BEAR Scotland

M80 Stepps to Haggs DBFO Contract

Winter Service Plan

M80 STEPPS TO HAGGS DBFO CONTRACT
M80 DBFO WINTER SERVICE PLAN

Winter Service Plan

1 October 2023 to 15 May 2024

Controlled Copy No……

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Checked By	<<Redacted>>	November 2023
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Reviewed By	<<Redacted>>	November 2023

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Please note that the latest version of the Winter Service Plan consented to by the Scottish Ministers can be found on the M80 DBFO website at www.bearscot.com/m80

REGISTER OF CONTROLLED COPIES

Ref	Name of Holder	Designation	Company
1	<<Redacted>>	Project Director	BEAR Scotland Ltd
2	<<Redacted>>	M80 DBFO Operational / Winter Manager	BEAR Scotland Ltd
3	<<Redacted>>	M80 DBFO Area Manager	Transport Scotland
4	<<Redacted>>	National Operations Manager - Resilience	Transport Scotland
5	<<Redacted>>	Scottish Ministers Site Representative	PAG
6	<<Redacted>>	Scottish Ministers Agent	PAG
7	<<Redacted>>	Company Representative	HMG
8	<<Redacted>>	South East Operating Company	BEAR Scotland Ltd
9	<<Redacted>>	South West Operating Company	Amey
10	<<Redacted>>	M8 DBFO	Amey
11	<<Redacted>>	Winter Manager	North Lanarkshire Council
12	<<Redacted>>	Winter Manager	Falkirk Council
13	<<Redacted>>	Roads Policing	Police Scotland
14	<<Redacted>>	Force Control Room	Police Scotland
15	<<Redacted>>	Operations Manager	Traffic Scotland
16	<<Redacted>>	SE Unit Operating Company Rep.	BEAR Scotland Ltd
17	Duty Officer	Duty Officer – <<Redacted>>	BEAR Scotland Ltd
18	Duty Officer	Duty Officer – <<Redacted>>	BEAR Scotland Ltd
19	Duty Officer	Duty Officer – <<Redacted>>	BEAR Scotland Ltd
20	Various (on rota)	South East Network Hub	BEAR Scotland Ltd

1 INTRODUCTION

This Winter Service Plan has been prepared by BEAR Scotland Ltd acting in their role as O&M Work Contractor to Highway Management (Scotland) Ltd., the Company otherwise known as HMG. Where references to BEAR Scotland Ltd are made within this document, these carry the same meaning as references to The Company or HMG.

BEAR Scotland Ltd is a Scottish Registered company with three shareholders (Jacobs, Breedon and Eurovia), who will carry out the Operation and Maintenance of the M80 O&M Works Site between Stepps and Haggs on behalf of Highway Management (Scotland) Limited.

Whilst the Winter Service Plan is independent from the Emergency Response Plan, the two documents must be read in conjunction with each other to ensure the appropriate delivery of both the Winter and Emergency Response Services. This Winter Service Plan is in accordance with Schedule 4, Part 2, Appendices C and D and Schedule 4 Part 5 Series 2801AR to 2807AR of the O&M Works Contract. The BEAR Scotland Winter Service Plan is updated annually following a review of the previous season with any incidents or lessons learned from previous winter incorporated into the latest issue. A debrief at end of each winter period is carried out with operatives and staff and any snow events are discussed. At the start of each winter season the Winter Service Manager will have a meeting with operatives and Winter Service Duty Officers to discuss the previous winter season and any new additions to the Winter Service Plan. A winter gang-pack is then briefed to operatives and Winter Service Duty Officers and each person is supplied with an individual copy. The session will be focused on areas that can be improved upon from the previous winter season as well as detailing any improvements or innovations that will be implemented in the coming season.

1.1 Winter Service Period

The Winter Service Period for the M80 O&M Works Site will be from 1st October 2023 to 15th May 2024. If winter conditions shall occur out with this Winter Service Period BEAR Scotland shall provide and maintain the Winter Service in accordance with Schedule 4 Part 2 for the duration of such winter conditions. BEAR Scotland shall confirm the activation of this requirement with the Scottish Ministers Site Representatives.

2 MANAGEMENT ARRANGEMENTS

2.1 Winter Service Manager

2.1.1 Name

The Winter Service Manager for the M80 O&M Works Site will be <<Redacted>>.

2.1.2 Experience

<<Redacted>> is the M80 DBFO Operational Manager, and has been involved in the provision of the Winter Service on the trunk road network since 2011. David has experience working on the South East 3G Trunk Road Contract and has been part of the Winter Service delivery on the M80 DBFO Contract since the 2011-2012 Winter Service Period, taking on the role of Winter Service Manager in advance of the 2021-2022 Winter Service Period. <<Redacted>> has attended Vaisala winter training courses as well as attending internal and external seminars and courses to further broaden his knowledge.

2.1.3 Responsibilities

The Winter Service Manager is responsible for producing the Winter Service Plan for approval by the Scottish Ministers. He is then responsible for the operation, review and development of that Plan throughout the Winter Service Period, thus ensuring the M80 DBFO Company fully discharges its responsibilities under the contract.

The Winter Service Manager has overall responsibility for winter maintenance activities including but not limited to:

- collection and management of weather data;
- maintaining salt stock levels and their storage facilities;
- achieving response times for precautionary treatment and snow clearance;
- plant;
- communications;
- the ice prediction and weather radar software systems;
- training of staff and operatives;
- preparation and updating of rotas for Duty staff;
- maintaining electronic and manual records;
- providing winter service reports as required by Sch.4, Pt.2, Cl.3.2.4 (v);
- liaison with third parties;
- Assist the Scottish Ministers in the production of Winter Service publicity leaflet if required;
- Liaising with Transport Scotland's MART.

2.2 Winter Service Duty Staff

2.2.1 M80 DBFO Winter Service Duty Officers

The Winter Service Manager will be supported by three M80 DBFO Winter Service Duty Officers (M80 WSDOs) working on a rota basis, who will be available 24 hours per day throughout their week on duty. The primary responsibilities of the M80 DBFO Winter Service Duty Officers are to interpret the weather forecast, make decisions on treatments, prepare the Daily Action Plan and ensure that actions are completed within the required timescales.

There will be three nominated M80 DBFO Winter Service Duty Officers:

- <<Redacted>>
- <<Redacted>>
- <<Redacted>>

The M80 WSDO can be contacted via the South East Network Hub number provided in 2.3.2.

2.2.2 South East NMC Winter Service Duty Officers

Based in the South East Network Hub in South Queensferry when any winter action is being undertaken across the South East trunk road network, the on rota South East Winter Service Duty Officer (SE WSDO) performs the crucial task of monitoring overnight conditions on the M80 DBFO network via the weather station data and any updated forecast information, and will relay significant changes to the M80 WSDO as necessary for their action.

The South East Network Hub is staffed on a 24/7 basis throughout the year, with the SE WSDO present within the Network Hub when any overnight winter action is planned. Additional M80 DBFO resources may be available to assist at the South East Network Hub, but in any severe weather event the M80 DBFO winter operation will generally be managed by M80 DBFO staff at BEAR's Chryston Depot.

2.2.3 Qualifications

All the M80 DBFO Winter Service Duty Officers and South East Winter Service Duty Officers mentioned in 2.2.1 and 2.2.2 are fully trained in basic road meteorology including the use and interpretation of ice prediction systems.

2.2.4 Experience

All M80 DBFO Winter Service Duty Officers will have previous experience of monitoring the road sensor system and making decisions on treatments, resulting from the receipt of the forecast information from the supplier. All newly trained M80 WSDOs will be mentored by the M80 DBFO Winter Service Manager or an experienced M80 DBFO Winter Service Duty Officer until a detailed knowledge of particular conditions of the M80 O&M Works Site has been gained.

2.2.5 Responsibilities

M80 DBFO Winter Service Duty Officer (M80 WSDO): the M80 WSDO will:

- Interpret the daily forecast received, liaise with the weather forecaster, decide on the required treatment and subsequently prepare the Daily Action Plan.
- Where it is not possible to predict adverse conditions, the WSDO will be responsible for ensuring that the reactive requirements of the contract are implemented within the required timescales.
- Where winter action is required, the WSDO will organise the winter drivers and ensure contractual requirements are met in relation to response and treatment times.
- The WSDO will manage each winter treatment operation, ensuring all records are completed and stored electronically in the required shared drive, giving access to the Scottish Ministers via the customer access area of BEARNET. Hard copies are filed at BEAR's Chryston Depot.
- All decision making will be made by the Winter Service Duty Officer, who will liaise with the Winter Service Manager if necessary.

South East Winter Service Duty Officer (SE WSDO): the SE WSDO, based in BEAR Scotland's South Queensferry offices, will:

- monitor the ice prediction system and notify the M80 DBFO Winter Service Duty Officer of any changes to the initial weather forecast.
- Upon receipt of updated forecast information from the weather forecast overnight, the SE WSDO will contact the M80 WSDO to inform them of this for their action.
- The SE WSDO will be contacted by winter drivers at the start and end of planned actions and will record start and end times and weights, and will contact the M80 WSDO should these fall out with specified limits.
- The SE WSDO will have the authority to call upon the M80 WSDO as they deem necessary.
- Decision making with regards pre-treatments or reactive winter actions on the M80 DBFO is **NOT** the responsibility of the SE WSDO. Decision making is managed by the M80 WSDO and/or M80 WSM.

2.3 Monitoring Arrangements

2.3.1 Monitoring Arrangements

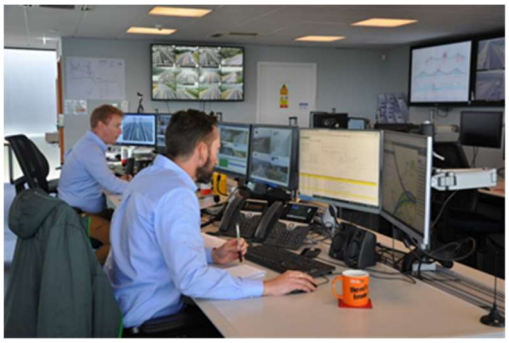
System monitoring will be carried out by the on rota South East Winter Service Duty Officer (SE WSDO) based in the South East Network Hub in BEAR Scotland's South Queensferry Office. This service is shared with our South East Unit. The SE WSDO will monitor road conditions and contact the M80 DBFO Winter Service Duty Officer should any issues arise in order that the carriageway is treated to keep it free from snow and ice. They will monitor road conditions overnight and assess conditions relative to the original forecast received, reporting any significant changes to the M80 DBFO Winter Service Duty Officer.

The following aids will be used to assist in this process:

- contact with expert weather forecaster provider;
- feedback from inspectors during normal working hours;
- feedback from winter drivers on the network;
- monitoring of ice sensors;
- monitoring RST trend against forecast;
- use of weather station & Traffic Scotland cameras;
- weather radar;
- thermal maps where available;
- communications from external parties;
- mobile road surface temperature gauges fitted on patrol and both frontline vehicles.

The SE WSDO will have direct access to the M80 WSDO at all times via a dedicated mobile telephone number.

2.3.2 South East Network Hub



A joint M80 DBFO / South East Winter Control Room is based in BEAR Scotland's South Queensferry office, with this commonly known as the South East Network Hub. This will be staffed on a rota basis by a team of Incident Liaison Officers. On any night where winter action is planned on the network, the on rota South East Winter Service Duty Officer will be present in the Network Hub.

The South East Network Hub operates 24 hours per day, 7 days per week throughout the year, with at least two members of staff on duty at all times.

Issues related to the winter service on the trunk road network can be relayed to the South East Network Hub in the first instance by contacting the following number:

- 0800 028 1414

The South East Network Hub shall have easy access to all relevant contact telephone numbers as well as access to winter maintenance systems such as Vaisala RoadDSS, MetDesk, Locatu vehicle tracker, communications log database and weather radar.

During periods of high operational activity on the network (snow clearance, extensive precautionary treatment etc.) the South East Winter Service Duty Officer will be available to assist the M80 DBFO Winter Service Duty Officer as required. This decision will be taken by the M80 DBFO Winter Service Duty Officer as determined by weather conditions. See also 2.2.5.

The communications setup within the Network Hub allows for direct contact at all times with the emergency services.

Additional resources, subject to circumstances, may also be deployed in the South East Network Hub, but in any severe weather event the M80 DBFO winter operation will be managed entirely by the M80 WSDO at BEAR's Chryston Depot.

2.4 Personnel Resources

The resources detailed below will be specific to the M80 DBFO with exception to the Incident Liaison Officers which will be shared with BEAR South East NMC and will be the minimum numbers involved in delivering the Winter Service for the M80 Stepps to Haggs O&M Works Site:

- 1 of Winter Service Manager; supported by
- 3 of M80 DBFO Winter Service Duty Officers (M80 WSDOs);
- 5 of South East Winter Service Duty Officers (SE WSDOs);
- 9 of Winter Drivers;
- 2 of Winter Patrol Drivers.

2.5 Call-Out Arrangements

2.5.1 Call-out arrangements during normal working hours

A winter roster will be prepared at the beginning of the Winter Service Period for M80 DBFO staff and operatives involved in the Winter Service for that period. The rota will include contact details for all personnel involved and controlled copies will be issued to each individual prior to the commencement of the Winter Service Period.

Any changes to the rota will be communicated to the South East Winter Service Duty Officer for that week by the M80 DBFO Winter Service Duty Officer via email, confirming changes and any revised contact details.

During normal working hours it will be the responsibility of the M80 DBFO Winter Service Duty Officer to ensure that a clear line of communication is kept to all key personnel involved in providing the Winter Service for that week.

It is not anticipated that there will be a significant number of call-outs during working hours from the beginning of November until the end of March. A shift system will be in place making Winter Drivers immediately available on the O&M Works Site during the normal working week. In this context, the normal working week is defined as all hours Monday to Friday. From 1st October to 31st October and from 1st April to 15th May, the normal working day will be 08:00 to 16:30 hours Monday to Friday.

2.5.2 Call-out arrangements out with normal working hours

It is the role of the M80 DBFO Winter Service Duty Officer outside normal working hours to ensure and confirm that the appropriate Winter Drivers are contacted and advised of the required winter action treatment. The personnel on the rota at any point will have to be available at all times to commence treatment on the carriageway within 60 minutes of a decision being made.

2.5.3 Contact arrangements during normal working hours

Each individual involved in providing the Winter Service shall be issued with a mobile phone to allow easy contact. When Winter Drivers are rostered for any given week, cognisance of this will be given when planning of their normal daily duties, ensuring that drivers can still have the ability to respond to any call to carry out a Winter Service action at short notice within the contractual response times.

2.5.4 Contact arrangements out with normal working hours

A standby rota will be prepared, detailing which individuals will be utilised in the event of Winter Service action being required. Telephone contact numbers will be available for all individuals and will be held on the BEAR Scotland Intranet.

2.5.5 Mobilisation times

BEAR Scotland's Chryston Depot has been sited in a location which easily accesses the M80 O&M Works Site gritting routes, and which is easily accessed by all Winter Drivers. This will ensure that Winter Drivers are consistently able to access the start of each precautionary treatment within one

hour of a decision being made. To assist in the speed of access to the gritting routes, spreaders will be pre-loaded on any night where an action is a possibility. It will be the responsibility of the depot supervisor to manage the pre-loading of the spreaders.

2.6 Communications Equipment

Good communication systems are essential for effective implementation of the Winter Service, and the following systems will be adopted:

- Telecommunications – land line and cellular GSM;
- Satellite tracking of BEAR Scotland vehicles;
- Email;
- Airwave system on all Winter Patrol vehicles;
- Push-to-talk radios (PTTs).

