x) hatched areas,

shall receive precautionary treatments.

3.1.4 The Operating Company shall ensure that precautionary treatments for carriageways with negative texture surfaces shall be applied as close as is practical to the time road

surface temperatures are forecast to be at less than, or equal to, plus one degree centigrade.

3.1.5 The Operating Company shall provide precautionary treatment for carriageways in the Unit when road surface temperatures fall, or are forecast to fall, to less than, or equal to, plus one degree centigrade or when snow conditions are forecast.

3.1.6 During precautionary treatments, all Winter Service Plant shall be driven in a manner appropriate to the prevailing weather conditions, and within the speed limit, but not exceeding 40 miles per hour.

3.1.7 On single carriageways, de-icing material shall be spread across the full width of the carriageway in a single pass.

3.1.8 A spreading vehicle shall not be used to treat a carriageway of more than three Lanes in a single pass. If the width of carriageway to receive de-icing treatment is greater than three Lanes, de-icing treatment shall be carried out either with two passes of the spreading vehicle or by the use of a second spreading vehicle. The hardshoulder is a Lane.

Spread patterns shall be adjusted to suit the carriageway width and the Lane in which the spreading vehicle is travelling.

3.1.9 Roads with temporary traffic management, including contra-flow running, may require the Operating Company to amend a treatment route.

Particular care shall be taken by the Operating Company to ensure that all Lanes and contra-flow crossovers are adequately treated with de-icing material prior to removal of temporary traffic management and reopening to traffic.

3.1.10 Potassium acetate shall be applied at the locations specified in Annex 7.2/I of this Part.

3.1.11 The Operating Company shall monitor and manage variable road and weather conditions that may occur after precautionary treatments have been completed.

3.1.12 Precautionary treatment routes shall be designed to enable completion of treatment routes within two hours of commencement of the treatment in a single pass, except where the requirements detailed in paragraph 3.1.9 of this Part apply.

3.1.13 Precautionary treatments shall be carried out on Category A, B and C footways (including those on bridge decks), footbridges and cycling facilities at locations identified in Annex 7.2/E of this Part when road surface temperatures are forecast to fall to less than, or equal to, plus one degree centigrade or when snow conditions are expected.

3.1.14 Precautionary treatment for Category A, B and C footways (including those on bridge decks), footbridges and cycling facilities shall be carried out as a separate Operation from carriageway precautionary treatments, utilising equipment suitable for the purpose.

3.1.15 The minimum spread rate for anti-icing materials for precautionary treatments to footways (including as a minimum those on bridge decks), footbridges, cycling facilities and service roads on bridges shall be 20 millilitres per square metre of brine with a minimum concentration of 20 percent. Actual treatment levels shall be discussed and agreed with the relevant local authorities.

3.1.16 The total width of Category A, B and C footways (including as a minimum those on bridge decks), footbridges, cycling facilities and service roads on bridges shall be treated.

3.1.17 The Operating Company shall use pre-wetted salt in accordance with the Specification for precautionary de-icing treatments on all carriageway treatment routes in the Unit. Details of the Operating Company's proposals for such use shall be provided as shown in Table 7.2.J.4 of Appendix WSP2 to Annex 7.2/J of this Part and in each Winter Service Plan.

The Operating Company may, within the Winter Service Plan, propose the use of dry salt in accordance with the requirements of Table 7.2.K.2 of this Part to enable the effective de-icing of carriageway and footway treatment routes during certain weather conditions.

3.2 Response Times

3.2.1 Notwithstanding the requirements of paragraph 2.7 of this Part, when an immediate response is required for snow or ice clearance or other de-icing Operations, the Operating Company shall mobilise and commence its treatment within one hour of the relevant Winter Service Duty Officers' decision.

3.2.2 When a planned response is required for precautionary treatment, the Operating Company shall mobilise and commence precautionary treatments to ensure completion before snow or ice conditions are predicted to occur, as indicated by the expert weather forecasting service.

3.2.3 For immediate or planned responses, the Operating Company shall complete treatment within two hours from the commencement of the treatment. Where normal access is prevented due to weather related or other Incidents, the Operating Company shall mobilise within one hour of becoming aware of the Incident and shall complete the precautionary treatment within three hours.

3.2.4 Category D footways, footbridges and cycleways are those not listed as being in Category A, B or C and shall receive treatment when required by the Director. The Operating Company shall identify Category D facilities in each Winter Service Plan.

3.3 Snow and Ice Clearance

3.3.1 Design of the ploughing routes shall be in accordance with the requirements of Annex 7.2/D of this Part.

3.3.2 The Operating Company shall provide details in its Winter Service Plan of its ploughing Routes in the form shown in Table 7.2.J.5 of Appendix WSP2 to Annex 7.2/J of this Part.

3.3.3 Spreading of de-icing materials during ploughing of carriageway areas shall be at the rate of spread instructed by the Winter Service Duty Officers.

3.3.4 The plough blade shall be set as close to the road surface as is consistent with the removal of the maximum amount of snow. The Operating Company shall ensure that the design of the plough blade allows for such use while preventing damage to the road surface, other equipment on the road surface and the plough blade.

3.3.5 The total width of carriageway as described in paragraph 3.1.3 of this Part shall be cleared of snow or ice.

3.3.6 In the event that treatment is required to lay-bys and car parks that are remote from the carriageway, this shall be undertaken after all other parts of the network are operating satisfactorily and resources can be deployed to these locations.

3.3.7 When planning and carrying out snow or ice clearance, the Operating Company shall pay particular attention to the layout of the carriageway in terms of the overall number of Lanes and the location of entrance and exit slip Lanes.

Snow or ice clearance of slip roads shall be coordinated with main carriageway clearance.

A clear path shall be kept open between those entry and exit points where frequent Lane changes are necessary.

3.3.8 On dual carriageway and multi-Lane motorway Trunk Roads including bridge decks:

(i) the Operating Company shall use echelon ploughing to clear the carriageway when required,

(ii) echelon ploughing shall be undertaken by two or more vehicles, a minimum of one of which shall be front line Winter Service Plant, all moving in the same direction, one behind each other, on adjacent Lanes,

(iii) only the right hand Lane may be ploughed towards the central reservation,

(iv) the Operating Company shall avoid irregular windrows caused by ploughing passes, especially those which weave from one Lane to another,,

(v) Lanes shall be completely cleared and the windrows of snow remaining shall form a smooth and continuous line without sudden encroachments into the cleared path,

(vi) Prior to removal, all windrows on the Principle Crossings shall be regularly monitored and maintained in a state that prevents a hazard to traffic,

(vii) windrows may be temporarily left on hard shoulders but these shall be cleared as soon as road surface conditions on running Lanes are safe, and

(viii) clearance work shall proceed continuously until no snow remains on the carriageway.