All BEAR Scotland depots are contactable by both land line telephone and facsimile. In addition, all M80 DBFO Winter Service Duty Officers, prime plant and winter maintenance vehicles will have individual GSM mobile telephones so that they can always be contacted. In the case of maintenance vehicles, hands-free mobile phones are fitted.

BEAR Scotland vehicles are fitted with an integrated satellite tracking system to deliver our communications needs and management system. This can also produce an auditable trail for the company.

BEAR Scotland implements a policy whereby all M80 WSDOs, SE WSDOs and Operations Supervisors will have a desktop personal computer or a laptop computer and will have their own individual email address. This is carried out by a Wide Area Network system in which the various secondary depots are linked by ISDN or analogue lines to the Central Office, which is in turn linked by Kilo stream or ISDN lines to the main central servers, which control the IT network.

Information and data can be exchanged quickly with our internal and external customers, Emergency Services, Statutory Authorities and between our shareholders utilising Microsoft Outlook email software.

In the 2021-2022 Winter Service period, push-to-talk radios were utilised on the M80 DBFO for the first time. These radios were fitted to M80 DBFO winter plant with relevant staff also receiving a radio. An effective means by which winter drivers and office-based staff can communicate, these radios will continue to be used as part of the M80 DBFO Winter Service. The PTTs used by BEAR Scotland on the M80 DBFO have a “M80 DBFO” call group setting, allowing communication between

staff and winter drivers on a localised M80 DBFO group, and also have another “Amey-BEAR” setting whereby BEAR can communicate with Amey in a much wider group should weather conditions necessitate this. The M80 DBFO group relates to the M80 DBFO Route 1, M80 DBFO Route 2 and winter patrol routes detailed in this Winter Service Plan.

2.7 Training for Managers and Other Staff

2.7.1 Details of previous training

Our current Winter Service Manager and all of our current M80 DBFO Winter Service Duty Officers and South East Winter Service Duty Officers have been trained in Basic Road Meteorology and the use of Ice Prediction Systems. All our current Winter Drivers have been trained to SVQ/City & Guilds level or equivalent in winter maintenance.

2.7.2 Details of proposed training

Prior to the commencement of the winter season a training programme shall be carried out for all personnel involved in providing the Winter Service, which shall include the following:

- Refresher training for M80 DBFO Winter Service Duty Officers on decisions, communication, contract requirements, Areas Requiring Special Attention, etc. This will be provided by the Winter Service Manager;
- Seminar to Winter Drivers detailing routes, contract requirements, response times, treatment times, communication, health & safety, areas requiring special attention and the importance of providing good quality service. This again will be provided by the Winter Service Manager with any changes being made to Areas Requiring Special Attention (ARSAs) also receiving updates in the form of toolbox talks or meetings;
- New recruits into providing the Winter Service shall be fully trained prior to any involvement in providing the Winter Service. All Winter Drivers shall be formally trained in the safer operation of winter maintenance equipment, based on the standards set in SVQ/City & Guilds level or equivalent in winter maintenance;
- Basic Road Meteorology training, including the use and interpretation of ice prediction systems for new M80 DBFO Winter Service Duty Officers (M80 WSDOs) and South East Winter Service Duty Officers (SE WSDOs) as well as refresher training, where required, for existing M80 WSDOs and SE WSDOs;

3 WEATHER FORECASTING

3.1 Purpose

It is the intention that the weather forecasts, which are provided by expert meteorologists, give the personnel involved in providing the winter service an accurate indication of forthcoming weather conditions, allowing them to prepare a winter Daily Action Plan which shall anticipate prevailing weather conditions and giving sufficient time in which to pre-treat the carriageway prior to the onset of snow or ice.

3.2 Methodology

The method used to produce both the short and long range weather forecasts is via a combination of a number of weather models. These models combine energy balance techniques with current and historic site specific information to provide the most accurate possible forecasts of future road conditions.

The road model forecasts can be updated as frequently as necessary using actual data from road sensors and data from comprehensive meteorological databases, which is monitored and updated by the South East Winter Service Duty Officers 24 hours a day.

3.3 Weather Forecasting Service

An expert weather forecasting service will be provided by an established UK road forecast provider. The Forecast provider shall be MetDesk. The service will consist of the provision of the following:

- 36 hour forecast text;
- 36 hour forecast tables for each route within the unit;
- 2 to 10-day text forecast
- 2 to 5-day hazard table;
- Evening and morning updates to the 36 hour text;
- Forecast consultancy/advisory service (24 hours a day, seven days a week);
- Time step thermal maps where available;
- Weather radar, showing past, present and forecast climatic conditions.

The above will allow the M80 DBFO Winter Service Duty Officer to prepare a winter Daily Action Plan by 15:00hrs each day, advising of all carriageway pre-treatments to be carried out for that day. The forecast systems providers Duty Forecaster can be contacted by telephone on a 24/7 basis.

3.3.1 Climatic Domains

There will be one climatic domain exclusive to the M80 O&M Works Site, which will be driven by the following forecast site: M80 Old Inns.

3.3.2 Weather Radar

Weather radar will be used via a web-based site, which gives a short range forecast up to 3 hours in advance, and with the facility to time-step the movement of the prevailing weather conditions. The radar will help to improve the accuracy of assessing the timing, nature and intensity of precipitation, particularly snowfall. The weather radar is part of the M80 WSDO's decision making process and is subsequently monitored by the SE WSDO.

3.3.3 Ice sensors and weather forecast sites

The M80 Old Inns site within the M80 DBFO O&M Works Site shall be utilised, as the sole weather station within the extents of the M80 Stepps to Haggs DBFO.

3.3.4 Thermal mapping

Transport Scotland do not currently use thermal mapping. The data from the road surface temperature sensors attached to the patrol and frontline fleet is used.

Thermal maps comprise digitised thermal fingerprints representing graphically variations in road surface temperatures along a route. By combining thermal map and forecast data, route maps can be produced indicating forecast minimum road surface temperatures along each route.

Digitised thermal mapping provides another useful tool for staff to supplement forecast data and local knowledge thereby aiding the decision making process for winter maintenance action, particularly on marginal nights and when partial salt runs are necessary. The maps can also be used to select suitable locations for additional outstations.

For effective use of thermal mapping, the digital map coverage of the M80 O&M Works Site must be maintained in a complete and up to date state. Where considered appropriate, recommendations on updating of thermal mapping will be made to the Scottish Ministers.

3.3.5 Location Plans

The M80 Old Inns ice station is located between M80 Junction 5 Auchenkilns and Junction 6 Old Inns. A plan showing the location of the M80 Old Inns station is shown in Annex WSP 6.

3.4 Computer Systems

There are a number of computer systems used to interrogate forecast and sensor data to enable the Winter Service Manager and Winter Service Duty Officers to make the most appropriate decisions for Winter Service actions. These computerised systems include the following:

Bureau service - for the collection of ice sensor data. The bureau service is provided by Vaisala and is comprised of a large central database which collects data from all ice sensors at up to 20 minute intervals.

Vaisala RoadDSS Manager - Is a web based system which allows the Winter Service Manager, M80 DBFO Winter Service Duty Officers and South East Winter Service Duty Officers to interrogate the bureau via any computer terminal which has internet access, to give the most up to date conditions at the ice sensor location on the O&M Works Site. This allows them to make informed decisions in relation to winter service actions and direct resources appropriately. Vaisala RoadDSS Manager allows action plans to be created aligned with forecast data received from MetDesk, and for these action plans to be monitored. Actual action plans are also recorded in the system and reports can be generated as required by running treatment and action reports for the required routes.

MetDesk.com. An internet based system supplied by the forecast systems provider will also be utilised to access forecast data along with weather radar images. Weather radar images are particularly useful for predicting and monitoring precipitation conditions.

BEARnet - Is BEAR Scotland's company intranet which holds all the management System information and electronic records.

4 MONITORING ARRANGEMENTS FOR AREAS REQUIRING SPECIAL ATTENTION

During the Winter Service Period, drivers/inspectors will be instructed to pay particular attention to areas requiring special attention, and any problems identified shall be actioned appropriately and communicated to the Duty Officer, who shall record in the communications log such incidences as well as any actions carried out by the drivers. Lessons learned from previous winters will be discussed and communicated as part of the pre winter seminar with particular attention to better communication and following the winter service plan with patrol vehicle being deployed at Areas Requiring Special Attention. Anyone attending MART on behalf of the M80 DBFO will be briefed and made aware of the current Areas Requiring Special Attention.

Areas Requiring Special Attention are known locations on the route, which in certain circumstances, are subject to some vehicles losing traction on the inclines. The actions required to limit the possibilities of this happening are noted below. The Areas are identified in Fig. 4/1 and detailed in Figs. 4/1a, 4/1b and 4/1c below.

The M80 DBFO Winter Service Duty Officer can monitor precipitation type and intensity and can instruct mobilisation of any frontline vehicle to patrol the route at any time. Should the winter weather escalate to a more severe event, then under instruction from the Winter Service Manager via liaison with Transport Scotland, the snow plan will be implemented as per Annex WSP 1.

The patrol route driver has specific instructions to monitor the Areas Requiring Special Attention. A copy of Figure 4/1 will be provided within all frontline, reserve and patrol vehicles for drivers' reference

In July 2023, a review has been undertaken of all Areas Requiring Special Attention in their current status whereby consideration has been given as to their current suitability, or otherwise. The following text offers a brief summary of the review outcome, with some accompanying justification given.

Proposed Amendments to Current ARSAs Following Summer 2023 Review: No proposed changes to current Areas Requiring Special Attention (ARSAs)

Justification: The current three ARSAs on the M80 DBFO network were conceived following severe traffic disruption during intense snowfall in years past. All three are gradient-based ARSAs with no change to road gradient since ARSAs were originally prescribed. Enhanced treatment in line with ARSA recommendations has seemed to be more effective in dealing with snow on the network in these locations, evidenced in the recent winter service periods during periods of potentially disruptive snow.

Proposed Additional ARSAs Following Summer 2023 Review: None proposed on the M80 DBFO.

Justification: No additional areas where disruption occurs during wintry weather have become apparent over the last winter service period, with current ARSAs remaining the most likely areas on the M80 DBFO network for disruption to emanate during severe weather. No run-off areas have been identified on the M80 DBFO.

The following table summarises the M80 DBFO ARSAs and associated proposals for these based on review.

Location	ARSA type – i.e. Gradient, run-off, Frost	Proposal	Evidence based information to support proposal
M80 Castlecary to Old Inns SB	Gradient	Retain ARSA for the upcoming 2023-2024 Winter Service Period	The incline between Castlecary and Old Inns on the M80 remains a section where disruption may emanate during severe weather, with HGVs and rear wheel drive vehicles historically having traction issues at this location in snow conditions.
M80 Castlecary to Haggs On Slip NB	Gradient	Retain ARSA for the upcoming 2023-2024 Winter Service Period	The incline between Castlecary and Haggs on the M80 remains a section where disruption may emanate during severe weather, with HGVs and rear wheel drive vehicles historically having traction issues at this location in snow conditions.
M80 Auchenkilns to Old Inns NB	Gradient	Retain ARSA for the upcoming 2023-2024 Winter Service Period	The incline between Auchenkilns and Old Inns on the M80 remains a section where disruption may emanate during severe weather, with HGVs and rear wheel drive vehicles historically having traction issues at this location in snow conditions.

Areas Requiring Special Attention (ARSAs) on the M80 Stepps to Haggs DBFO are detailed in the following series of tables.

Figure 4/1 – Areas Requiring Special Attention

Area Requiring Special Attention	Assigned Sensor Station	Frost Susceptible, Gradient or Water Run-Off	Treatment Route	Patrol Route
M80 Castlecary to Old Inns SB	Old Inns	Gradient	M80DBFO01	M80DBFO-P
M80 Castlecary to Haggs On slip NB	Old Inns	Gradient	M80DBFO01	M80DBFO-P
M80 Auchenkilns to Old inns NB	Old Inns	Gradient	M80DBFO01	M80DBFO-P

AREAS REQUIRING SPECIAL ATTENTION SCHEDULES

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/DBFO/M80/A – M80 Castlecary SB	
Location	**M80 Castlecary Arches to Old Inns SB**
Grid Reference	**Grid refs required – 278843, 678428 to 277261, 676686**
Problem	**Two and three laned motorway 2 miles in length with potential for mainly articulated and rear wheel drive vehicles to lose traction on the incline.**
Has this site experienced problems before or is it an identified risk?	**Due to accumulation of snow there have been previous incidents of where articulated vehicles and rear wheel drive vehicles have lost traction.**
Detailed Mitigation Measures	
Mitigation Measures	▪ **Application of precautionary increased spread rate to 40mgs on inclines when greater than 1cm of snow is forecast, over a 12 hour period. This action to be completed during one pass.** ▪ **Front line treatment route (M80DBFO1) – driver awareness of the ARSA.** ▪ **Patrol M80DBFO-P. (1 November to 30 April) – driver awareness of the ARSA and completion of record sheet.** ▪ **Monitoring of conditions, from the Traffic Scotland cameras at Old Inns, Banknock, Castlecary Bankhead and Haggs, by Duty Officers via the Traffic Scotland website and the weather station at Old Inns. BEAR Scotland South East Network Hub also have access to the live feeds from Traffic Scotland and can relay issues to Winter Service Manager/duty officers.** ▪ **Pre-Deployment of 4x4 with spreading capabilities depending on available resource** ▪ **Ploughing to be as near as practicable to carriageway surface and followed by 40mgs treatment during snow event, to remove all snow covering** ▪ **Pre-deployment of Heavy and light recovery vehicles following agreement with Transport Scotland.** ▪ **Snow plan as per Annex WSP1 to be implemented under agreement with Transport Scotland**
When enacted	**The measures detailed above will be considered based on a forecast of significant snowfall in a short space of time with a high degree of forecaster confidence.**

	In cases of low or medium forecaster confidence dialogue will be opened with HMG/Transport Scotland regarding extent of mitigation.
Who enacts	**Winter Service Duty Officer supported by South East Network Hub.**
Who will manage the response	**Winter Service Manager or Duty Officer.**
Are diversion routes to be used?	**Diversion routes are to be avoided where possible due to the complications in setting out traffic management during snow events and the unknown condition of the local road network. Advance signage on overhead VMS may be used to suggest alternative routes such as diverting traffic south on the M9 from Junction 9 towards the M8 and along the M8 corridor.**
Deployment of resources	**Available resources are detailed in Annex WSP 5.**
Use of VMS	**Contact Traffic Scotland to display information on relevant VMS signs approaching the M80 from the M9 & M876 to make drivers aware of potential delays and to use alternative routes.**
Assistance from additional Transport Scotland resources	**Assistance from Transport Scotland Communications to agree message to be put out to the media.**
Assistance from External Sources	**Assistance from Police Scotland in implementing road closures if deemed necessary.** **Assistance from BEAR Scotland SE and NW Units if deemed necessary.** **Assistance from other OC's, DBFO's or local authorities when enacting snow plan or additional resource requirements as per Annex WSP1.**

Figure 4/1a: ARSA/M80 DBFO/M80/A – M80 Castlecary Arches to Old Inns SB

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/DBFO/M80/B – M80 Auchenkilns NB	
Location	**M80 Auchenkilns to Old Inns NB**
Grid Reference	**Grid refs required – 274532,674279 to 276989,676552**
Problem	**Two and three laned motorway 2 miles in length with potential for mainly articulated and rear wheel drive vehicles to lose traction on the incline**
Has this site experienced problems before or is it an identified risk?	**Due to accumulation of snow and run-off there has been previous incidents where an articulated vehicles and rear wheeled driven vehicles have lost traction..**
Detailed Mitigation Measures	
Mitigation Measures	▪ **Application of precautionary increased spread rate to 40mgs on inclines when greater than 1cm of snow is forecast, over a 12 hour period. This action to be completed during one pass** ▪ **Front line treatment route (M80DBFO1) – driver awareness of the ARSA.** ▪ **Patrol M80DBFO-P. (1 November to 1 April) – driver awareness of the ARSA and completion of record sheet.** ▪ **Monitoring of conditions from Chryston depot of the Traffic Scotland cameras at Auchenkilns, Seafar, Westerwood and Old Inns by Duty Officers on Traffic Scotland website. BEAR Scotland South East Network Hub also have access to the live feeds from Traffic Scotland and can relay issues to Winter Service Manager/duty officers.** ▪ **Closure of on-slips northbound at Auchenkilns and Old Inns to allow traffic to flow more readily.** ▪ **Pre-Deployment of 4x4 with spreading capabilities depending on available resource** ▪ **Ploughing to be as near as practicable to carriageway surface and followed by 40mgs treatment during snow event, to remove all snow covering** ▪ **Pre-deployment of Heavy and light recovery vehicles following agreement with Transport Scotland.** ▪ **Snow plan as per Annex WSP1 to be implemented under agreement with Transport Scotland**
When enacted	**The measures detailed above will be considered based on a forecast of significant snowfall in a short space of time with a high degree of forecaster confidence.** **In cases of low or medium forecaster confidence dialogue will be opened with HMG/Transport Scotland regarding extent of mitigation.**

Who enacts	**Winter Service Duty Officer supported by South East Network Hub**
Who will manage the response	**Winter Service Manager or Duty Officer.**
Are diversion routes to be used?	**Diversion routes are to be avoided where possible due to the complications in setting out traffic management during snow events and the unknown condition of the local road network especially with increased traffic on surrounding A8011 at its inclines. Advance warning to use alternative routes back along the M80/M73 toward the M8 from Auchenkilns junction may be considered.**
Deployment of resources	**Available resources are detailed in Annex WSP 5.**
Use of VMS	**Contact Traffic Scotland to display information on all available VMS signs on approaches to M80DBFO including signage on M8 and M73/M74. Additional mobile VMS signage may be considered as part of the snow plan.**
Assistance from additional Transport Scotland resources	**Assistance from Transport Scotland Communications to agree message to be put out to the media.**
Assistance from External Sources	**Assistance from Police Scotland in implementing road closures if deemed necessary.** **Assistance from BEAR Scotland SE and NW Units if deemed necessary.** **Vehicle Recovery through Police Scotland Contracts if vehicles become stuck.** **Assistance from other OC's, DBFO's or local authorities when enacting snow plan or additional resource requirements as per Annex WSP1**

Figure 4/1b: ARSA/M80 DBFO/M80/B – M80 Auchenkilns to Old Inns NB

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/DBFO/M80/C – M80 Castlecary NB	
Location	**M80 Castlecary Arches to Haggs on slip NB**
Grid Reference	**Grid refs required – 278787,678138 to 278988,679570**
Problem	**Two and three laned motorway 2 miles in length with potential for mainly articulated and rear wheel drive vehicles to lose traction on the incline**
Has this site experienced problems before or is it an identified risk?	**Due to accumulation of snow and run-off there have been previous incidents where an articulated vehicles and rear wheeled drive vehicles have lost traction**
Detailed Mitigation Measures	
Mitigation Measures	▪ **Application of precautionary increased spread rate to 40mgs on inclines when greater than 1cm of snow is forecast, over a 12 hour period. This action to be completed during one pass** ▪ **Front line treatment route (M80DBFO1) – driver awareness of the ARSA.** ▪ **Patrol M80DBFO-P (1 November to 1 April) – driver awareness of the ARSA and completion of record sheet.** ▪ **Monitoring of conditions from Chryston depot of the Traffic Scotland cameras at Castlecary, Banknock, Bankhead and Haggs, by Duty Officers on the Traffic Scotland website. BEAR Scotland South East Network Hub also have access to the live feeds from Traffic Scotland and can relay issues to Winter Service Manager/duty officers.** ▪ **Closure of on-slip northbound at Castlecary and Haggs to allow traffic to flow more readily.** ▪ **Pre-Deployment of 4x4 with spreading capabilities depending on available resource** ▪ **Ploughing to be as near as practicable to carriageway surface and followed by 40mgs treatment during snow event, to remove all snow covering** ▪ **Pre-deployment of Heavy and light recovery vehicles following agreement with Transport Scotland.** ▪ **Snow plan as per Annex WSP1 to be implemented under agreement with Transport Scotland**
When enacted	**The measures detailed above will be considered based on a forecast of significant snowfall in a short space of time with a high degree of forecaster confidence.**

	In cases of low or medium forecaster confidence dialogue may be opened with HMG/Transport Scotland regarding extent of mitigation.
Who enacts	**Winter Service Duty Officer supported by South East Network Hub.**
Who will manage the response	**Winter Service Manager or Duty Officer.**
Are diversion routes to be used?	**Diversion routes are to be avoided where possible due to the complications in setting out traffic management during snow events and the unknown condition of the local road network. Alternative signing of the overhead VMS system can be used to suggest alternative routes such as diverting traffic back along the M80/M73 toward the M8 from Auchenkilns junction if this route is clear.**
Deployment of resources	**Available resources are detailed in Annex WSP 5.**
Use of VMS	**Contact Traffic Scotland to display information on all available VMS signs on approaches to M80DBFO including signage on M8 and M73/M74. Additional mobile VMS signage may be considered as part of the snow plan**
Assistance from additional Transport Scotland resources	**Assistance from Transport Scotland Communications to agree message to be put out to the media.**
Assistance from External Sources	**Assistance from Police Scotland in implementing road closures if deemed necessary.** **Assistance from BEAR Scotland SE and NW Units if deemed necessary.** **Assistance from other OC's, DBFO's or local authorities when enacting snow plan or additional resource requirements as per Annex WSP1**

Figure 4/1/c: ARSA/M80 DBFO/M80/C – M80 Castlecary Arches to Haggs Onslip NB

5 DECISION MAKING

5.1 Role of the Winter Service Manager

The role of the Winter Service Manager is to ensure that all procedures detailed in the Winter Service Plan are adhered to and that the most effective action plans are adopted each day to keep the carriageways free from snow and ice.

It will be the duty of the Winter Service Manager to hold regular reviews throughout the Winter Service period in order to address any issues that may have arisen in implementing the Winter Service. This will take the form of de-briefings to all key staff regarding nights where difficult road conditions have been experienced. The philosophy will be to have a 'preventive' approach rather than 'reactive' approach in all decision making.

Consequently, the Winter Service Manager will always be appraised of the Daily Action Plan, which will be developed by the M80 DBFO Winter Service Duty Officer and then approved by the Winter Service Manager or approved delegated person in his absence.

The Winter Service Manager is responsible for ensuring the ice detection system is monitored, including updated forecasts, to assess whether any changes are required to the Daily Action Plan. Where any changes to the Daily Action Plan are considered necessary, the Winter Service Duty Officer will relay this to the Winter Service Manager, South East Winter Service Duty Officer and Winter Drivers, confirming the change.

5.2 Role of the M80 DBFO Winter Service Duty Officer

The M80 DBFO Winter Service Duty Officer (M80 WSDO) is responsible for all operational matters, including the deployment of all resources (as well as any additional resources required during adverse conditions) and preparation of the Daily Action Plan.
M80 WSDOs are responsible for the maintenance and updating of operational records including but not limited to the following:

- treatment decisions and how decisions were taken, when and by whom;
- treatment records;
- mobile sensor records;
- material usage;
- road closure locations and times;
- logs of communications to and from vehicles on route;
- software faults;
- electronic data from data loggers;

- back up paper records.

5.2.1 Proposals for precautionary and additional de-icing treatments when low confidence forecasts shall be issued for variable road and weather conditions

Precautionary treatments will be provisionally identified on a Daily Action Plan prepared each day by 15:00hrs following receipt of an expert weather forecast relayed through the ice prediction system. Treatments will be in accordance with the treatment matrices detailed in WSP 7 as per Sch 4 App B. Thereafter, and in particular where forecasts are of low confidence, conditions will continue to be monitored by South East Winter Service Duty Officers. Where conditions require further precautionary treatments, these will be ordered by the M80 WSDO whether part of the action plan or not.

5.2.2 Proposals for monitoring the effectiveness of de-icing materials

Winter Service Duty Officers will use a variety of methods in order to assist in assessing the effectiveness of the de-icing materials which have been spread on the carriageway. These methods are as follows:

- Ice stations detail residual salt and give alarms to indicate low residual salt under certain conditions. It should, however, be remembered that particularly in drying out conditions, such readings may be unreliable;
- Warnings and alarms from all available ice stations;
- Experience of local areas and previous actions;
- Advice from weather forecasters, particularly on likely precipitation (use of weather radar) which may cause salt to be washed from carriageway;
- Feedback from spreader drivers, patrols and mobile sensors;
- Feedback from external parties such as the Police.

All of the above can be used by the Winter Service Duty Officers to make an informed decision regarding the status of residual salt on the carriageway, and whether further pre-treatment is necessary.

The South East Winter Service Duty Officer will assist the M80 DBFO Winter Service Duty Officer in monitoring the ice detection system. The South East Winter Service Duty Officer will contact the M80 DBFO Winter Service Duty Officer if there is any significant change from the forecast road surface temperatures and precipitation. The South East Winter Service Duty Officer cannot cancel actions without the Winter Service Duty Officer’s consent.

5.2.3 Freezing Rain

The prediction of freezing rain is difficult and the action necessary to deal with it is problematic. The very nature of freezing rain means that treatments will have virtually no effect initially and ice will form on the carriageway. Considering the limits in the effectiveness of treatments in dealing with freezing rain it is essential that practical measures are implemented to provide warning to road users of the hazardous conditions. Measures for dealing with freezing rain fall into three main areas: Advance Planning, Operational Arrangements, and Hazard Mitigation.

These measures are considered in further detail as follows:

Advance Planning

Advance planning includes consideration of the potential impact of freezing rain and development of contingency arrangements to mitigate the effects. These contingency arrangements are documented below.

A joint agreement is required at national level by Transport Scotland, Traffic Scotland, Trunk Road Operators and Police Scotland to formulate a nationwide freezing rain procedure and protocol for dealing with such rare occurrences and incidents that may occur during or following such severe weather events.

If freezing rain occurs during a forecasted period of severe weather that necessitates a Yellow or Amber Met Office Severe Weather Warning, then it is likely both Police Scotland and BEAR's Winter Resilience Operations will be in place. This would involve a MART convened at Traffic Scotland.

Any Police Scotland response to freezing rain would be part of a multi-agency operation and would be subject to other ongoing operational commitments.

Advance signing of the forecast of freezing rain may be signed on the Traffic Scotland national network of VMS, with an appropriate legend such as;

FREEZING RAIN FORECAST PLAN AHEAD

The use of social media platforms, at a strategic level, can also be used to provide advanced warning of the forecast conditions and what the general public should expect should such weather conditions prevail.

Specific measures which BEAR will take are as follows:

Outline operational arrangements for carrying out precautionary treatments are documented within this Winter Service Plan under Annex WSP 2 - Precautionary Treatment Routes.

Although the adverse effects of freezing rain can impact across any part of the network, particular consideration will be given to those parts identified as Areas Requiring Special Attention in Section 4 Monitoring Arrangements for Areas Requiring Special Attention, Figure 4/1.

On receipt of a forecast of freezing rain or rain falling on extremely cold surfaces, a tele-conference call will be initiated with the Director (Transport Scotland), Traffic Scotland, Police Scotland and appropriate Local Authorities and service providers in the affected area.

Topics for discussion should include:

- Forecast and expected timings
- Extent of routes affected
- BEAR Plant & Police Scotland Resources
- Police travel / no travel advice
- Advance VMS warnings
- Social Media / Media Release

If surfaces are extremely cold (i.e. below minus 7ºC) then treatment with conventional Rock Salt is likely to be ineffective and precautionary treatment with alternative de-icer is recommended. Stocks of Magnesium Chloride are not required at Chryston depot under the terms of the contract but dialogue with Transport Scotland indicates that Transport Scotland will make this available for use on the M80 DBFO when required. Prior to freezing rain being forecast the Winter Service Manager will liaise with Transport Scotland for approval to use the alternative de-icer.

Operational Arrangements

Freezing rain will require to be treated in a similar manner to snow, i.e. treatment in advance of, during the event and then treatment following as required.

Prior to the arrival of the Freezing Rain a pre-treatment at a spread rate of 40g/m^2, carried out as 2 x 20g/ m^2 treatments, as per Appendix WSP 7 - Table 7.2/J/2, shall be undertaken.

Freezing rain usually occurs along the line of an incoming warm front. To ensure maximum effectiveness of the salt, the advance treatment should be made in the same direction and immediately in advance of the weather front. The weather radar, provided by MetDesk, will be used by the M80 WSDO to determine the timing of the treatment and where practicable, the direction of treatment.

Consideration will be given to stationing vehicles at the point on the route where the weather front will first hit in order that timely treatments can be undertaken.

Salt will inevitably be lost during and following treatment, therefore constant monitoring will be required. Successive treatments will be required immediately the rain commences and continued until such time that the rain has ceased, or the temperature of the road has risen above freezing.

It is likely the first confirmed instances of freezing rain will either be from the winter drivers patrolling during the event, or from members of the public, via Police Scotland.

Hazard Mitigation

The very nature of freezing rain means that treatments will have virtually no effect initially and ice will form on the carriageway. Mitigation of the hazard is therefore a significant aspect of the actions taken in response to freezing rain or rain falling on extremely cold surfaces.

The main action is to inform road users of the hazard, however more pro-active measures may be required.

Consideration should be given to closing the road as the rain arrives and holding traffic (rather than diverting) until such times as it is deemed safe to proceed. This is, however, likely to be problematic to implement due to the requirement of Police Scotland resources to legally stop and hold traffic until BEAR traffic management resources can be deployed. In such weather conditions deployment of traffic management may present additional hazards for BEAR resources and safety of the workforce must be taken into account. The Police Scotland response to freezing rain would be subject to other ongoing operational commitments and would have to be part of a multi-agency operation.

It should be noted that if traffic is removed from a trunk road, additional risks by displacing strategic traffic onto smaller, restricted local road authority roads with less safety features, such as safety fencing, will place diverted traffic at increased risk. Each closure or diversion will need to be carefully considered on its own merits and made on a local basis considering the local circumstances.

Fixed Variable Message Signs (VMS), operated by Traffic Scotland should be used to warn road users of the hazard.

The requirement for advance VMS warnings and their timings should be made in advance at the Conference Call.

A follow up call to Traffic Scotland by the Incident Liaison Officer or WSDO will be required to initiate activation of event specific warnings, based on information from the Road Weather Stations, Gritter Drivers or Police Scotland.

The TRISS units may also be deployed to provide localised warnings utilising the vehicle mounted VMS.

Paragraph 5.6.6.4 of the Highways Agency NMM recommends 'SKID RISK SLOW DOWN' as the most appropriate to use, however it does not convey the serious nature of the skid risk, and a more appropriate legend may be:

ICE RISK
AHEAD
SLOW DOWN

BEAR Scotland's Media Liaison Officer should be contacted in order that national and local broadcast media, i.e. BBC Radio Scotland, Radio Clyde, etc. can be updated as required.

The use of Variable Mandatory Speed Limits are not available on the M80 DBFO.

Consideration could be given to the use of rolling blocks and convoy arrangements to either hold or slow traffic down both just prior to and during the event. Again, this will require resources from Police Scotland as only they have the legal authority to control traffic in this manner and would be subject to ongoing operational commitments.

5.2.4 Drifting Snow

Our Daily Forecast details routes with the potential for drifting snow during the forecasting period, with detailed updates provided as required. We may also seek the advice of our weather forecaster out with these update periods as to the severity and nature of the drifting snow. Treatment and pre-deployment of resources for snow clearing will be based around the advice from our expert weather forecaster.