During and after prolonged falls of snow, ploughing shall be used continuously from the onset of snow to prevent snow build up and compaction by traffic and to ensure the snow clearance of all roads within Unit.

Such ploughing shall be supplemented by simultaneous de-icing treatment at a minimum spread rate of 20 grammes per square metre. For bridge decks potassium acetate shall be used at the spread rate in accordance with Table 7.2.K.3 in Annex 7.2/K of this Part.

3.3.9 If the road surface temperature continues to fall and the need for ploughing continues, or hard packed snow or ice has formed, the spread rate shall be increased as necessary to a maximum rate of 40 grammes per square metre in accordance with the requirements in Table 7.2.K.2 of Annex 7.2/K of this Part. Treatment of bridge decks will be accordance with the requirements in Table 7.2.K.3 of Annex 7.2/K of this Part.

3.3.10 Where conventional ploughing is not possible, for example:

(i) in exceptional circumstances when the snow on the road is deep and cannot be removed,

(ii) when de-icing treatment over packed snow is likely to provide an unacceptable surface,

(iii) when the traffic is insufficient to disperse the snow,

(iv) through certain traffic management conditions, or

(v) on bridge decks and bridge footways/service roads,

the Operating Company shall carry out Operations to lift, remove and dispose of snow or ice, or utilise snow blowers with the snow being directed onto trucks on bridge decks or onto adjacent land where the Operating Company has obtained the prior agreement of the landowner and the Scottish Environmental Protection Agency.

Such Operations shall be followed by de-icing treatment.

3.3.11 Where there is a formation of hard packed snow or ice not exceeding 20 millimetres thickness and the air temperature is above minus five degrees centigrade, removal shall be achieved by using successive spreading of de-icing material in accordance with Table 7.2.K.2 in Annex 7.2/K of this Part. Consideration shall be given to alternative de-icing materials in accordance with paragraph 5.4.1 of this Part.

The Scottish Ministers own two icebreakers (Raiko K14 model). These shall be shared by the Operating Company with the other operating companies on other parts of the Trunk Road network on a priority basis as determined by the Scottish Ministers. The Operating Company shall make all necessary arrangements with the other operating companies on other parts of the Trunk Road network for the safe storage and sharing of this equipment. The Operating Company shall ensure that front line Winter Service Plant includes two vehicles capable of being fitted with and operating either icebreaker in accordance with the manufacturer's recommendations.

3.3.12 Where there is a formation of hard packed snow or ice:

(i) not exceeding 20 millimetres thickness and air temperature is less than, or equal to, minus five degrees centigrade, or

(ii) exceeding 20 millimetres thickness,

the addition of abrasive aggregates shall be considered in accordance with paragraph 5.5 of this Part. Application of the initial treatment technique should be resumed as soon as possible since abrasives contribute little to the removal of snow or ice and may block drains and gullies upon thawing. Abrasives shall not be used on Structures where there is any danger of blockage to drains.

Abrasive aggregates may be used by the Operating Company as a supplement in urban areas where de-icing material alone would provide an unacceptably slippery surface.

3.3.13 Footways (including those on bridge decks), footbridges and cycleway categories and the response times and clearance requirements for each category are provided in Tables 7.2.E.1 and 7.2.E.2 in Annex 7.2/E of this Part. Table 7.2.E.3 provides details of such Structures within the Unit. The Operating Company shall ensure Table 7.2.E.3 is kept up to date until Service End Date and shall make written proposals for the

inclusion and treatment of additional footways, footbridges and cycleways for the Director's consent.

3.3.14 Following clearance of snow or ice from footways (including those on bridge decks), footbridges and cycling facilities, de-icing material shall be spread in accordance with paragraph 3.1.17. Where snow or ice remains on footways (including those on bridge decks), footbridges and cycling facilities after treatment, de-icing material shall be spread at a minimum spread rate of 20 grammes per square metre, or as specified in Table 7.2.K.2 of Annex 7.2/K of this Part as appropriate, to prevent ice formation on the cleared surfaces.

The full width of the footways (including those on bridge decks), footbridges and cycling facilities shall be treated.

3.3.15 The Operating Company shall, in discussion with Network Rail or any successor organisation, ensure that appropriate safety precautions are taken when snow ploughing vehicles are negotiating railway level crossings.

When snowploughing or snow blowing Operations are undertaken, the Operating Company shall ensure that snow or ice does not build up across or against:

(i) railway tracks,

(ii) gates,

(iii) bridge parapets,

(iv) fences,

(v) walls, and

(vi) other boundaries.

Where snow or ice clearance is carried out adjacent to railway overhead electricity cables, the Operating Company shall take special care to ensure snow does not cause electrical short circuits or other damage.

3.3.16 During prolonged periods of snow fall at locations where the use of salt for de-icing is prohibited, ploughing shall be continuous followed by repeated applications of de-icing chemical.

3.3.17 Lifting and removal of snow or ice from multi-level and grade separated interchanges and other locations shall be undertaken where necessary.

Sites for the disposal of snow or ice arising from such Operations shall comply with the requirement of the Scottish Environmental Protection Agency.

The Operating Company shall provide temporary traffic management, including road closures, where required for these Operations.

3.3.18 When ploughing to the nearside, other vehicles (unless stationary or on the hard-shoulder) shall not be overtaken. Snow or ice shall not be thrown over bridge parapets onto the road beneath. When ploughing to the central reservation, the speed used shall prevent the throwing of snow or ice into the path of traffic on the opposite carriageway.

3.3.19 In the event of significant snow falls, where snow ploughing being carried out by the front line and reserve Winter Service Plant is not sufficient, the Operating Company

shall deploy additional Winter Service Plant for snow clearance to ensure delays caused by the weather conditions are kept to a minimum.

3.3.20 When machine snow clearance is not suitable (including clearance around carriageway obstructions) hand snow clearance and salting shall be carried out.

3.3.21 Snow or ice shall be cleared in a manner that prevents it from landing on adjacent or underlying paved surfaces.

3.4 Freezing Rain/Rain Falling on Extremely Cold Surfaces

3.4.1 The Operating Company shall provide in its Winter Service Plan its proposals for dealing with freezing rain/rain falling on extremely cold surfaces including advance planning, operational arrangements and hazard mitigation measures. When preparing its Winter Service Plan the Operating Company shall take into account the guidance related to dealing with freezing rain contained in paragraph 5.6.6 of Part 5 of the *Highways Agency Network Management Manual*.

4. OPERATING COMPANY'S WINTER SERVICE PLANT

4.1 General

4.1.1 Annex 7.2/J of this Part details the minimum Winter Service Plant to be used in connection with the Winter Service. The Operating Company shall provide and ensure that the Winter Service Plant listed in Annex 7.2/J of this Part is available as necessary for the Winter Service.

4.1.2 The Operating Company shall ensure that the Winter Service Plant is maintained in accordance with manufacturers' recommendations.