6 LIAISON

Our plans for liaison with people and organisations are as follows:

6.1 The Scottish Ministers

At the completion of each winter season BEAR Scotland will prepare an annual report in accordance with Schedule 4, Part 2, Clause 3.2.4. This report will be submitted to the Scottish Ministers prior to 31st May, and within 14 days an annual review meeting will be held to discuss the contents of the report and BEAR Scotland's performance in the immediately preceding Winter Service Period ending 15th May. Comments will be taken into consideration by BEAR Scotland in the preparation of the Winter Service Plan for the forthcoming Winter Service Period, and amendments to the previous Winter Service Plan made prior to submission by 31st July.

On a daily basis, BEAR Scotland's winter Daily Action Plan will be submitted to the Scottish Ministers. During periods of prolonged severe weather, BEAR Scotland will update the Scottish Ministers at regular intervals as to conditions on the M80 O&M Works Site. If a road is closed due to severe weather conditions, the Scottish Ministers will be immediately informed by telephone call, which shall subsequently be confirmed in writing via email within 12 hours of the closure.

Throughout the Winter Service Period, a weekly winter conference call will be convened by Transport Scotland. Generally, this call will involve Transport Scotland, Operating Companies, DBFO Companies, Traffic Scotland, Police Scotland and the Met Office in order to discuss the winter service and any incidents in the preceding week as well as any perceived issues in the upcoming week. Prior to the conference call, BEAR Scotland shall submit a Weekly Winter Report to Transport Scotland following receipt of the daily forecast each Thursday. The Weekly Winter Report shall contain information as to carbon emission savings, with these in relation to the change in patrol deployment criteria and also savings pertinent to the deployment of the gritting fleet without ploughs (when not required) during the peak winter months.

BEAR Scotland will also liaise with Transport Scotland's Multi Agency Response Team (MART) as directed by Transport Scotland. There will normally be a daily conference call between Transport Scotland, Operating Companies and DBFO companies prior to and during a severe weather event. Details of daily plant and resources may be requested. BEAR Scotland will have a presence in MART when requested by Transport Scotland. The M80 DBFO will be represented by a member of staff from either the North West or South East Network Management Contracts.

In discussion with HMG/Transport Scotland, BEAR Scotland may send an additional resource to the MART when disruption is anticipated on the M80 DBFO due to severe winter weather. The M80 DBFO representative will be fully briefed and made aware of the Areas Requiring Special Attention following discussions with the Winter Service Duty Officer or Winter Manager throughout any disruption period and when possible this member of staff will have previous knowledge of the M80 DBFO.

6.2 The Police

In the compilation of the annual Winter Service Plan (WSP) a meeting will be held with the Police to capture all views so that any amendments can be introduced into the WSP prior to submission to the Scottish Ministers for their approval. The meeting shall take the form of a review of the draft WSP for the forthcoming season and provide a forum in which Police Scotland can comment on what, in their opinion, may be improved upon.

During the winter season it is essential that good communication lines are maintained between BEAR Scotland and local Police. This is particularly the case during periods of severe weather. A dedicated phone line shall be implemented for the Emergency Services, the number for which will be known only to the Emergency Services, so that Incident Liaison Officers can clearly distinguish between general calls and any calls from the Emergency Services including Police Scotland.

BEAR Scotland will also liaise closely with the Police during severe weather to ensure that a consistent message is given to the media and road users as to road conditions at any moment.

6.3 Traffic Scotland Operator

BEAR Scotland in conjunction with the Police ensure that during periods of severe weather, a consistent message is given to the Traffic Scotland Operator in order that accurate messages can be displayed on the variable message signs and also accurate information can be relayed to the public through Traffic Scotland's web site. BEAR Scotland's winter Daily Action Plan will be submitted to the Traffic Scotland Operator on a daily basis.

6.4 Adjacent Road and Highway Authorities

Adjacent local authorities Glasgow, North Lanarkshire, Falkirk and East Dunbartonshire will be consulted prior to the start of the Winter Service period.

BEAR Scotland will issue its winter Daily Action Plan to all adjacent road and highway authorities on a daily basis. Winter issues shall also be an item on the agenda at liaison meetings with all adjacent road and highway authorities. At the boundary of the O&M work's site there are currently no overlapping winter treatment routes, with start and end points clearly defined.

6.5 Adjacent Trunk Road Operating Companies

Adjacent Trunk Road Operating Companies and DBFO's such as BEAR, Amey, and Scottish Road Partnership will be consulted prior to the start of the Winter Service period. At the boundary of the O&M work's site there are currently no overlapping winter treatment routes, with start and end points clearly defined.

BEAR Scotland shall issue its winter Daily Action Plan to all adjacent Trunk Road Operating Companies and DBFO's on a daily basis.

Winter issues shall also be an item on the agenda at liaison meetings with all adjacent Trunk Road Operating Companies.

6.6 Network Rail

There are no railway crossings on the M80 O&M Works Site; however BEAR Scotland's winter Daily Action Plan shall be submitted to Network Rail on a daily basis.

7 WINTER SERVICE PATROLS

Where instructed, a Winter Service Patrol shall operate between 1st November and April 30th during the Winter Service Period. The Winter Service Patrol shall operate on the network between the hours of 2am and 10am when road surface temperatures are forecast to be less than 2˚C. The route time shall not exceed 1 hour and shall have a 30 minute response time. The Patrol route is shown in Annex WSP 11.

8 PRECAUTIONARY TREATMENT

8.1 Precautionary Treatment Routes

Two precautionary treatment routes for the M80 O&M Works Site have been identified, and associated route cards provided as given in Annex WSP 2. Treatment Routes include all hard shoulders and also associated slip roads at Junctions 2, 3, 4, 4a, 5, 6, 6a and 7 of the M80 and Junction 3 of the M73 up to the Local or adjoining Authority Boundary. Dedicated slip roads form the 3 and 4 lane sections and are treated separately from the mainline carriageway.

(i) The routes have been designed to ensure that treatment time can be completed within 2 hours of commencement. Furthermore, the routes have been assessed to ensure that the contractual response time in paragraph 3.10.1 of Part 2 of Schedule 4 of one hour will be met. In the design of the routes, due cognisance has been taken of likely driver's locations, and the need to ensure that rotas are carefully managed in this regard. On some occasions it may be necessary to pre-load spreading vehicles as instructed by the Winter Service Manager.

(ii) Should, for any reason, the normal access to a route be blocked, both treatment routes can be accessed by making use of diversion routes using the local authority road network, or from an alternative depot if necessary.

(iii) Treatment of all precautionary routes will include areas deemed to be contiguous and included in the total width of the main carriageway

(iv) Should there be any Temporary Traffic Management in place on the network, it will be the duty of the Winter Service Duty Officer to confirm with the Traffic Management supervisor what time the Traffic Management will be removed so that any areas of the route that could not be treated are then completed prior to opening to the public.

(v) As per Schedule 4 Part 2 Clause 3.9.1 (xvi), any spread rate greater than 20gms will be carried out by undertaking 2 separate precautionary treatments. The 2nd treatments shall commence within 3 hours of the completed 1st treatment.

(vi) On completion of a pre-treatment, the Winter Service Duty Officer will compare the overall salt tonnage used with the target tonnages for each route. If the salt tonnage used exceeds 90% of the target tonnage then this will be deemed acceptable. Should the salt tonnage used fall below 90% of the target tonnage for the route then the WSDO will ask the driver to immediately reload the spreader and undertake another full route treatment at the same spread rate. Target tonnages for the M80 DBFO precautionary treatment routes are detailed in Annex WSP 2, Table 2.

It is proposed that the precautionary treatment routes will generally be carried out in order to ensure that all carriageways with negative texture surfaces will be treated as close as is practicable to the time forecast for road surface temperatures to be at less than or equal to +1°C.

Whilst BEAR Scotland will comply fully with the requirement in paragraph 3.3.3 of Schedule 4 Part 2 for three trained Winter Drivers to be available for each item of frontline Winter Constructional Plant, it is also proposed that there will be a rota of four Winter Drivers for the precautionary treatment routes in order to fully comply with driver's hours regulations.

9 SNOW AND ICE CLEARANCE

9.1 Snow Clearing

As soon as the M80 DBFO Winter Service Duty Officer or Manager becomes aware that snow is falling or if the forecasting organisation advises the Winter Service Duty Officer through the consultancy service that snow is about to fall, resources will be mobilised from the depot to reach the route within one hour of making the decision. They will remain on the route except for re-loading breaks or change of shifts, until such time as the road is cleared.

Where the accumulation of snow is expected to be less than 20mm deep, one frontline vehicle will be deployed to treat each route with continuous treating and ploughing where applicable to remove existing snow covering. The reserve rota will be in place with standby vehicles ready to be deployed from the depot. Where, however, snow is expected to accumulate to a depth greater than 20mm, reserve vehicles will be deployed onto the network. In advance of any predicted snow conditions, snow ploughs shall be mounted to winter constructional vehicles as required.

In relation to clearance of ice that has already formed, the M80 DBFO Winter Service Duty Officer will deploy whatever resources are deemed necessary based on the reports from patrols, Police or drivers sent out as a result of ice prediction site monitoring.

Where ploughing is required but is not at levels where additional vehicles have been deployed, echelon ploughing will still be carried out on all dual carriageway sections.

In snow conditions, BEAR Scotland will give priority to clearing lanes of snow, removing it to the verge-side carriageway channels, and ensuring that entry and exit points, including slip roads to the

Trunk Road Network are not blocked. Clearance of snow from the hard shoulder will be carried out only after the main carriageway has been cleared of snow.

During and after prolonged snowfall, continuous ploughing as near to the road surface as practicable, will be utilised to prevent snow build-up and compaction by traffic. Snow blowers can be deployed where deep accumulations have occurred due to prolonged snowfall or drifting.

Where hard-packed snow and ice have formed and cannot be removed by ploughing, 5mm sharp sand will be added to the salt at a ratio of 1:1 and successive treatments at a spread rate of 20 to 40g/m^2 will be undertaken to aid vehicular traction. Treatment with pure salt will be reverted to as soon as the hard packed material has been removed.

Where snow and ice are predicted to lie to a depth of more than 100mm and any other winter weather conditions which cannot be dealt with by frontline or reserve winter constructional plant BEAR can request additional winter constructional plant detailed in Annex WSP Table 4, or request mutual aid from other OCs, DBFOs or Local Authorities.

In addition to the above, and in discussion with Transport Scotland, the Snow Plan as per Annex WSP1 may be implemented. Should the snow plan be implemented then this will take precedence over existing routes and treatments, see Annex WSP1 for further details.

Any decision to close a road will be taken by the Police. This decision will generally be relayed by the Police to the Winter Service Duty Officer using the dedicated phone line. The Winter Service Duty Officer is responsible for liaison with the police.

The Winter Service Manager, HMG, the Scottish Ministers and Traffic Scotland will be informed immediately by telephone and in writing via email within 12 hours of any decision to close a road, or of other major problems encountered within the M80 O&M Works Site due to winter weather conditions. Liaison will also take place through MART with Transport Scotland.

Police Scotland, in co-ordination with MART, BEAR and Traffic Scotland, will normally notify the other Emergency Services of any road closures and will arrange for the provision of advance warning signs. Traffic Scotland will activate variable message signs where appropriate. BEAR Scotland will also communicate via social media any adverse weather conditions that are being experienced on the network.

The Winter Service Duty Officer will also notify the local Roads Authorities of any relevant trunk road closures.

During periods of prolonged snowfall, continual shifts will be employed for winter maintenance operations at relevant BEAR Scotland depots. The period for which continual shifts apply will be agreed between the Winter Service Manager and the M80 DBFO Winter Service Duty Officers.

Where snow and ice is required to be removed from the network particularly at grade separated and multi-level junctions, BEAR Scotland will lift, remove and dispose of snow and ice and/or utilise snow blowers, with the snow being directed onto adjacent land (where BEAR Scotland has obtained the prior agreement of the landowner and the Scottish Environmental Protection Agency). Such operations will be followed by de-icing treatment.

9.2 Snow Plan

Following instruction from Transport Scotland, on behalf of HMG, BEAR Scotland will implement Transport Scotland's Snow Plan and mobilise the additional resources required as per the resource table on the Transport Scotland website.

10 DE-ICING MATERIALS

10.1 Details

Pre-wetted salt will be used as a de-icing material on the M80 O&M Works Site carriageways for the Winter Service Period.

10.1.1 Salt

BEAR Scotland has developed arrangements with the following suppliers for salt

- Cleveland Potash Ltd. Boulby Mine, Loftus, Saltburn-by-the-Sea Cleveland, TS13 4UZ
- Peacock Salt, Jura Terminal, North Harbour, Ayr, KA8 8AE
- OMEX Environmental Ltd, Bardney Airfield, Tupholme, Lincoln LN3 5TP
- Safecote Ltd, Winnington Hall, Northwich, Cheshire, CW8 4DU

Rock salt shall be 6.3mm grading particle size complying with BS3247 or equivalent, treated with an anti-caking agent and will be sourced from recognised suppliers. Samples will be obtained for laboratory testing to ensure compliance with this standard.

Salt storage will be such that the stockpiles do not become contaminated with foreign matter, and that the salt storage and loading/discharge operations do not adversely affect the adjacent environment. It is also important that salt is stored in conditions which allow the moisture contents defined in the contract to be achieved.

Arrangements will be put in place with a UKAS-accredited testing agency to carry out testing of new deliveries of salt on arrival and monthly tests on existing salt stockpiles. At times of high usage, the monthly test may coincide with the testing of new salt. All testing reports will be sent to the Winter Service Manager who will authorise the salt as “fit for use”.

Where there are any non-conformances arising from the test results, the Winter Service Manager will be responsible for closing these out by detailing the action(s) necessary to ensure compliance with the contract. This may, where appropriate, involve the use of enhanced salting rates.

In the event of salt moisture content reaching an unacceptable level, this material will be set aside and replaced with salt with acceptable moisture content.

Rock salt complying with BS3247 *“Salt for spreading on highways for winter maintenance”* will be sourced from recognised suppliers. This salt shall be transferred by either road or ship as appropriate for each depot location.

A salt management strategy is in place which takes into account minimum salt stock levels at the depot detailed in WSP 3. This details the minimum level of salt that will be held at the depot at any time throughout the winter period. The strategy will be to maintain adequate stocks at the depot and to regularly top up the stockpiles as necessary. This will be achieved by utilising salt stocks from other BEAR Scotland depots when required. Rigorous reporting of salt usage will enable accurate reporting of stock levels held at the depot. Should this strategy change on the M80 O&M Works site, the Scottish Ministers will be notified of our procedure. This document will be subsequently updated and resubmitted for approval. BEAR Scotland will report salt stocks to the Scottish ministers on a monthly basis between September to June and weekly basis during November and March. These updates will provided on the DFT portal.

10.1.2 Brine

A Salt Saturator is installed at Chryston depot for the production of brine and can produce a net Brine capacity of 25,000 litres. The brine will have a minimum concentration of 23% dissolved sodium chloride. This level of salt concentration is measured automatically on the digital read out screen but will also be tested and recorded on a daily basis by a member of the Operations Team. The saturator will be serviced and calibrated on an annual basis through a service contract with the manufacturer.

Salt used in the production of brine shall be as specified by the manufacturer of the relevant salt saturator for each depot.

BEAR Scotland shall monitor the levels of salt and brine being utilised and shall include the related data in the contract required Monthly and Annual reports.

Brine will be stored both in the salt saturator and also each spreading vehicle which will be re-filled immediately after treatment undertaken, thus acting as a further storage facility. This maximises the volume of brine available at any time, ensuring an immediate response to any treatment decision.

Operational staff and operatives at BEAR Scotland's Chryston depot will be given the responsibility for daily checks of the concentration of the brine solution. These checks shall be carried out using a saturation meter, and the results passed to the Incident Liaison Officers who will store these electronically. Original records of these checks will be retained at BEAR Scotland's Chryston depot.

Brine added to salt during spreading operations shall be 30% of the total spread material by weight (70% salt, 30% brine solution) and the brine solution shall be of a minimum concentration of 23% dissolved sodium chloride, except where forecast temperatures are to fall below minus 15 ^{o}C.

Where temperatures are forecast to below minus 15^{o}C the fully saturated brine shall be diluted by the addition of 5%-10% water to prevent re-crystallisation of the salt. The addition of water shall be undertaken in such a manner that ensures the water and brine is thoroughly mixed to produce a consistent concentration of brine.

As soon as the temperature rises above minus 15^{o}C a return to an application of fully saturated brine solution shall be employed.

In the event that the brine tank becomes non-operational due to extreme weather or mechanical failure, dry salt runs will be undertaken as required as an interim measure and only until the brine saturator has been restored to full functionality, at which point pre-wetted treatments will resume.

10.1.3 Eco-Thaw Solution

Implemented via Scottish Ministers Notice of Change 032 (Use of PTT Radios and Alternative De-Icer for Winter Service), Transport Scotland provided a 30,000l stock of an alternative de-icer known as Eco-Thaw for use on the M80 Stepps to Haggs DBFO during extreme weather conditions. The Eco-Thaw solution is used instead of conventional brine in spreaders in advance of forecast snow conditions on the network, with the alternative de-icer bringing benefits over brine in reducing the propensity for snow to build up on the carriageway.

The Eco-Thaw storage tank situated at the Chryston Depot is fitted with an electronic gauge which can be accessed remotely by the supplier and by the Winter Service Manager, and once stock drops below 15,000l in the tank an alert is received by both parties to instigate a delivery of additional solution in order that this is replenished as quickly as possible.

11 WINTER CONSTRUCTIONAL PLANT

BEAR Scotland's Fleet Manager is responsible for all matters relating to servicing and maintenance of winter plant, and will ensure that all winter maintenance plant is properly maintained, including:

- drafting and implementing proactive maintenance regimes for specialist items of plant and equipment in accordance with F.T.A., DoT and Operator's Licence requirements;
- training drivers and mechanics on the plant they operate and maintain;
- fully resourced static and mobile workshops, including standby rotas for management and fitters;
- ensuring the fleet is effectively maintained and used in the manner for which it was intended;
- undertaking weekly checks and filing defect reports on all plant;
- calibration of salt spreading plant in September and January in accordance with the manufacturers' recommendations. All calibrations shall be carried out by an independent third party in the manner described in 11.5.

All Winter Fleet and Incident Support vehicles will carry a supply of 24 space blankets, 24 bottles of water and 24 energy bars.

11.1 Frontline Winter Constructional Plant

There will be two frontline vehicles located at the Chryston depot as detailed in Annex WSP 5 Table 1.

11.2 Reserve Winter Constructional Plant

There will be two reserve vehicles located at the Chryston depot as detailed in Annex WSP 5 Table 2.

11.3 Additional Winter Constructional Plant

Additional winter constructional plant is detailed in Annex WSP 5 Table 4.

Additional winter constructional plant would be required when assisting with clearance of snow or ice lying to a depth of greater than 100mm and any other winter weather conditions which cannot be dealt with by frontline or reserve vehicles. Mutual aid from our other contracts in the form of additional salt spreaders and snow ploughing machinery, specialist ice breaking machine and a snow blower to assist with winter activities may also be available depending on weather conditions of the other contracts.

On receipt of a forecast which predicts a major snowfall, the Winter Service Duty Officer shall contact all parties involved in providing additional winter constructional plant and resource, a rota with

contact details of all operatives involved shall be created and communicated to the Winter Service Manager, M80 DBFO Winter Service Duty Officers and South East Winter Service Duty Officers via email. Once conditions reach the stage that these additional resources are required, the M80 DBFO Winter Service Duty Officer shall call the appropriate operatives and give clear instructions on what they are required to do. Details of all actions shall be recorded in the appropriate electronic log.

Where advance notice is not received in relation to extreme conditions, the timescale of a maximum of four hours until the additional resource is operating at the required location will still be met.
Should snow removal be required, BEAR Scotland has in place sub-contractor hauliers who can be called upon to supply vehicles capable of transporting snow from the network.

11.4 Loading Winter Constructional Plant

A JCB 530/70 Telescopic Loader or similar will be located at BEAR Scotland's Chryston depot for the purpose of loading all winter constructional plant. See Annex WSP5 Table 5.

BEAR has in place a 24hr emergency call out with its loading shovel supplier. If they can't fix it on site a replacement will be sourced by the sub-contractor. Another alternative is the loading shovel in the adjacent depot with Aggregate Industries which can also be utilised through a mutual aid agreement with the depot. BEAR also has its own fitter on 24hr standby.

11.5 Calibration of Constructional Plant

BEAR Scotland will arrange for the calibration of all of its salt spreading equipment in September and January of each year. Calibration will be carried out in accordance with the requirements of BS1622 or equivalent manufacturers' recommendations. Calibration Certificates will be held in the Central Office. Calibration records will also be uploaded to the Sharepoint Intranet.

As pre-wetted salt is being used to treat the carriageway, the condition in BS1622 Appendix A performance test states that the calibration test will be carried out on a still day. BEAR Scotland propose to perform Appendix B static discharge performance test in conjunction with Appendix C road discharge performance test from BS1622 to verify calibration of the spreaders. Calibration will be fully carried out in accordance with the manufacturers' recommendations and will be independently tested and certified.

Calibration will ensure that the spread width settings provide for the full carriageway width being treated with salt. Re-calibration and testing will take place after repairs to the spreading equipment and at any time doubts over the accuracy of spreading are indicated from salting records.

The Winter Service Manager will liaise with the Fleet Manager, who is responsible for ensuring all calibrations are carried out as planned. The Winter Service Manager will also be present at the dynamic testing required at the pre-season calibration. This will be carried out in accordance with BS1622 Test C.

11.6 Breakdown of winter plant

Route 1 requires a $9m^3$ capacity vehicle of which there are 2 based at Chryston to complete a $20g/m^2$ treatment. Route 2 can be treated at $20g/m^2$ by any other spreaders at Chryston of which there are 4 including the patrol, therefore by utilising the existing spreaders at Chryston, cover can be arranged readily. Should both frontline spreaders breakdown then BEAR will mobilise a spreader from another of its depots in the SE or NW to complete the treatment. BEAR also has its own fitter on 24hr standby who can be contacted by the M80 DBFO Duty Officer or Incident Liaison Officers based at the South East Network Hub.

12 MAPS DRAWINGS AND GRAPHICAL INFORMATION

12.1 Maps

12.1.1 Precautionary Treatment Route Maps

Maps showing the general layout of the M80 O&M Works Site are included in Annex WSP2.

12.1.2 Forecast Station Location Map

A location map showing the site of the M80 Old Inns station for the M80 O&M Works Site is given in Annex WSP 6.

13 COMPILING AND MAINTAINING RECORDS

Records of decisions, amendments to decisions, actions taken and patrol communications will all be maintained on electronic logs. It is the responsibility of the M80 DBFO Winter Service Duty Officer to ensure all winter records (electronic and paper copies) are collected and maintained in a suitable format. Winter Records will be available to the Scottish Ministers Representatives via the BEARNET client access page for the M80 DBFO.

The vehicle data logs will be interrogated for effectiveness and efficiency of the operations. A daily report on the preceding day's winter maintenance operations will be submitted by the M80 DBFO Winter Service Duty Officer to the Winter Service Manager for perusal and action where required.

In addition, records as detailed in Appendix C of Part 2 of Schedule 4 will be held in appropriate electronic logs.

The following list identifies daily records which will be held electronically in accordance with Schedule 4 Part 2 Clause 3.2.3:

a) Decisions taken when and by whom;
b) Planned and actual treatment records;
c) Planned and actual response times achieved;
d) Planned and actual commencement times;
e) Planned and actual route times;
f) Planned and actual spread rates;
g) Winter Constructional Plant down time and software faults;
h) Winter Service plant deployment records (including global positioning system records) driver operator logs and recording of telephone calls;
i) Logs of telephone, e-mail and two way communication calls;
j) Loading point de-icing stocks and replenishment orders;
k) Ice prediction system records;
l) Weather forecasts and actual weather experienced;
m) Complaints from members of the public and other road users;
n) Accidents resulting from winter conditions;
o) Road closures due to winter conditions;
p) Weights and volumes as appropriate from de-icing material(s) spread for each route;
q) A log of hours for each operative spent on "call out" or "standby"; and
r) Winter patrol records.

In addition to these requirements Schedule 4 Part 2 Clause 3.3.10 also requires the following records to be maintained:

i) Time taken to travel the route
ii) Time taken to fit the plough
iii) Any problems encountered
iv) Any other relevant information

A shared area will be set up on the BEAR Scotland central computer server where all appropriate files to which the Scottish Ministers require access will be stored. These files will be updated as per the contractual requirements to ensure the data is as up to date as possible. The remote access for all files stored on the shared area shall be “Read only” to ensure the integrity of files.

14 SNOW POLES

There are currently no snow poles within the M80 O&M Works Site.

15 SNOW GATES

There are currently no snow gates within the M80 O&M Works Site.

16 VARIABLE MESSAGE SNOW AND ICE HIDDEN MESSAGE SIGNS

Variable message signs are in place throughout the M80 Stepps to Haggs O&M Works Site, including the M73/M80 Link Road. Following liaison with Traffic Scotland / Transport Scotland, and when circumstances permit, these signs will be utilised to relay information to the travelling public as to any predicted adverse weather conditions or current incidents on the M80 Stepps to Haggs DBFO relating to winter. Traffic Scotland operate and maintain all variable message signs on the M80 O&M Works Site.

17 SALT BINS AND SELF HELP HEAPS

There are currently no salt bins nor self-help heaps within the M80 O&M Works Site.

18 SALT MEASUREMENT APPARATUS

18.1 Details of equipment and locations and available recording methods

BEAR Scotland has a weighbridge at their Chryston Depot in order to accurately record the quantities of salt being used. The measure can provide an electronic printout which will be held as a winter record. The facility will be calibrated strictly in accordance with manufacturer’s instructions by an external sub-contractor.

19 SOUTH EAST NETWORK MANAGEMENT CONTRACT

From August 2020, BEAR’s Chryston Depot has been home to operatives and winter plant associated with the South East Network Management Contract. The M80 DBFO Winter Service operation based at Chryston is independent to the South East NMC operation, with separate rotas

for winter drivers alongside plant and salt stock at the depot that is allocated to either the M80 DBFO or S/E NMC and not both.

The exception to the above statement extends to the following points, with each of the ensuing items housed at the Chryston Depot and shared between the M80 DBFO and S/E NMC:

- Telehandler. This multi-purpose item of plant is used to load salt spreaders for both the M80 DBFO and S/E NMC treatment routes that operate out of Chryston;
- Brine saturator. The capacity of the brine saturator at the Chryston depot was increased in 2020 from 10,000 litres to 25,000 litres to service the S/E NMC pre-treatment and patrol route that operate out of Chryston alongside existing M80 DBFO routes. The increased capacity ensures sufficient brine is available at all times.

It should be noted that the equipment above being shared between the M80 DBFO and S/E NMC winter operation does not have an adverse impact on the delivery of the M80 DBFO Winter Service. In terms of salt management, frequent liaison is undertaken throughout the Winter Service Period between the M80 DBFO Winter Service Manager and the S/E NMC Severe Weather Manager to ensure that salt stock for both contracts is appropriately replenished for the duration of the winter season.

Annex WSP1 – Transport Scotland Trunk Road Network Snow Plan

For information on the most up to date Snow Plan for the M80 DBFO please go to the Transport Scotland website and published Snow Plans.

Details on the Winter Service Plans and Snow Plan information covering the various trunk road networks in Scotland can be found on the Transport Scotland website at the following location:
Winter service | Responsibilities | Transport Scotland

Annex WSP 2

Precautionary Salting Routes

Table 1

Route No	Depot	Description	Depot to Route (km)	Time to Route (mins)	Salting Length (km)	Aver Speed (km/hr)	Route Time (mins)	Route to Depot (km)	Alternative Access
1	Chryston	M80 DBFO Route 1	9.7	13.3	43.6	56.3	80.2	9.2	See route details
2	Chryston	M80 DBFO Route 2	6.8	8.3	24.1	55.9	87.3	6.5	See route details

Table 2

Route	Average Width of Route	Route Tonnage @ 10g/m^2	Route Tonnage @ 20g/m^2	Treatment Type
1	10	4.4	8.7	Pre-wetted salt
2	10	2.4	4.8	Pre-wetted salt

Table 3 (Resilience Precautionary Route)

Following dialogue with Transport Scotland on the matter of challenges faced during the Covid-19 pandemic and nationwide issues around the shortage of HGV drivers, an exercise was undertaken across the trunk road network to formalise routes known as resilience precautionary routes. These resilience precautionary routes would essentially see the trunk road network treated in 50% of the number of pre-cautionary routes noted in each respective Winter Service Plan. The single resilience precautionary route identified on the M80 DBFO is referred to in the table below, with the route itself consisting of the steps detailed in the following pages for M80 DBFO Route 1 directly followed by the steps detailed for M80 DBFO Route 2.

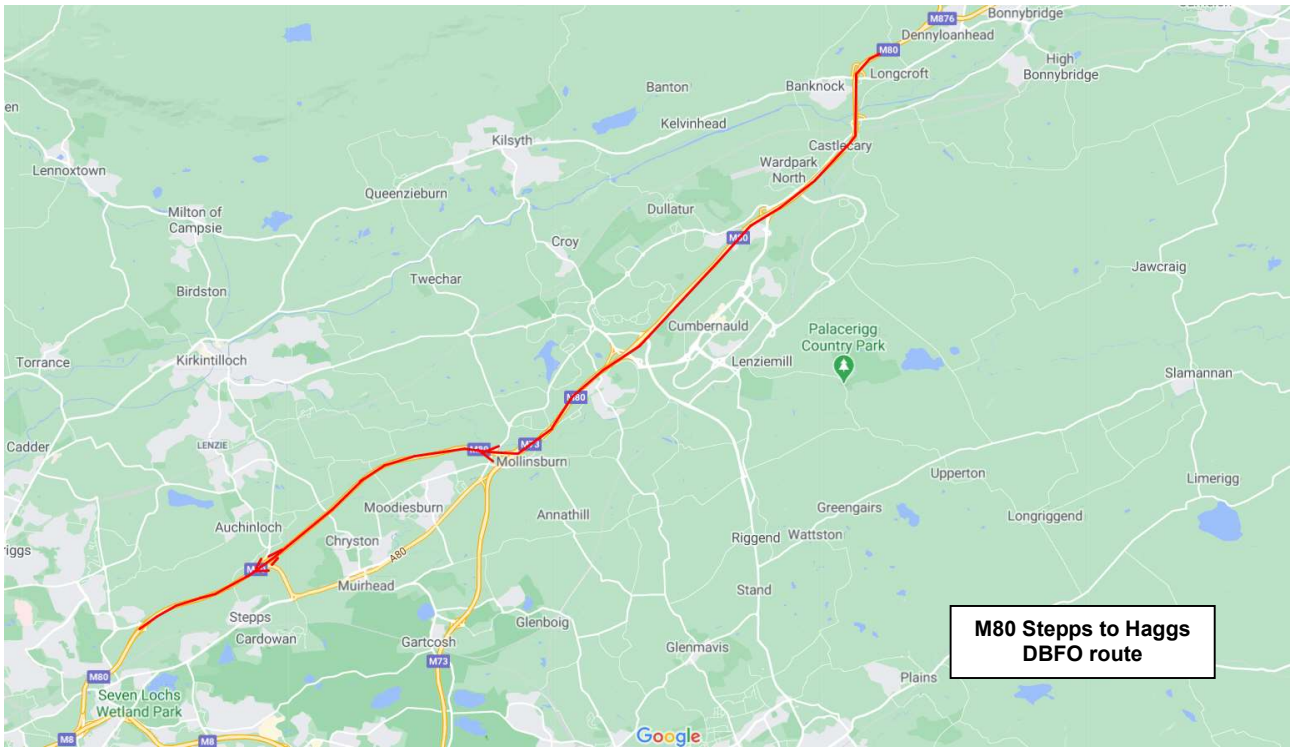
Route	Average Width of Route	Route Tonnage @ 10g/m^2	Route Tonnage @ 15g/m^2	Treatment Type
Contingency	10	6.8	10.3	Pre-wetted salt

Route: Route 1

Spread Rate: Up to 20g/m^2

Treatment Type: Pre-wetted Salt

Depot	Chryston	Route Efficiency (%)	57.9%
		Route Length (km)	75.3
Depot to Route (km)	9.7	Route Treated Length (km)	43.6
Depot to Route (mins)	13.3	Route Time (mins)	80.2
		Route Tonnage (t)	8.7
Route to Depot (km)	9.2	Route Average Width (m)	10
Route to Depot (mins)	10.6	Route Average Speed (km/hr)	56.3



Alternative Access: In the event of any interruption to the network which would require alternative access, the frontline vehicle will treat the network to the point of blockage and then use the local road network to circumvent the blockage. In the event of significant disruption due to snow events there may be no alternative access points to the M80 DBFO.