In the event of a breakdown on any of the Operating Company's front line Winter Service Plant:

(i) details of the cause, time and location of the breakdown and any other relevant information shall be recorded,

(ii) the operator shall, if possible, return the vehicle to the nearest depot in order to minimise blockages and further disruption to the network, and

(iii) the Operating Company shall make immediate arrangements for reserve Winter Service Plant to be made available in order to comply with the requirements of this Part.

4.1.3 When used on the Trunk Roads for operative training and maintenance runs, the spinner disc at the rear of the Operating Company's Winter Service Plant shall be covered in such a way that damage caused by sharp edges in the event of an accident is reduced to a minimum.

4.1.4 Front line and reserve Winter Service Plant shall be fitted with on-board electronic data loggers in accordance with the requirements of clause 2803AR of the Specification.

4.1.5 The onboard electronic data loggers shall be capable of transmitting their data in near real time to a web accessible database in accordance with the requirements of clause 2804AR of the Specification.

In the event of an on board electronic data logger malfunction, the Operating Company shall prepare a similar written record within 12 hours.

4.1.6 The Operating Company shall measure and record the weight of de-icing material spread on each occasion on each precautionary treatment Route. Such apparatus shall either be fitted to Winter Service Plant or located at depots and shall be additional to the data loggers.

4.1.7 In September and January of each Annual Period, the Operating Company shall calibrate all equipment for spreading de-icing material:

(i) in accordance with the requirements of British Standard 1622:1989, or

(ii) where British Standard 1622:1989 does not provide for the calibration of any de-icing spreading equipment, in a manner proposed in writing by the Operating Company and consented to in writing by the Director. As a minimum the Operating Company shall provide details of the Winter Service Plant supplier's calibration method to the Director, and

(iii) in accordance with the requirements of the specific material being used.

4.1.8 September testing shall comply with the requirements of tests 'A' and 'B' and January testing shall comply with the requirements of test 'B' of British Standard 1622:1989.

4.1.9 Re-calibration and testing shall be carried out after repairs to the spreading equipment and at other times when necessary to ensure the accuracy of de-icing material spreading.

All calibration and re-calibration shall be independently carried out and certified. Calibration Certificates shall be held in accordance with the requirements of the Winter Service Plan and the Management System.

4.1.10 The Winter Service Plant that is used for spreading de-icing materials on the roads within the Unit shall be of sufficient capacity to enable the Operating Company to fulfil its obligations for Winter Service Operations.

4.1.11 Winter Service Plant used for spreading pre-wetted salt shall:

(i) be capable of delivering a constant supply of brine of the appropriate concentration in accordance with paragraph 5.3.5 of this Part,

(ii) comply with the requirements of this Part where such requirements are not inconsistent with the spreading of pre-wetted salt, and

(iii) comply with any other requirements to ensure the effective distribution of pre-wetted salt to comply with the requirements of this Part.

The Operating Company shall demonstrate to the Director that the brine delivery system of the Winter Service Plant used for spreading pre-wetted salt meets all the requirements of this Part and the Operating Company shall provide in writing to the Director the method that will be employed to ensure that the quantity of the brine being applied during each Route treatment is correct.

4.1.12 Winter Service Plant used shall comply with the requirements of this Part to ensure the effective distribution of potassium acetate and other de-icing materials.

4.1.13 The Operating Company shall provide a range of snowploughs or other winter service plant that is capable of clearing all snow conditions on all carriageway Routes, footways (including those on bridge decks, footbridges and cycleways in the Unit.

4.1.14 Snow blowers for carriageways shall as a minimum:

(i) be capable of blowing up to 600 tonnes of snow per hour,

(ii) have a width of cutter head of at least 1.8 metres,

(iii) be capable of operating in up to four metres depth of snow, and

(iv) be fitted with lights to permit effective operation during poor visibility and the hours of darkness.

4.1.15 Snow blowers for footways/bridge service roads shall as a minimum;

(i) be capable of blowing up to 35 tonnes of snow per hour,

(ii) have a width of cutter head of at least 0.5 metres,

(iii) be capable of operating in up to 0.5 metres depth of snow, and

(iv) be fitted with lights to permit effective operation during poor visibility and the hours of darkness.

4.1.16 All Winter Service Plant used for Winter Service Operations shall:

(i) comply with the requirements of this Part,

(ii) be fitted with a snowplough, and

(iii) have a minimum of two additional headlamps fitted to permit forward visibility when a snow plough is fitted.

4.2 Front line, Reserve, Additional and Loading Winter Service Plant

4.2.1 The front line Winter Service Plant must consist of a minimum of:

(i) for carriageways, four nine cubic metre vehicles,

(ii) for Winter Service Patrols, two six cubic metre vehicles, and

(iii) two snow blowers.

This does not relieve the Operating Company of any other obligations or requirements under this Contract.

4.2.2 The Operating Company's minimum front line, reserve and additional Winter Service Plant available for the Winter Service shall be as referred to in Appendix WSP4 to Annex 7.2/J of this Part. The minimum loading Winter Service Plant available within the Unit for loading front line, reserve and additional Winter Service Plant shall also be as referred to in Appendix WSP4.

4.2.3 Front line Winter Service Plant comprises vehicles and equipment permanently available within the Unit that is required for:

(i) precautionary treatments,

(ii) snow or ice clearance to a fallen or formed depth not exceeding 100 millimetres, but excluding Winter Service Plant not required to be capable of spreading whilst echelon ploughing,

(iii) Winter Service Patrols, and

(iv) compliance with the requirements of this Part.

4.2.4 All front line Winter Service Plant shall be fitted with measuring devices for air temperature and road surface temperature that shall be capable of transmitting data to the on-board data logger system for remote real time display on the Computerised Road Weather Information System.

4.2.5 Front line Winter Service Plant shall, as a minimum, have the ability to:

(i) carry out precautionary treatment to all Routes simultaneously,

(ii) carry out Winter Service Patrols clear ice and snow lying to a depth up to 100 millimetres,

(iii) spread pre-wetted salt, and

(iv) apply potassium acetate on bridge decks, bridge service roads and footways.

4.2.6 The Operating Company's reserve Winter Service Plant shall be that part of the Winter Service Plant permanently available within the Unit to supplement front line Winter Service Plant for the Winter Service in situations:

(i) when such front line Winter Service Plant may not be available for whatever reason for the Winter Service, or

(ii) to clear snow or ice in accordance with the requirements of this Part.

The reserve Winter Service Plant may also be used to supplement front line Winter Service Plant in snow conditions.

4.2.7 The additional Winter Service Plant shall be that part of the Winter Service Plant that is available for the Winter Service, either directly under the control of the Operating Company or through contingency arrangements with third parties, to deal with:

(i) snow or ice lying to a depth of more than 100 millimetres, and

(ii) any other winter weather conditions which cannot be managed by front line or reserve Winter Service Plant.