Route 1

Step	Salt/Travel	Route	Distance (km)	Time (mins)	Salt Usage at 20g/m^2 (tonnes)
1	Travel	Depot to start of Westfield N/B off slip from M80 via Gartferry Road, A752, A80, Crowwood Rdbt. and Jct.3.	9.7	13.33	0.00
START OF ROUTE					
2	Salt	Westfield N/B off slip to end (left side of splitter island).	0.5	0.49	0.10
3	Travel	From end of slip road to start of Westfield S/B on slip (right side of splitter island) via Deerdykes Rdbt.	1.4	3.74	0.00
4	Salt	Right side of splitter island on Westfield S/B on slip on to M80 S/B.	0.7	0.69	0.14
5	Salt	M80 S/B from end of Westfield on slip to end of DBFO route at Jct.2 Robroyston (MP 6/0).	7	6.86	1.40
6	Travel	S/B from end of DBFO route at MP 6/0 to start of N/B DBFO route at MP 6/0 via M80 Jct.1.	8.2	8.11	0.00
7	Salt	N/B from start of DBFO route at MP 6/0 to splitter island on Westfield N/B off slip.	7.2	7.06	1.44
8	Salt	Right side of splitter island on Westfield N/B off slip.	0.05	0.06	0.01
9	Travel	From end of Westfield N/B off slip to start of Westfield S/B on slip (left side of splitter island).	0.5	2.62	0.00
10	Salt	Left side of splitter island on Westfield S/B on slip.	0.05	0.06	0.01
11	Travel	S/B to start of Jct.3 S/B off slip.	4.5	4.41	0.00
12	Salt	Jct.3 S/B off slip to roundabout.	0.43	0.42	0.09
13	Travel	Enter Jct.3 Roundabout and take exit for M80 S/B.	0.15	0.69	0.00
14	Salt	Jct.3 S/B on slip to M80.	0.6	0.59	0.12
15	Travel	S/B from end of Jct.3 on slip to start of Jct.2 off slip.	1.5	1.47	0.00
16	Salt	Jct.2 S/B off slip to end.	0.45	0.44	0.09
17	Travel	From end of Jct.2 S/B off slip to start of Jct.2 N/B on slip.	0.4	1.00	0.00
18	Salt	Jct.2 N/B on slip to M80.	0.42	0.41	0.08

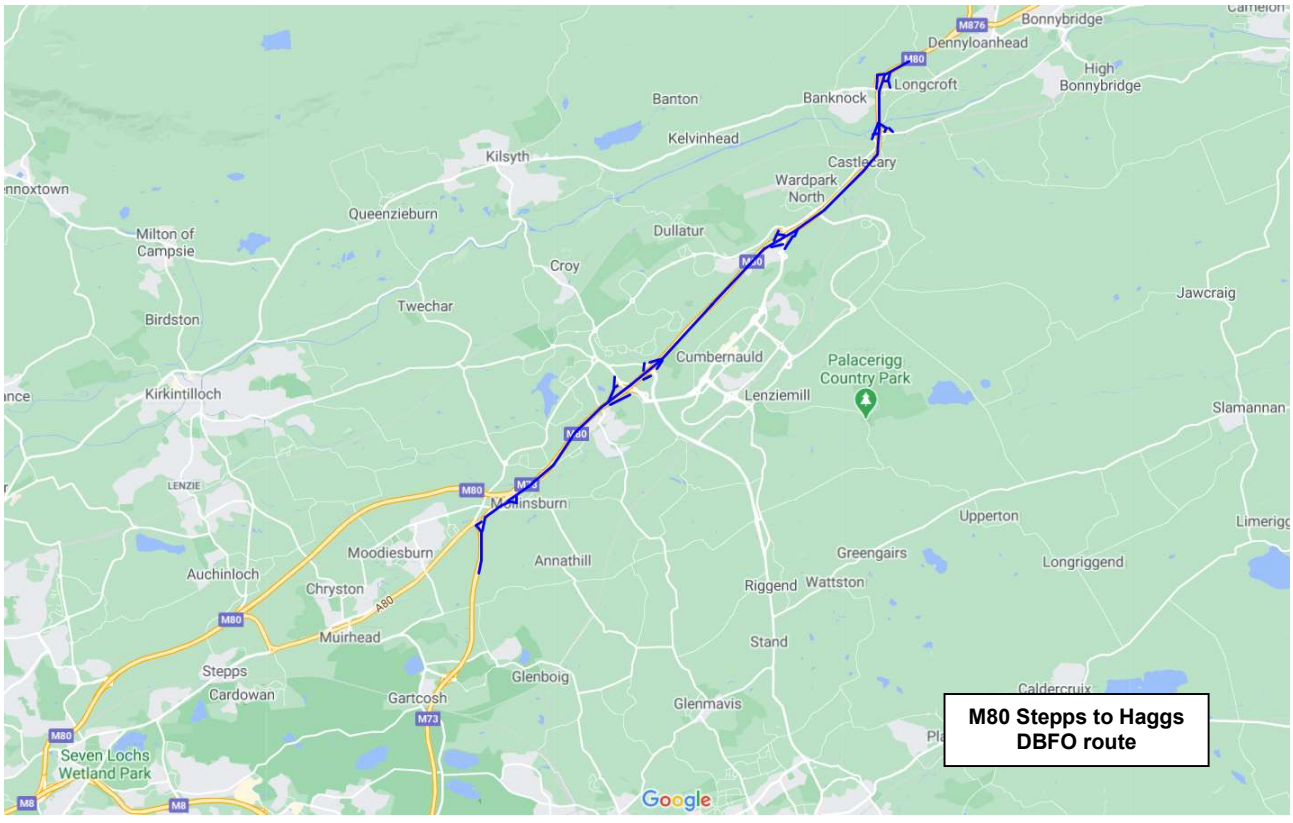
Step	Salt/Travel	Route	Distance (km)	Time (mins)	Salt Usage at 20g/m^2 (tonnes)
19	Travel	N/B from end of Jct.2 N/B on slip to start of Jct.3 N/B off slip.	1.7	1.67	0.00
20	Salt	Jct.3 N/B off slip to roundabout.	0.6	0.59	0.12
21	Travel	Enter Jct.3 Roundabout and take exit for M80 N/B.	0.15	0.65	0.00
22	Salt	Jct.3 N/B on slip to M80.	0.6	0.59	0.12
23	Travel	N/B from end of Jct.3 N/B on slip to start of Westfield N/B off slip.	4.2	4.12	0.00
24	Salt	N/B from start of Westfield off slip to start of Haggs N/B off slip.	11.7	11.47	2.34
25	Salt	N/B from start of Haggs N/B off slip to end of Haggs N/B on slip.	0.53	0.52	0.13
26	Salt	N/B from end of Haggs N/B on slip to end of DBFO route at MP 26/0.	0.25	0.25	0.05
27	Travel	N/B from end of DBFO route north of Haggs to M876 Jct.1, turn then return S/B to start of DBFO route north of Haggs at MP 26/0.	9	8.99	0.00
28	Salt	S/B from start of DBFO route at MP 26/0 to Westfield S/B on slip.	12.5	12.26	2.50
END OF ROUTE					
29	Travel	Back to depot via M80 Jct.3, Crowwood Rdbt., Muirhead, Gartferry Road.	9.2	10.62	0.00

Route: Route 2

Spread Rate: Up to 20g/m^2

Treatment Type: Pre-wetted Salt

Depot	Chryston	Route Efficiency (%)	27.04
		Route Length (km)	91.1
Depot to Route (km)	6.8	Route Treated Length (km)	24.6
Depot to Route (mins)	8.4	Route Time (mins)	96
		Route Tonnage (t)	4.94
Route to Depot (km)	6.5	Route Average Width (m)	10
Route to Depot (mins)	11.7	Route Average Speed (km/hr)	56.7



Alternative Access: In the event of any interruption to the network which would require alternative access, the frontline vehicle will treat the network to the point of blockage and then use the local road network to circumvent the blockage. In the event of significant disruption due to snow events there may be no alternative access points to the M80 DBFO.

Route 2

Step	Salt/Travel	Route	Distance (km)	Time (mins)	Salt Usage at 20g/m^2 (tonnes)
1	Travel	Depot to start of Lowwoods N/B off slip via Gartferry Road, Westfield link and M73 N/B.	6.8	8.34	0.00
START OF ROUTE					
2	Salt	Lowwoods N/B off slip to A8011 (taking right fork on the slip).	0.9	0.88	0.18
3	Travel	From end of Lowwoods N/B off slip to start of Lowwoods S/B on slip via Condorrat Ring Road.	1.1	2.37	0.00
4	Salt	Lowwoods S/B on slip to M80.	0.55	0.54	0.11
5	Salt	S/B from end of Lowwoods S/B on slip to start of M73 link road in dedicated lane.	1.5	1.47	0.30
6	Salt	S/B from start of M73 link road to end of DBFO route on M73 S/B (MP 9/4).	2.7	2.65	0.54
7	Travel	S/B from end of DBFO route at MP 9/4 to Jct.2a, turn then return to start of DBFO route on M73 N/B (MP 9/4).	5.2	4.46	0.00
8	Salt	N/B from start of DBFO route at MP 9/4 taking right lane at lane split prior to M80 merge, on to lane 1 at M80 merge then on to start of Lowwoods N/B off slip.	3.6	3.53	0.72
9	Travel	N/B from start of Lowwoods N/B off slip to start of Auchenkilns N/B off slip.	0.6	0.40	0.00
10	Salt	Auchenkilns N/B off slip to roundabout then take 2nd exit to start of Auchenkilns N/B on slip.	0.45	0.44	0.09
11	Salt	Auchenkilns N/B on slip to M80.	0.6	0.59	0.12
12	Travel	N/B from end of Auchenkilns N/B on slip to start of Old Inns N/B off slip.	2.4	1.60	0.00
13	Salt	Old Inns N/B off slip to end, then turn round on Old Inns Rdbt. to start of Old Inns N/B on slip.	0.7	1.25	0.14
14	Salt	Old Inns N/B on slip to M80.	0.67	0.71	0.13
15	Travel	N/B from end of Old Inns N/B on slip to start of N/B emergency lane prior to Castlecary Arches.	2.05	2.01	0.00
16	Salt	N/B emergency lane at Castlecary Arches.	0.25	0.31	0.05
17	Travel	N/B from end of N/B emergency lane at Castlecary Arches to start of Haggs N/B off slip.	0.95	0.93	0.00

Step	Salt/Travel	Route	Distance (km)	Time (mins)	Salt Usage at 20g/m^2 (tonnes)
18	Salt	Haggs N/B off slip to end.	0.5	0.53	0.10
19	Travel	S/B on A803 to mini-roundabout in Haggs and turn round to start of Haggs N/B on slip	0.55	1.68	0.00
20	Salt	Haggs N/B on slip to end.	0.6	0.64	0.12
21	Salt	N/B from end of Haggs N/B on slip to end of DBFO route at MP 26/0 in lane 1.	0.25	0.25	0.05
22	Travel	N/B from end of DBFO route at MP 26/0 to M876 Jct.1, turn S/B then on to start of S/B DBFO route north of Haggs at MP 26/0.	9	8.71	0.00
23	Salt	S/B dedicated lane on to Haggs S/B off slip to end from start of DBFO route at MP 26/0, then turn on mini-roundabout to start of Haggs S/B on slip.	0.75	0.74	0.15
24	Salt	Haggs S/B on slip to dedicated lane for Castlecary.	0.36	0.38	0.07
25	Salt	S/B dedicated lane for Castlecary from end of Haggs S/B on slip to start of Castlecary S/B off slip.	0.64	0.68	0.13
26	Salt	Castlecary S/B off slip taking right side of splitter island.	0.3	0.37	0.06
27	Travel	B816 over M80 to start of Castlecary N/B on slip.	0.35	0.84	0.00
28	Salt	Castlecary N/B on slip (1st slip) to lane 1 of M80 N/B.	0.27	0.26	0.05
29	Salt	N/B from end of Castlecary N/B on slip to end of Haggs on slip in lane 1.	1.38	1.35	0.28
30	Travel	From end of Haggs N/B on slip to start of splitter island on Castlecary S/B off slip via M876 J1.	11.7	11.90	0.00
31	Salt	Top of Castlecary S/B off slip to left of splitter island & turn left.	0.08	0.08	0.02
32	Travel	Travel & turn at access track to east of J6a off slip, back along B816 to start of Castlecary N/B on slip (old bus gate) via roundabout at Forest Road.	4.4	6.10	0.00
33	Salt	Castlecary N/B on slip (old bus gate slip).	0.07	0.07	0.01
34	Travel	From Castlecary N/B on slip to Haggs, turn, then S/B to start of S/B emergency lane at Castlecary Arches.	3	3.48	0.00
35	Salt	S/B emergency lane at Castlecary Arches on to dedicated lane for Old Inns to start of Old Inns off slip.	1.92	1.88	0.38

Step	Salt/Travel	Route	Distance (km)	Time (mins)	Salt Usage at 20g/m^2 (tonnes)
36	Salt	Old Inns S/B off slip going left at splitter island (Cumbernauld-bound).	0.95	1.01	0.19
37	Travel	From end of Old Inns S/B off slip to start of splitter island on Old Inns S/B off slip via Cumbernauld Village, Old Inns N/B on slip, M80 N/B, Haggs, then M80 S/B.	10.3	12.97	0.00
38	Salt	Right side of splitter island on Old Inns S/B off slip to traffic lights on A8011.	0.03	0.03	0.01
39	Travel	From end of Old Inns S/B off slip to start of Old Inns S/B on slip.	0.02	1.02	0.00
40	Salt	Old Inns S/B on slip.	0.45	0.48	0.09
41	Travel	S/B from end of Old Inns S/B on slip to start of Auchenkilns S/B off slip.	3.1	2.06	0.00
42	Salt	Auchenkilns S/B off slip to roundabout and take 2nd exit to start of Auchenkilns S/B on slip.	0.55	0.54	0.11
43	Salt	Auchenkilns S/B on slip to M80.	0.36	0.35	0.07
44	Travel	S/B from end of Auchenkilns S/B on slip to start of Mollinsburn S/B off slip.	2.8	1.86	0.00
45	Salt	Mollinsburn S/B off slip then turn round on mini-roundabout to start of Mollinsburn S/B on slip.	0.42	0.91	0.08
46	Salt	Mollinsburn S/B on slip to end.	0.57	0.56	0.11
47	Travel	S/B from end of Mollinsburn S/B on slip to M73 Jct.2a, turn N/B then to start of Westfield N/B off slip on M73.	6.8	6.07	0.00
48	Salt	Westfield N/B off slip to roundabout then turn to start of Westfield N/B on slip.	0.67	1.16	0.13
49	Salt	Westfield N/B on slip to M73.	0.44	0.43	0.09
50	Travel	N/B from end of Westfield N/B on slip to start of left split in road at the lane split prior to the M80 merge.	1.05	0.87	0.00
51	Salt	N/B on left lane following lane split prior to the M80 merge to end.	0.83	0.81	0.17
52	Travel	N/B from end of M73 on slip to start of left split in road on Lowwoods N/B off slip.	1.03	0.77	0.00
53	Salt	Left split in road on Lowwoods N/B off slip to the A8011.	0.39	0.38	0.08
END OF ROUTE					
52	Travel	Back to depot via Westfield Road and Gartferry Road.	6.5	11.65	0.00

Annex WSP 3

Table 1 – Minimum Salt Levels

Unit		
Minimum stock level at 1st October (tonnes)	Minimum stock level at 15th December (tonnes)	Minimum stock level at 1st March (tonnes)
600	800	400

Actual Salt Levels to be provided

Table 2 – Actual Salt Stock Levels

800 tonnes Chryston
30 tonnes of white salt

Annex WSP 4
Snow Routes

M80 Snow Plan Route 4

Route description: Frontline accompanied by reserve spreader to treat and plough as necessary between M80 J5 Auchenkilns and M80 J7 Haggs.