4.2.8 Details of additional Winter Service Plant shall be as referred to in Appendix WSP4 to Annex 7.2/J of this Part.

5. DE-ICING MATERIALS

5.1 General

5.1.1 The Operating Company shall procure and provide the salt and other de-icing materials necessary to comply with the Winter Service requirements.

5.1.2 The Operating Company shall provide the minimum operational stock levels at the start of the Winter Service Period as detailed in Appendix WSP3 to Annex 7.2/J of this Part. If stocks have reduced to 90 percent on 21 December in any Winter Service Period, the Operating Company shall restock to 100 percent of the full pre-season stocks.

5.1.3 Salt for de-icing shall be 6.3 millimetre grading particle size complying with British Standard 3247:2011 and treated with an anti-caking agent.

5.1.4 The method of salt storage at loading points shall ensure that the moisture content of the stored salt does not exceed four percent. Should the moisture content of salt exceed four percent, the Operating Company shall take all measures necessary to ensure compliance with the requirements of this Part is regained.

Where moisture content is deliberately increased to deal with low humidity conditions, the spread rate shall not be increased.

5.1.5 Within 10 Working Days of each delivery, salt shall be tested by the Operating Company at loading points in accordance with British Standard 3247:2011 and results recorded to ascertain:

(i) moisture content (one test per 500 tonnes),

(ii) particle size distribution (one test per 500 tonnes),

(iii) chloride content (one test per 1500 tonnes), and

(iv) soluble sulphate compounds (one test per 1500 tonnes).

5.1.6 Salt stocks shall be tested by the Operating Company for salt moisture content at monthly intervals throughout each Winter Service Period and the results shall be recorded. As a minimum, the salt should be tested at the base, centre and top of the stockpile.

5.1.7 The Operating Company shall store materials test data on an electronic database.

5.1.8 Potassium Acetate used for de-icing Operations at the locations specified in Table 7.2.I.1 of Annex 7.2/I shall comply with the Ministry of Defence Specification 68-118 (De-icing/Anti-Icing Fluid for Runways) unless otherwise consented to in writing by the Director.

5.2 Pre-wetted Salt

5.2.1 Salt for de-icing material as part of pre-wetted salt Operations, not including the salt to be used in producing brine, shall be 6.3 millimetre grading particle size complying with British Standard 3247:1991 or equivalent.

5.2.2 Salt for de-icing material as part of pre-wetted salt Operations to be used in producing brine shall be suitable for such production.

5.2.3 For pre-wetted salt spreading Operations, the spread rates set out in Table 7.2.K.2 of Annex 7.2/K of this Part shall represent the total weight of the spread material.

5.2.4 Brine added to salt during spreading Operations shall comprise 30 percent of the total spread material by weight, giving a 70 percent salt: 30 percent brine solution.

5.2.5 Brine solution with a concentration of 23 percent dissolved sodium chloride shall be used as the pre-wetting agent.

Where air temperatures are forecast to fall below minus 15 degrees centigrade, the brine shall be diluted by the addition of five percent to ten percent water to prevent re-crystallisation of the salt. The addition of water shall be undertaken in a manner which ensures that the water and brine is thoroughly mixed to produce a consistent concentration of brine.

5.2.6 The Operating Company shall arrange for sufficient brine to be stored at each depot to treat simultaneously, at a maximum spread rate, all precautionary treatment Routes

serviced from that depot. An additional quantity of 20 percent brine above the minimum shall be held in reserve.

The brine within the storage facilities shall be replenished within two hours of being depleted.

5.2.7 Sensors with digital read outs shall be fitted to the Operating Company's storage facilities to measure the salt concentration of the brine automatically.

Daily checks shall be carried out by the Operating Company using a saturation meter and the results shall be stored electronically. Water supplies to saturator units shall be protected from freezing by appropriate measures.

5.3 Alternative De-icing Materials

5.3.1 In extreme conditions, such as when temperatures drop below levels at which sodium chloride is effective, the Operating Company shall use alternative de-icing materials in accordance with guidance on use of such materials. Such alternative de-icing material shall be described in the Winter Service Plan.

5.3.2 The Operating Company shall provide in its Winter Service Plan its proposals for using the alternative de-icer material in accordance with published guidance, including the UK Roads Board publication *Treatments for Extreme Cold* and *Guidance on the use in Scotland of Five Alternative De-icers to Salt Suitable for use in Lower Temperatures*.

5.3.3 The Operating Company shall provide and store a minimum of 10,000 litres, or equivalent, of alternative de-icing material within the Unit to deliver the requirements of paragraph 5.3.1 of this Part.

5.3.4 The Operating Company shall replenish the original alternative de-icer stock when the quantity has reduced to a minimum of 5,000 litres.

5.4 Abrasive Aggregates

5.4.1 A single sized abrasive aggregate with particle size of six millimetres, or five millimetres sharp sand having low fines content, shall be added to the salt in a 50 percent salt: 50 percent abrasive aggregate or sand mixture in accordance with the requirements of this Part.

5.5 Materials Storage

5.5.1 Salt and other de-icing materials shall be stored in a covered structure within the Operating Company’s depots to ensure compliance with the requirements of this Part and the supplier's written instructions in the case of additives, potassium acetate and any other de-icing materials.

5.5.2 The Operating Company shall satisfy itself that arrangements for storage, handling and loading of de-icing materials at the loading points are adequate to achieve the specified response times.

5.5.3 Where there is no provision for covered storage at Commencement of Service Date 1, the Operating Company shall provide such storage no later than 12 months after Commencement of Service Date 1. Prior to the provision of such storage, all salt stored externally shall be covered in protective sheeting in a manner that prevents the ingress of moisture into the material as far as is practicable.

5.5.4 The Operating Company shall safeguard and manage all de-icing material stock and storage facilities.

5.5.5 The Operating Company shall ensure that de-icing material stock does not become contaminated with foreign matter likely to cause damage to Winter Service Plant, cause the de-icing material to fail to comply with the requirements of this Part or adversely affect road users.