Frontline spreader will treat and plough main carriageway. Reserve spreader will alternate runs:

1. treating and ploughing main carriageway in tandem with Frontline, and;
2. treating and ploughing slips (and main carriageway in between).

Additionally, a Fastrac will be located at Castlecary emergency laybys and will operate between M80 J5 Auchenkilns and M80 J7 Haggs. The route will therefore be similar to “Route 4 for Frontline Spreader”.

Route 4 for Frontline Spreader

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M73 / M80	BEAR Chryston Depot	M80 N/B at J5 Auchenkilns	7.9	30	15.8
Salt	M80	M80 N/B at J5 adj. on slip	M80 N/B at end of J7 off slip	7.5	50	9.0
TF	A803	End of M80 N/B J7 off slip	Start of M80 S/B J7 on slip	0.3	20	0.9
Salt	M80	M80 S/B at start of J7 on slip	M80 S/B at end of J5 off slip	7.5	50	9.0
TF	A73	End of M80 S/B J5 off slip	Start of M80 N/B J5 on slip	0.4	20	1.1
Salt	M80	M80 N/B at start of J5 on slip	M80 N/B at end of J5 on slip	0.4	50	0.5
TF	M80 / A8011 / M80 / M73 / Gartferry Road / Auchengeich Road	M80 N/B at J5 adj. on slip	BEAR Chryston Depot	14.2	30	28.4

Total time from start to finish of patrol (Mins): 64.6

Route 4 for Reserve Spreader (every 2nd run)

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M73 / M80	BEAR Chryston Depot	M80 N/B at J5	7.9	30	15.8
Salt	M80	M80 N/B at J5 adj. on slip	M80 N/B at end of J6 off slip	3.3	50	4.0
TF	A8011	End of M80 N/B J6 off slip	Start of M80 N/B J6 on slip	0.1	20	0.3
Salt	M80	M80 N/B at start of J6 on slip	M80 N/B at end of J7 off slip	4.6	50	5.5
TF	A803	End of M80 N/B J7 off slip	Start of M80 S/B J7 on slip	0.3	20	0.9
Salt	M80	M80 S/B at start of J7 on slip	M80 S/B at end of J6 off slip	4.0	50	4.8
TF	A8011	End of M80 S/B J6 off slip	Start of M80 S/B J6 on slip	0.0	10	0.1
Salt	M80	M80 S/B at start of J6 on slip	M80 S/B at end of J5 off slip	3.6	50	4.3
TF	A73	End of M80 S/B J5 off slip	Start of M80 N/B J5 on slip	0.4	20	1.1
Salt	M80	M80 N/B at start of J5 on slip	M80 N/B at end of J5 on slip	0.4	50	0.5
TF	M80 / A8011 / M80 / M73 / Gartferry Road / Auchengeich Road	M80 N/B at J5 adj. on slip	Chryston Depot	14.2	20	42.6

Total time from start to finish of patrol (Mins): 79.9

M80 Snow Plan Route 5

Route description: Frontline accompanied by reserve spreader to treat and plough as necessary between M80 J3 Hornshill and M80 J6 Old Inns.

Frontline spreader will treat and plough main carriageway. Reserve spreader will alternate runs:

1. treating and ploughing main carriageway in tandem with Frontline, and;
2. treating and ploughing slips (and main carriageway in between).

Route 5 for Frontline Spreader

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M80	BEAR Chryston Depot	M80 S/B at J4	3.2	30	6.4
Salt	M80	M80 S/B at J4 adj. on slip	M80 S/B at end of J3 off slip	4.9	50	5.9
TF	A806	End of M80 S/B J3 off slip	Start of M80 N/B J3 on slip	0.4	20	1.2
Salt	M80	M80 N/B at start of J3 on slip	M80 N/B at end of J6 off slip	13.2	50	15.8
TF	A73	End of M80 N/B J6 off slip	Start of M80 S/B J6 on slip	0.3	20	0.8
Salt	M80	M80 S/B at start of J6 on slip	M80 S/B at J4 adj. on slip	8.1	50	9.7
TF	M80 / A806 / A80 / Cumbernauld Road / Chryston Road / Main Street / Gartferry Road / Auchengeich Road	M80 S/B at J4 adj. on slip	BEAR Chryston Depot	10.1	20	30.3

Total time from start to finish of patrol (Mins): 70.1

Route 5 for Reserve Spreader (every 2nd run)

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M80	BEAR Chryston Depot	M80 S/B at J4	3.2	30	6.4
Salt	M80	M80 S/B at J4 adj. on slip	M80 S/B at end of J3 off slip	4.9	50	5.9
TF	A806	End of M80 S/B J3 off slip	Start of M80 N/B J3 on slip	0.4	20	1.2

Salt	M80	M80 N/B at start of J3 on slip	M80 N/B at end of J4a off slip (Broadwood-bound spur)	9.0	50	10.8
TF	A8011 / B8048	End of M80 N/B J4a off slip (Broadwood-bound spur)	Start of M80 N/B J5 on slip	1.0	20	3.0
Salt	M80	M80 N/B at start of J5 on slip	M80 N/B at end of J6 off slip	3.7	50	4.4
TF	A73	End of M80 N/B J6 off slip	Start of M80 S/B J6 on slip	0.3	10	1.6
Salt	M80	M80 S/B at start of J6 on slip	M80 S/B at end of J5 off slip	3.6	50	4.3
TF	A73	End of M80 S/B J5 off slip	Start of M80 S/B J5 on slip	0.1	10	0.6
Salt	M80	M80 S/B at start of J5 on slip	M80 S/B at J4 adj. on slip	4.6	50	5.5
TF	M80 / A806 / A80 / Cumbernauld Road / Lindsaybeg Road / Gartferry Road / Auchengeich Road	M80 S/B at J4 adj. on slip	BEAR Chryston Depot	10.1	20	30.3

Total time from start to finish of patrol (Mins): 74.0

M80 Snow Plan Route 6

Route description: Patrol spreader accompanied by TM vehicle to plough as necessary between M73 J3 Mollinsburn and M80 J5 Auchenkilns.

TM vehicle will plough only. Patrol spreader will salt alternate runs:

1. treating and ploughing main carriageway in tandem with TM vehicle, and;
2. treating and ploughing slips (and main carriageway in between).

Route 6 for TM Vehicle

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M80	BEAR Chryston Depot	M73 N/B at J3	2.9	30	5.8
TF	M80	M73 N/B at start of J3 on slip	M80 N/B at end of J5 off slip	4.5	50	5.4
TF	A806	End of M80 N/B J5 off slip	Start of M80 S/B J5 on slip	0.4	10	2.1
TF	M80	M80 S/B at start of J5 on slip	M73 S/B at end of J3 off slip	3.8	50	4.6
TF	A73	End of M73 S/B J3 off slip	Start of M73 N/B J3 on slip	1.0	10	6.0
TF	Mollins Road / Gartferry Road / Auchengeich Road	Start of M73 N/B J3 on slip	BEAR Chryston Depot	3.1	20	9.3

Total time from start to finish of patrol (Mins): 33.2

Route 6 for Patrol Spreader (every 2nd run)

Action	Road	From	To	Distance (KM)	Average Speed (km/hr)	Time (Mins)
TF	Auchengeich Road / Gartferry Road / M80	BEAR Chryston Depot	M73 N/B at J3	2.9	30	5.8
Salt	M80	M73 N/B at start of J3 on slip	M80 N/B at end of J4a off slip (Cumbernauld-bound spur)	4.0	50	4.8
TF	A806	End of M80 N/B J4a off slip	Start of M80 S/B J4a on slip	2.8	10	16.8
Salt	M80	M80 S/B at start of J4a on slip	M73 S/B at end of J3 off slip	3.4	50	4.1

TF	A73	End of M73 S/B J3 off slip	Start of M73 N/B J3 on slip	1.0	10	6.0
TF	Mollins Road / Gartferry Road / Auchengeich Road	Start of M73 N/B J3 on slip	BEAR Chryston Depot	3.1	20	9.3

Total time from start to finish of patrol (Mins): 46.8

Annex WSP 5

Winter Service Constructional Plant

Table 1:

Frontline Winter Constructional Plant permanently available and located in Chryston Depot for Winter Service for carriageways.

Type of Winter Constructional Plant	Depot Location	Vehicle Capacity	No of Vehicles	Plant Use	Reg.
6 X 4 32T GVW	Chryston	12 m^3 Pre wet Spreader	1	Nil	PE64 BXZ
6 X 4 26T GVW	Chryston	9 m^3 Pre wet Spreader	1	Nil	SN69 WTC

Table 2:

Reserve Winter Constructional Plant permanently available and located in Chryston Depot for Winter Service for carriageways.

Type of Winter Constructional Plant	Depot Location	Vehicle Capacity	No of Vehicles	Plant Use	Reg.
6 X 4 26T GVW	Chryston	9 m^3 Pre wet Spreader	1	Nil	SN69 WSO
6 X 4 18T GVW	Chryston	6 m^3 Pre wet Spreader	1	Nil	SJ65 FVV
4x4 Ford Ranger with spreading capabilities and plough	Chryston	1 m^3 Pre wet Spreader	1	Nil	FY16 RNY

Table 3:

Reserve Winter Constructional Plant permanently available and located in Chryston Depot for Winter Service for non-motorised user facilities (not applicable in full services).

Type of Winter Constructional Plant	Depot Location	Vehicle Capacity	No of Vehicles	Plant Use	Reg.
Nil					

Table 4:

Additional Winter Constructional Plant.

Type of Winter Constructional Plant	Depot Location & Operator	No of Vehicles	Vehicle Capacity	Reg. No.	Provider Name and mobilisation arrangement details where third party provider
6 X 4 18T GVW ($6m^3$ pre-wet spreader)	Chryston – Operator may be sourced from BEAR other contracts	1	N/A	SJ65 FVO	BEAR NW or SE Winter Service Manager
Snow Blower	Burghmuir / Charlesfield – Operator may be sourced from BEAR other contracts	4	N/A	N/A	BEAR SE Winter Service Manager

Additional Winter Constructional Plant through contingency arrangements

Type of Winter Constructional Plant	Depot Location & Operator	No of Vehicles	Vehicle Capacity	Registration No.	Provider Name and mobilisation arrangement details where third party provider
JCB, Telehandler	Falkirk	Various	N/A		Lomond Plant
Telehandler	Motherwell	Various	N/A		GAP Hire
Loading Shovel	East Kilbride	2	N/A		Enviro-Clean

Table 5:

Loading Winter Constructional Plant permanently available and located in the M80 O&M Works Site at the loading point.

Type of Winter Constructional Plant & Registration No	Depot Location	Vehicle Capacity	No of Vehicles	Registration No.
JCB 530/70 Telescopic Loader	Chryston	1.5 m^3 bucket	1	N/A

Table 6:

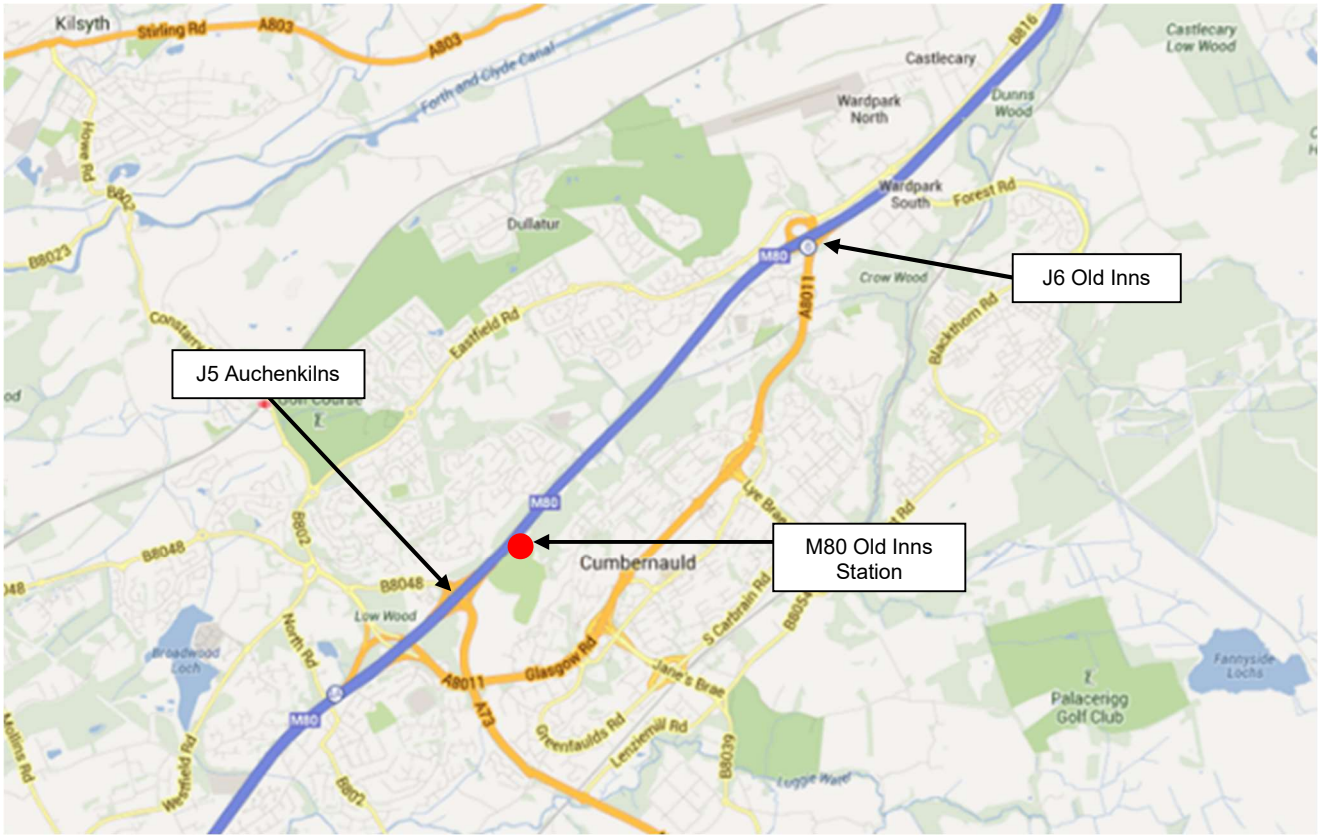
Winter Constructional Plant permanently available and located in Chryston Depot for Winter Service Patrols.