This is Annex 7.2/A to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/A – Winter Service Plan

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/A – Winter Service Plan

1. MANAGEMENT ARRANGEMENTS

The Winter Service Plan shall provide the following details:

1.1 **Winter Service Manager**

1.1.1 Name,

1.1.2 Qualifications,

1.1.3 Experience,

1.1.4 Responsibilities.

1.2 **Winter Service Duty Officers**

1.2.1 Names,

1.2.2 Qualifications,

1.2.3 Experience,

1.2.4 Responsibilities.

1.3 **Monitoring Arrangements**

1.3.1 Monitoring arrangements during Normal Working Hours,

1.3.2 Monitoring arrangements outwith Normal Working Hours.

1.4 **Personnel Resources**

1.4.1 Names of staff and labour resources,

1.4.2 Availability rosters including names, addresses and telephone numbers of the staff listed.

1.5 **Call out arrangements**

1.5.1 Call out arrangements during Normal Working Hours,

1.5.2 Call out arrangements outwith Normal Working Hours,

1.5.3 Contact arrangements during Normal Working Hours,

1.5.4 Contact arrangements outwith Normal Working Hours,

1.5.5 Mobilisation times.

1.6 **Communications Equipment**

1.7 **Training for Managers and Other Staff**

1.7.1 Details of previous training,

1.7.2 Details of proposed training.

2. WEATHER FORECASTING

2.1 **Purpose**

2.2 **Methodology**

2.3 **Weather forecasting service**

2.3.1 Climatic domains,

2.3.2 Weather radar,

2.3.3 Ice sensors and weather forecast sites,

2.3.4 Thermal mapping,

2.3.5 Location plans.

2.4 **Computer Systems**

3. MONITORING ARRANGEMENTS FOR AREAS REQUIRING SPECIAL ATTENTION

4. DECISION MAKING

4.1 **Role of the Winter Service Manager**

4.2 **Role of the Winter Service Duty Officers**

4.2.1 Winter Service Patrol mobilisation,

4.2.2 Proposals for precautionary and additional de-icing treatments when low confidence forecasts are issued for variable road and weather conditions,

4.2.3 Proposals for monitoring the effectiveness of de-icing materials,

4.2.4 Road closure and snow gate operational procedures,

4.2.5 Proposals for dealing with areas requiring special attention,

4.2.6 Proposals for using alternative de-icers in extreme temperatures.

5. LIAISON

5.1.1 Liaison with:

(i) the Police,

(ii) the Traffic Scotland Operations and Infrastructure Services Contractor,

(iii) adjacent road and highway authorities,

(iv) adjacent Trunk Road operating companies including DBFOs, and

(v) Network Rail.

6. COMMUNICATION

6.1.1 Communication with:

(i) the Director,

(ii) the police,

(iii) the Traffic Scotland Operations and Infrastructure Services Contractor,

(iv) adjacent road and highway authorities, and

(v) adjacent Trunk Road operating companies including DBFOs.

7. MUTUAL AID ARRANGEMENTS

7.1 Mutual Aid

7.1.1 A statement explaining what Mutual Aid arrangements are in place, including contact details.

8. WINTER SERVICE PATROLS

8.1 Winter Service Plant and Reporting

8.1.1 Winter Service Plant provided by the Operating Company for the Winter Service Patrols shall be as referred to in Appendix WSP1 to Annex 7.2/J of this Part.

8.1.2 A Winter Service Patrol Report shall be provided by the Operating Company in the format referred to in Appendix WSP1 to Annex 7.2/J of this Part.

9. TREATMENT ROUTES

9.1.1 The Operating Company shall provide the following information in Appendix WSP2 to Annex 7.2/J of this Part:

(i) precautionary treatment routes, including sections shared with an adjacent road authority,

(ii) contingency plans for alternative access to precautionary treatment routes where normal access is prevented due to weather related or other Incidents, and

(iii) locations of de-icing material loading points.

9.1.2 The Operating Company shall provide details of cycling facilities in urban areas in Appendix WSP2 to Annex 7.2/J of this Part.

10. SNOW AND ICE CLEARANCE

10.1.1 Description of arrangements and resources for managing snowfall. The Winter Service Plan shall demonstrate how all carriageways shall be maintained free from snow or ice as far as is reasonably practicable and in accordance with Annex 7.2/D of this Part.

10.1.2 Road closure procedure including use of snow gates.

10.1.3 Prolonged snowfall strategy, including use of additional Winter Service Plant and operative resources.

10.1.4 Snow and ice clearance shall be carried out in accordance with Annex 7.2/K of this Part.

10.1.5 Arrangements for safe clearance of snow or ice from wide single carriageways.

10.1.6 Arrangements for safe clearance of snow or ice adjacent to vertical concrete barriers.

10.1.7 Treatment strategy for bridge service roads, footways (including those on bridge decks), footpaths and cycling facilities including location of salt bins where applicable in accordance with Annex 7.2/E of this Part.

10.2 Plans showing the location of the footways (including those on bridge decks), bridge service roads, footbridges and cycling facilities.in Categories A, B, C and D.

11. FREEZING RAIN/RAIN FALLING ON EXTREMELY COLD SURFACES

11.1 Advance Planning

11.1.1 Advanced Planning for freezing rain/rain falling on extremely cold surfaces should include as a minimum:

(i) Arrangements for liaison with the police, Traffic Scotland Operations and Infrastructure Services Contractor and other interested parties.

(ii) Risk Assessments.

11.2 Operational Arrangements

11.2.1 Operational arrangements for freezing rain/rain falling on extremely cold surfaces should include as a minimum:

(i) Details of treatment regimes in advance of, during and following a freezing rain event.

(ii) Arrangements for monitoring.

11.3 Hazard Mitigation

11.3.1 Hazard mitigation for freezing rain/rain falling on extremely cold surfaces should include as a minimum:

(i) Arrangements for informing road users including use of Variable Message Signs.

(ii) Road closure procedure, rolling blocks and convoy arrangements.

12. DE-ICING MATERIALS

12.1 Details

12.1.1 For each type of de-icing material, including alternatives:

(i) detailed specification of material,

(ii) storage conditions, system types and capacities,

(iii) details on testing methods, including their type and frequency,

(iv) state suppliers, including any secondary suppliers,

(v) state any importers used to meet supply demands,

(vi) stock levels (total and split by location), and

(vii) details of re-stocking, including procurement mechanism and details of stock level monitoring.

12.1.2 Details of de-icing materials stocks shall be provided by the Operating Company in Appendix WSP3 to Annex 7.2/J of this Part and shall take account of the minimum stock levels to be maintained as referred to in the Appendix.

13. WINTER SERVICE PLANT

13.1.1 The Operating Company's front line Winter Service Plant and reserve Winter Service Plant available within the Unit for the Winter Service shall be provided by the Operating Company in Appendix WSP4 to Annex 7.2/J of this Part.

13.1.2 The Operating Company's additional Winter Service Plant available through contingency arrangements and arrangements for its mobilisation for the Winter Service shall be provided by the Operating Company in Appendix WSP4 to Annex 7.2/J of this Part.

13.1.3 Loading Winter Service Plant available within the Unit for loading such front line, reserve and additional Winter Service Plant shall be provided by the Operating Company in Appendix WSP4 to Annex 7.2/J of this Part.

13.2 Calibration of Winter Service Plant

13.2.1 Calibration arrangements and procedures for front line and reserve Winter Service Plant, in accordance with paragraphs 4.1.7, 4.1.8 and 4.1.9 of this Part.

13.2.2 The Winter Service Plan will describe how the requirements of this Part shall be met and where and how the calibration Certificates will be held.

14. COMPOUNDS, DEPOTS AND FACILITIES

14.1 A schedule of compounds, depots and facilities covering the network within the Unit shall be provided by the Operating Company in Appendix WSP5 to Annex 7.2/J of this Part.

15. MAPS DRAWINGS AND GRAPHICAL INFORMATION

15.1 Maps

15.1.1 Provide scale maps for the following:

(i) precautionary treatment routes for carriageways, including on/off slips, service roads, car parks and depots,

(ii) precautionary treatment routes for bridge service roads, footways, footbridges and cycling facilities,

(iii) reactive treatment routes for footways, footbridges and cycling facilities,

(iv) Winter Service Patrol routes,

(v) ploughing routes for carriageways, including on/off slips and depots,

(vi) road sensors including sensor types and where these sites are equipped with weather cameras, (map to differentiate between single and bi-directional cameras),

(vii) snow gates

(viii) snow fences,

(ix) shelter belts,

(x) snow poles,

(xi) snow or ice and hidden message signs,

(xii) salt bins,

(xiii) vertical concrete barriers,

(xiv) other facilities, and

(xv) where route based forecasting is not used, climatic domains and the sensors used to generate domain forecasts.

16. COMPILING AND MAINTAINING RECORDS

17. SNOW POLES

17.1 Maintenance, replacement of damaged or missing snow poles, refurbishment and reserve stocks.

18. SNOW GATES

19. MAINTENANCE, OPERATION AND LIAISON SALT BINS

19.1 Stock level monitoring and replenishment procedures.

20. SALT MEASUREMENT APPARATUS

20.1 Equipment and locations and recording methods.

This is Annex 7.2/B to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/B – Winter Service Report

SCOTTISH MINISTERS' REQUIREMENTSSCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/B – Winter Service Report

1 The Winter Service report shall provide:

1.1 An executive summary of the annual report.

1.2 An overview and review of the service provided.

1.3 A summary of key performance reports.

1.4 Information on significant events and related actions.

1.5 An assessment of the accuracy of weather forecasts provided.

1.6 An assessment of road sensor performance.

1.7 An analysis of the ability of the Management System to capture reported Non-Conformances.

1.8 Details of innovations and improvements implemented.

1.9 Recommendations for continuous improvement.

1.10 Details of actions taken during periods of low confidence forecasting for variable and marginal winter weather conditions.

1.11 Analysis for the performance of Winter Service Plant, including reserve Winter Service Plant.

1.12 Details of Mutual Aid offered and received.

1.13 Details of action taken during extreme low temperatures and an analysis of the results.

1.14 Details of the use of additional Winter Service Plant and an analysis of the performance.

This is Annex 7.2/C to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/C – Winter Service Patrols

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/C – Winter Service Patrols

1. The Category A Winter Service Patrols are provided in Table 7.2.C.1.

Table 7.2.C.1 – Category A Winter Service Patrol Routes

Forth Bridges Unit	
Route	**Category**
A90	A
M90	A
A90/M90	A
A823 (M)	A

2. Details of the Operating Company's Winter Service Patrol routes shall be as provided by the Operating Company in Table 7.2.J.2 of Appendix WSP1 to Annex 7.2/J of this Part.

3. Patrol reports shall be recorded in accordance with Table 7.2.J.3 of Appendix WSP1.

This is Annex 7.2/D to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/D – Snow Clearance

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/D – Snow Clearance

Table 7.2.D.1 – Snow Clearance

Condition Criteria	Category A Patrol Routes		Non Category A Patrol Routes	
	Dual Carriageways & Motorways		Dual Carriageways	Wide Single 2+1 (WS 2 + 1) & Single Carriageways
	Number of Existing Lanes		Number of Existing Lanes	
	2	3 or More	2	1 or 2 (WS 2 + 1)
	Minimum number of lanes in each direction free from ice and snow as far as is reasonably practicable		Minimum number of lanes in each direction free from ice and snow as far as is reasonably practicable (except where snow gates)	
Snow at any time	1	2	1	1
Following clearance of minimum lanes or the cessation of snow fall all lanes are to be clear of snow	6 hours	6 hours	12 hours	12 hours

This is Annex 7.2/E to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/E –Footways (including those on bridge decks), Footbridges and Category A, B, C and D Footways, Footbridges and Cycle Facilities

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/E –Footways (including those on bridge decks), Footbridges and Category A, B, C and D Footways, Footbridges and Cycle Facilities

Table 7.2.E.1 –Footways (including those on bridge decks), Footbridges Footways, Footbridges and Cycle Facilities Categories A, B, C and D and Cycle Facilities– Response Times and Clearance Requirements for Ice

Categories	Requirements
A and B	Apply de-icing treatment before 08.00 hours each morning to any ice which has formed.
C	Clear all ice by 17.00 hours on the same day the ice formed excluding Saturdays and Sundays when the area shall be cleared by 17.00 hours on the Monday immediately following.
A, B and C	Following clearance of ice or if ice has melted naturally during the day, spread anti-icing materials to prevent ice formation on the cleared surfaces in accordance with paragraph 3.1.17 of this Part.
D	These footways, footbridges and cycleways shall receive treatment when required by the Director.

Table 7.2.E.2 Footways, Footbridges and Cycle Facilities Categories A, B, C and D – Response Times and Clearance Requirements for Snow or Ice Occurring Together

Categories	Requirements			
	General	**Between 06.00 and 18.00 hours**	**Between 08.00 and 17.00 hours**	**Treatments out with daytime hours**
A and B	Between the hours of 06.00 and 18.00, commence snow clearing as soon as practicable to prevent compaction by traffic. Ploughing and snow blowing on bridge decks should be continuous thereafter	Clear all snow within 2 hours of snow ceasing to fall. On wide Routes, 1.2 metre minimum width shall be cleared initially.		Clear snow when required by the Director.

Categories	Requirements			
	to prevent a build up of snow.			
	General	**Between 06.00 and 18.00 hours**	**Between 08.00 and 17.00 hours**	**Treatments out with daytime hours**
A,B and C		Following clearance of snow, spread anti-icing materials to prevent ice formation on cleared surfaces in accordance with paragraph 3.1.17 of this Part. Note brine shall not be used as the anti-icing agent where compacted snow or ice lenses remain on the surface of the Route.	Following clearance of snow, spread anti-icing materials to prevent ice formation on cleared surfaces in accordance with paragraph 3.1.17 of this Part. Note brine shall not be used as the anti-icing agent where compacted snow or ice lenses remain on the surface of the Route.	
D	These footways, footbridges and cycleways shall receive treatment when required by the Director.			

Table 7.2.E.3 – Category A Footways (including those on bridge decks), Footbridges and Cycle Facilities within the Unit

All footways, footbridges and cycle facilities within the Unit shall be treated as category A.