Type Winter Constructional Plant	Depot Location	Vehicle Capacity	No of Vehicles	Registration Number
6 X 4 18T GVW	Chryston	6 m^3 Pre wet Spreader	1	SJ65 FVS

Annex WSP 6

Below is a map showing the location of the M80 Old Inns Station:

Road Number	Location	Type
M80	Old Inns (Cumbernauld)	Vaisala



Annex WSP 7

Table 1: Forecast weather and road condition status

This table sets out the forecast weather and road condition status codes used in Schedule 4, Part 2, Appendix B, Table 2.

Forecast Weather			
A	Road surface temperature ≥ plus 1°C	G	Road surface temperature below minus 5°C following rain
B	Road surface temperature between plus 1°C and minus 2°C	H	Hoar Frost
C	Road surface temperature between minus 2°C and minus 5°C	I	Freezing fog
D	Road Surface temperature below 5°C	J	Freezing rain
E	Road surface temperature between plus 1°C and minus 2°C following rain	K	Snow accumulations up to 30 millimeters
		L	Snow accumulation over 30 millimeters
F	Road surface temperature between plus 2°C and minus 5°C following rain	M	Hard packed snow/ice
Road Conditions Status			
1. Road surface dry			
2. Frost susceptible area/known surface water run-off			
3 Road surface wet			

Requirements for De-icing Material Spread Rates (CONTINUED)

Table 2: Precautionary treatment salt spreading rates

This table gives the criteria for precautionary treatment and minimum salt spreading rates. The forecast weather and road conditions status codes are defined in Schedule 4, Part 2, Appendix B, Table 1.

Forecast Weather	Road Conditions Status		
	1 **Dry Road Surface (grammes per square metre)**	**2** **Frost susceptible /surface water run off area (grammes per square metre)**	**3** **Road Surface Wet (grammes per square metre)**
A	0	0	0
B	0	10 to 20	10 to 20
C	0	10 to 20	10 to 20
D	0	20	20
E	0	20	30
F	0	30	40
G	0	40	40
H	10	20	20
I	10	10	20
J	10	40	40
K	10	30	40
L	10	40	40
M	10	40	40

Requirements for De-icing Material Spread Rates (CONTINUED)

Table 3: Snow or ice clearance salt spreading rates

This table gives the minimum requirements for salt spreading rates for snow and ice clearance.

Road Surface Condition	Air Temperature	Treatment		
		Spreading (grammes per square metre)	Ploughing	Blowing
		Salt		
Ice Formed	Less than or equal to minus 5°C and stable	20 to 40	No	No
Snow covering exceeds 30 millimeters	Less than or equal to minus 5°C and stable	20	Yes	No
Snow covering exceeds 30 millimeters	Less than or equal to minus 5°C and dropping	20 to 40	Yes	Yes
Snow accumulating due to prolonged falls	Less than or equal to minus 5°C and stable	20 to 40	Yes (Continuous)	Where applicable
Hard packed snow/ice less than 20 millimeters thick	Greater than or equal to minus 5°C	20 to 40 (successive treatments)	No	No

Annex WSP 8

Daily Winter Action Plan – Planned

Action Summary
Summary of actions for the next 24hrs

Weather Forecast
Headline and confidence level
General Synopsis

Snow Summary
Snow Forecast

M80 DBFO All Routes - Action Plans

Route	Action	Cause	Start Time
M80 DBFO Route 1	No Action	No Hazard	15.05.2018 14:00
M80 DBFO Route 2	No Action	No Hazard	15.05.2018 14:00

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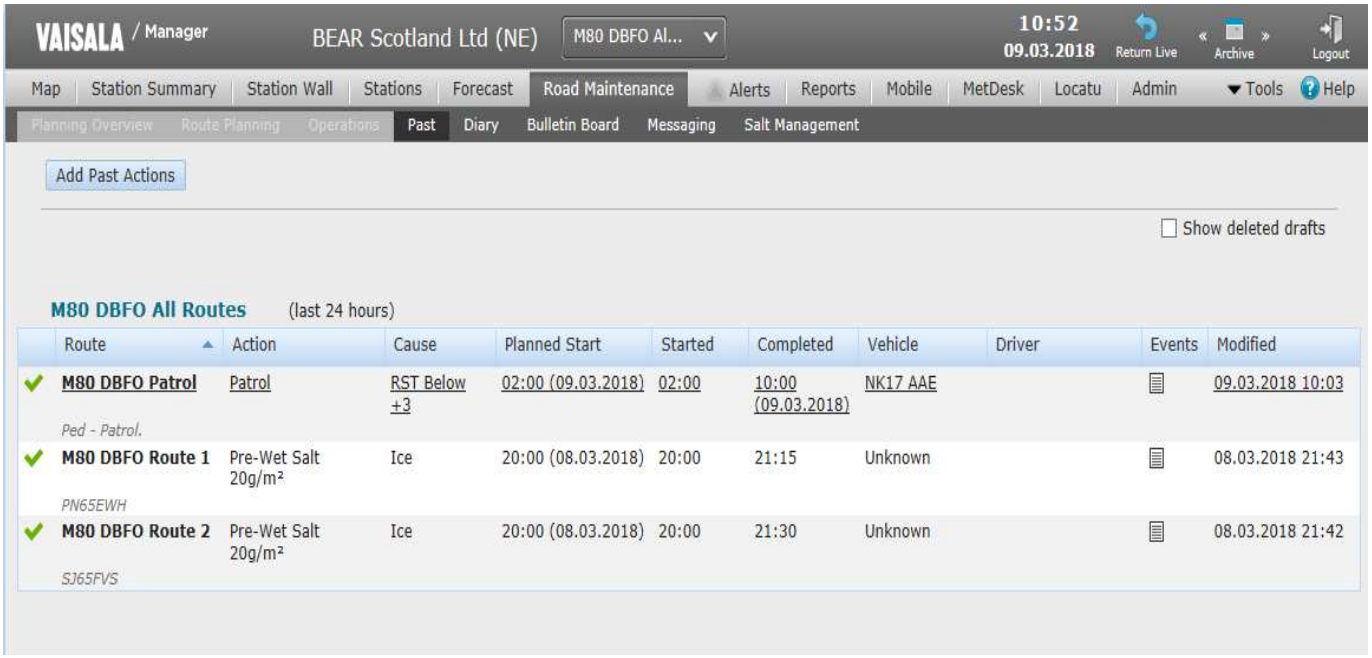
This message was sent by David Paton / BEAR Scotland Ltd (NE) via Vaisala RoadDSS Manager system.

Annex WSP 9

Daily Winter Action Plan – Actual



Annex WSP 10

Winter Drivers Record

Winter Drivers Record			
Document:	Form: #406	ACTION PLAN DATE: / /	
Issue:	#6		
Related to:	All Contracts	UNIQUE ID:	

BEAR SCOTLAND

Weighbridge ticket to be attached here

DEPOT:		VEHICLE REG.:	
ROUTE:		Time called out for Unplanned Action	
Brine Used	YES / NO	If not why?	

Routes which require Potassium Acetate:
North East Unit: NE20-10, NE40-17.
South East Unit: SE20-15, SE40-22.
North West Unit: NW20-07, NW20-10, NW20-14, NW40-10, NW40-12, NW40-17

If Route requires Potassium Acetate has it been used?	YES / NO	Amount used (ltr)		If not why?	

Weight when loaded	
Time Left Depot	
Start of Action – Date	
Start of Action – Time	
End of Action – Date	
End of Action – Time	
Time returned to Depot	
Weight on Return	

Note: In table below enter treatment code in appropriate column.
State approx. treated length (km) and locations for part-route treatments.

Action Taken	Planned	Unplanned
T1: Treatment 10 gms/sq.m.		
T2: Treatment 20 gms/sq.m.		
T3: Treatment 30 gms/sq.m.		
T4: Treatment 40 gms/sq.m.		
TE: Treatment Potassium Acetate		
TF - Plough/salt whole route as necessary		
TP - Plough/salt part route as necessary		
T*P: Treatment part route * = 1,2,3,4 or E		
Area's Req. Special Attention treated at 40 gms/sq.m		

Part route treatment	1. from		to	
	2. from		to	
	3. from		to	
	4. from		to	

Rate of Spread (g/sq m)		Spread Width (m)	

Did Planned Action commence on time?	Yes / No / Not applicable
Did Unplanned Action commence within 1 hour of call out?	Yes / No / Not applicable
Was pre-treatment completed within 2 hours?	Yes / No / Not applicable

If "No" to any of the above, give reasons/comment:

I confirm that the above is a true and accurate record of the Winter Maintenance action carried out. I claim that the above hours worked on unplanned treatment are exempt from UK domestic driver's hours restrictions.

Signed (Driver): **Name:** **Date:**

FOR SUPERVISORS USE ONLY

Supervisors Comments:

Document reason(s) for non-conformity, if applicable:

I have checked the above report and consider that the work has been undertaken in accordance with the specification and is a true and accurate record of the Winter Maintenance action carried out

Signed (Supervisor): **Name:** **Date:**

NOTE: Completed form to be returned to Control Room

Annex WSP 11

Motorway Patrols- These are not Treatment Routes

M80 DBFO Patrol Route	
Step 1	M80 Junction 4 Westfield S/B to Junction 2 Robroyston
Step 2	Turn around at Junction 2 Robroyston
Step 3	M80 Junction 2 Robroyston N/B to Junction 7 Haggs (including ARSA B&C)
Step 4	Turn around at M876 Junction 1 Checkbar
Step 5	M80 Junction 7 Haggs S/B to M73 S/B extent (including ARSA A)
Step 6	Turn around at M73 Junction 2a Gartcosh
Step 7	M73 extension N/B to M80
Step 8	Turn around at M80 Junction 5 Auchenkilns
Step 9	M80 Junction 5 Auchenkilns S/B to Junction 4 Westfield

Print Drivers Name		**Sign Drivers Name**	
Start Weight		**End Weight**	
Date:		**Vehicle Reg:**	

Patrol 1 (Main Carriageway) - start 02:00 **Start Time..... End Time…….**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Jct 4 Westfield					
Jct 2 Robroyston					
Jct 6 Old Inns					
Jct 7 Haggs					
Mollinsburn (M73)					
Jct 4 Westfield					

Patrol 2 (Slip Roads) - start 04:00 **Start Time..... End Time…….**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Jct 4 Westfield					
Jct 2 Robroyston					
Jct 6 Old Inns					
Jct 7 Haggs					
Mollinsburn (M73)					

Jct 4 Westfield					

Patrol 3 (Main Carriageway) - start 06:00 **Start Time..... End Time…….**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Jct 4 Westfield					
Jct 2 Robroyston					
Jct 6 Old Inns					
Jct 7 Haggs					
Mollinsburn (M73)					
Jct 4 Westfield					

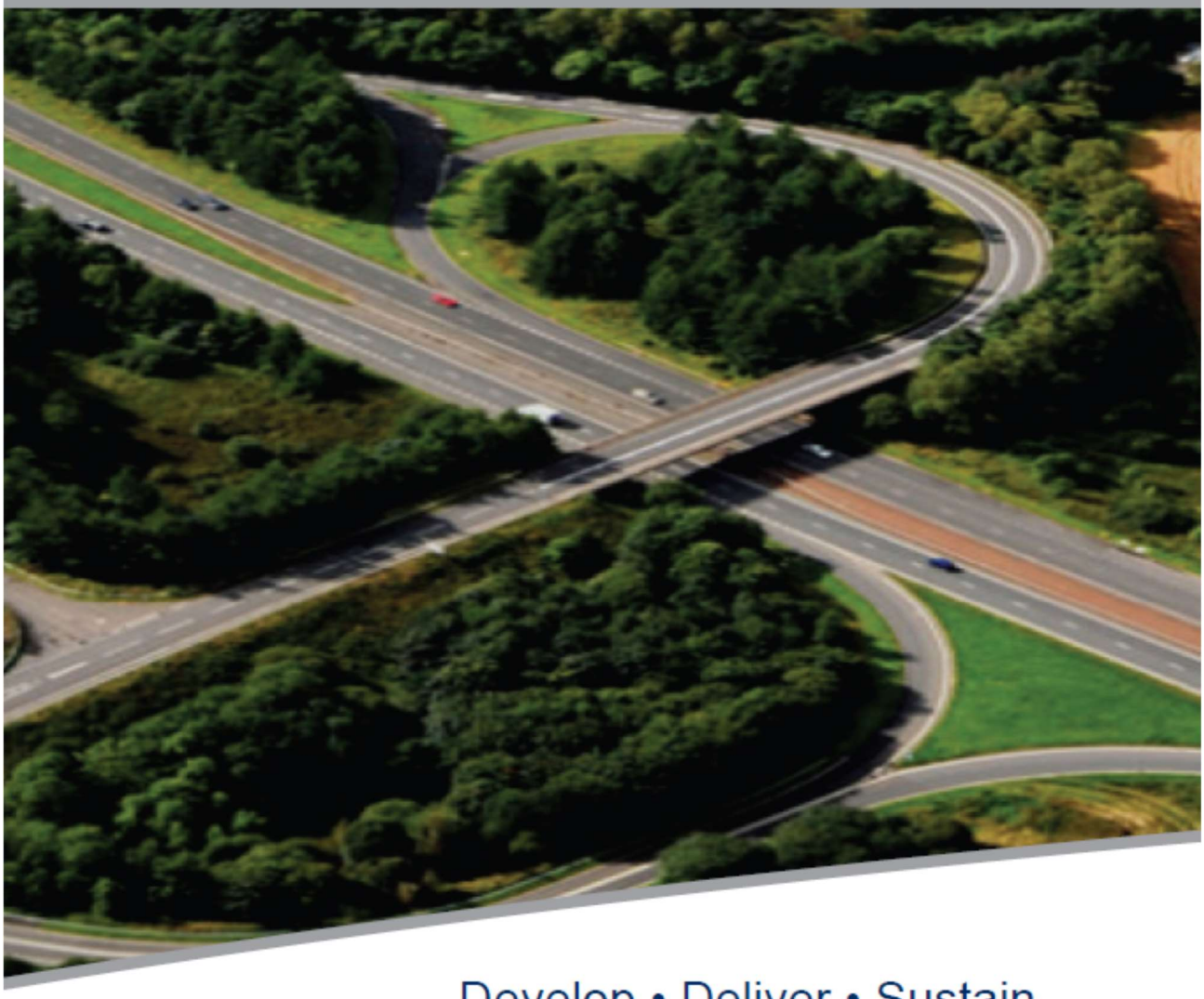
Patrol 4 (Slip Roads) - start 08:00 **Start Time..... End Time…….**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Jct 4 Westfield					
Jct 2 Robroyston					
Jct 6 Old Inns					
Jct 7 Haggs					
Mollinsburn (M73)					
Jct 4 Westfield					

NOTES:

- Information must be returned to Control Room every patrol.
- When not Patrolling wait at Auchenkilns Overbridge unless otherwise instructed.
- Return to Depot at 10:00hrs.

BEAR Scotland Limited
Chryston Depot
Auchengeich Road
Chryston
North Lanarkshire
G69 0JL



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