This is Annex 7.2/F to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/F – Location of Known Areas Requiring Special Attention

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/F – Location of Known Areas Requiring Special Attention

Table 7.2.F.1 – Frost Susceptible Areas

Road Number	Location of Frost Susceptible Areas
None	

Table 7.2.F.2 – Water Run Off Locations

Road Number	Water Run Off Location
None	

Table 7.2.F.3 – Gradient Locations

Road Number	Gradient Location
None	

This is Annex 7.2/G to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/G – Location Details

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/G – Location Details

Locations of Snow Fences, Snow Gates, Salt Bins: as shown in Table 7.2.G.1.

Locations of Road Sensors Forecast Sites: as shown in Table 7.2.G.3.

Locations of Snow Poles: as shown in Table 7.2.G.4.

Locations of vertical concrete barriers: as shown in Table 7.2.G.5.

Table 7.2.G.1 – Locations of Snow Fences, Snow Gates and Salt Bins

Road Number	Snow Fence (Metres)	Snow Gates (Number)	Salt Bins (Number)
Public car park at Ferrymuir Gait	0	0	8
A90	0	0	7

Table 7.2.G.3 – Locations of Road Sensors and Forecast Sites

Road Number	Location
M90	Halbeath

Table 7.2.G.4 – Locations of Snow Poles

Route XX					
Link	**Section**	**Start Chainage**	**End Chainage**	**Spacing (metre)**	**Number**
None					

Table 7.2.G.5 – Locations of Vertical Concrete Barriers

Route XX					
Link	**Section**	**Start Location**	**End Location**	**No.**	**Link**
None					

This is Annex 7.2/H to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/H – Records

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/H – Records

1 Records shall include the following:

(i) decisions taken, when and by whom,

(ii) planned and actual treatment Records,

(iii) planned and actual response times achieved,

(iv) planned and actual commencement times,

(v) planned and actual Route times,

(vi) planned and actual spread rates,

(vii) observations and actions taken by the Winter Service Patrols,

(viii) output from Winter Service Plant on-board data loggers,

(ix) Winter Service Plant down time and software faults,

(x) Winter Service Plant deployment Records (including vehicle location Records) and driver and operator logs,

(xi) logs (both manual and electronic) for telephone, electronic mail and two way communication calls,

(xii) loading point de-icing stocks and replenishment orders,

(xiii) ice prediction system Records,

(xiv) weather forecasts and actual weather experienced,

(xv) complaints by members of the public and road users,

(xvi) accidents during winter conditions,

(xvii) road closures due to winter conditions,

(xviii) weights and volumes as appropriate for the amount of de-icing material(s) spread on each Route for each treatment,

(xix) pre- and mid-season road sensor calibration systems,

(xx) Winter Service Plant calibration Certificates, and

(xxi) actual salt stocks held.

This is Annex 7.2/I to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/I – Potassium Acetate Treatment

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/I – Potassium Acetate Treatment

Potassium acetate treatment shall be applied at the locations specified in Table 7.2.I.1 including those parts of the Trunk Road 400 metres beyond the limits of each of the Forth Road Bridge and the Queensferry Crossing.

Table 7.2.I.1

Road Number	**Location**
A90	Forth Road Bridge
M90	Queensferry Crossing

This is Annex 7.2/J to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/J – Appendices for Winter Service Plan

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/J – Appendices for Winter Service Plan

APPENDIX WSP1

Table 7.2.J.1 – Winter Service Plant for all Winter Service Patrols

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.2 – Winter Service Patrol Routes

Network 1

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Network 2

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.3 – Winter Service Patrol Report Record

Patrol Route……. Date……. Information checked by…….

Winter Service Patrol start and end time	**Weather conditions for Winter Service Patrol Route**		**Assessed road condition (by driver) (X)**				**Assessed residual salt level (by driver) (X)**			**Action implemented (use symbols provided below)***						**Route salted prior to patrol (X)**		
	Air (°C)	Road Surface temperature (°C)	Snow	Icy	Wet	Dry	High	Medium	Low	Action code	Treatment Type	Spread rate (g/m^2)	Approximate location of salting or other action	Treatment Start Time	Treatment End Time	Yes	No	Time of salting

*Action symbols:

1	Spot treatment as instructed by the Winter Service Duty Officers.	2	Spot treatment as determined by driver.
3	Route treatment as advised by the Winter Service Duty Officers.	4	Route treatment as determined by driver.
5	Attend to runoff or seepage on surface.	6	Remove obstruction (e.g. dead dog, fallen tree, and other obstructions.) from surface.
7	Pre-wetted Salt	8	Dry Salt
9	Potassium Acetate		

APPENDIX WSP2

Table 7.2.J.4 - Precautionary Treatment Routes determined by the Operating Company (20 gramme routes) 2 Carriageway Routes, 1 Footpath Route.

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.4 - Precautionary Treatment Routes determined by the Operating Company (40 gramme routes) 2 Carriageway Routes, 1 Footpath Route.

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.5 - Ploughing Routes determined by the Operating Company

COMMERCIALLY SENSITIVE INFORMATION REDACTED

APPENDIX WSP3

Table 7.2.J.6 – Operational Salt Stock Levels

Operating Company	Minimum Salt Stock Level at Start of Season (tonnes)
Forth Bridges Unit	3,200

Operating Company	Minimum Potassium Acetate Stock Level at Start of Season (litres)
Forth Bridges Unit	120,000

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.7 –Brine Production and Storage

COMMERCIALLY SENSITIVE INFORMATION REDACTED

APPENDIX WSP4

The Operating Company's Winter Service Plant

Table 7.2.J.8 - Front line Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways- Minimum 4 No 9 cum vehicles: Minimum 2 No 6 cum vehicles (Winter patrols); 2 No snow blowers minimum

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.9 - Front line Winter Service Plant permanently available and located in the Unit for the Winter Service for bridge service roads, footways footbridges and cycling facilities

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.10 - Reserve Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways footways footbridges and cycling facilities

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.11 - Additional Winter Service Plant

COMMERCIALLY SENSITIVE INFORMATION REDACTED

Table 7.2.J.12 - Loading Winter Service Plant permanently available and located in the Unit at each loading point

COMMERCIALLY SENSITIVE INFORMATION REDACTED

APPENDIX WSP5

The Operating Company's Compounds, Depots and Facilities

Table 7.2.J.13 – The Operating Company's Compounds, Depots and Facilities

COMMERCIALLY SENSITIVE INFORMATION REDACTED

This is Annex 7.2/K to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/K – Requirements for De-Icing Material Spread Rates

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/K – Requirements for De-Icing Material Spread Rates

The tables in this Annex 7.2/K set out the decision making process for Winter Service:

Table 7.2.K.1 – Decision Making Matrix for Winter Service

<table>
<tr><th colspan="4">Decision Making Matrix for Winter Service</th></tr>
<tr><td></td><td colspan="3">Predicted Road Conditions</td></tr>
<tr><td>Road Surface Condition</td><td>Wet</td><td>Wet Patches</td><td>Dry</td></tr>
<tr><td>May fall below 1°C</td><td rowspan="3">Spreading before frost</td><td>Spreading before frost (See note A)</td><td>No action likely, monitor weather (See note A)</td></tr>
<tr><td rowspan="4">Expected to fall below 1°C</td><td colspan="2">Spreading before frost (see note B)</td></tr>
<tr><td colspan="3">Spreading after rain stops</td></tr>
<tr><td colspan="3">Spreading before frost and after rain stops (see note C)</td></tr>
<tr><td colspan="2">Spreading before frost</td><td>Monitor weather conditions</td></tr>
<tr><td>Expected snow</td><td colspan="3">Spreading before snow</td></tr>
<tr><td rowspan="3">Freezing Rain</td><td colspan="3">Spreading before rainfall (see note C)</td></tr>
<tr><td colspan="3">Spreading during rainfall (see note C)</td></tr>
<tr><td colspan="3">Spreading after rainfall (see note C)</td></tr>
<tr><td colspan="4">The decision to undertake precautionary treatments should, if appropriate, be adjusted to take account of residual salt or surface moisture.
All decisions should be evidence based, recorded and require continuous monitoring and review.</td></tr>
</table>

Note A. Particular attention should be given to any possibility of water running across carriageways and such locations should be monitored and treated as required.
Note B. When a weather warning contains reference to expected hoarfrost considerable deposits of frost are likely to occur and close monitoring will be required. Particular attention should be given to the timing of precautionary treatments due to the possibility that salt deposited on a dry road may be dispersed before it can become effective.
Note C. Under these circumstances rain will freeze on contact with running surfaces and full pre-treatment should be provided even on dry roads. This is a most serious condition and should be monitored closely and continuously throughout the danger period.

Forecast Weather and Road Conditions Status Codes and Treatment Rates

Table 7.2.K.2 sets out the spread rates for precautionary treatments. Rate of spread for precautionary treatments may be adjusted to take account of residual salt or surface moisture unless stated otherwise.

A road is considered to be only damp when water is present that clearly darkens the road surface, but there is no spray or water flowing across the surface. A wet road is one where minimal spray is evident and there is no water flowing across the surface and no drops of water are formed by trafficking. A very wet road is one where trafficking causes drops of water to form in the air; higher spread rates are required for very wet roads or successive treatments are needed.

National research has shown that salt spreading equipment may be delivering more or less than the targeted salt spread rates within the traffic Lanes. The research has also shown that residual salt levels reduce remarkably during the initial 12 hours after distribution regardless of whether dry, treated or pre-wetted salting techniques are employed.

Protection is only achieved when salt is fully dissolved before forecast conditions occur and treatments should be timed to take account of this.

Spread rates for pre-wetted salt are the combined weight of dry rock salt and brine combined at 70:30 proportion by weight respectively with a maximum brine concentration of 23 percent salt.

Treatments should be carried out, wherever possible after traffic has dispersed standing water. The rates in the table below are for precautionary salt treatment prior to snowfall which is essential to form a de-bonding layer and snow clearance.

Operational experience has indicated that thin surfacing courses do not benefit from an increase in dosage above that required for hot rolled asphalt but that the effect of residual salt on the carriageway is reduced particularly in areas of low traffic, and as such treatment can be applied more frequently. Treatment of thin surface courses should be treated with caution: residual salt should not be relied upon to provide protection: and if there is any hint of moisture being present a pessimistic view of the forecast should be taken.

Table 7.2.K.2 – Spreading Rates for Precautionary Treatments Matrix

Spreading Rates for Precautionary Treatments Matrix			
Road Surface Condition		Frost Susceptible/surface water run-off area (grammes/square metre)	Road Surface Wet (grammes/square metre)
A.	RST higher than plus 1°C	*0*	*0*
B.	RST lower than or equal to plus 1°C but higher than minus 2°C	*10 to 20*	*10 to 20*
C.	RST lower than or equal to minus 2°C but higher than minus 5°C	*10 to 20*	*10 to 20*
D.	RST lower than or equal to minus 5°C	*20*	*20*
E.	RST lower than or equal to plus 1°C but higher than minus 2°C following rain	*20*	*30*
F.	RST lower than or equal to minus 2°C but higher than minus 5°C following rain	*30*	*40*
G.	RST lower than or equal to minus 5°C following rain (see note B)	*40*	*40*
H.	Hoar Frost	*20*	*20*
I.	Freezing Fog	*10*	*20*
J.	Freezing Rain	*40 (See Table 7.2.K.1)*	*40 (See Table 7.2.K.1)*
K.	Snow Accumulations up to 30mm	*30*	*40*
L.	Snow Accumulations over 30mm	*40*	*40*
M.	Hard Packed Snow/Ice	*See Table 7.2.K.4*	*See Table 7.2.K.4*
Note A. "RST" means road surface temperature. Note B. Refer also to paragraph 5.4 of this Part.			

Table 7.2.K.3 –Precautionary Treatment Potassium Acetate Spreading Rates

ROAD SURFACE CONDITION	SPREADING RATE (litres/square metres)
Road surface temperature lower than or equal to plus 1°C but higher than minus 2°C	0.0156
Road surface temperature lower than or equal to minus 2°C but higher than minus 5°C	0.0312
Frost and road surface temperature lower than -5°C	a minimum of 0.0312 which should be increased with manufacturer's recommendations
Snow	
Freezing conditions after rain	

Table 7.2.K.4 –Spreading Rates for Snow or Ice Clearance Matrix

Clearance Matrix					
Spreading Rates for Snow or Ice					
Road Surface Condition	**Treatment**				
	Spreading (grammes/square metre)	**Ploughing**	**Blowing**	**Alternative De-icer**	**Ice Breaker**
Ice Formed	20 to 40	No	No	Where applicable	No
Snow covering of less than 30mm	20	Yes	No	No	No
Snow covering exceeds 30mm	20 to 40	Yes	No	No	No
Snow accumulations due to prolonged snowfall	20 to 40	Yes (continuous)	Where applicable	No	No
Hard packed snow/ice less than 20mm thick	20 to 40 (successive treatments)	No	No	Yes	Where applicable
Hard packed snow/ice	salt/abrasive (successive treatments)	No	No	Yes	Yes

This is Annex 7.2/L to Schedule 7 Part 2 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/L – Salt Stock Monitoring Report

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 7 PART 2

WINTER SERVICE

ANNEX 7.2/L – Salt Stock Monitoring Report

Operating Company	Reporting Month
Salt used during reporting period	
Actual salt stocks held at the end of the reporting period	
Salt orders placed and deliveries received during reporting period	
Salt orders expected during next reporting period (include imports, dates deliveries expected & tonnage expected)	
Forecast usage during next reporting period	
Any other items to report (such as reduced treatment networks, any notable arrangements with local authorities, etc.)	