4TH GENERATION TERM CONTRACT FOR MANAGEMENT AND MAINTENANCE OF THE SCOTTISH TRUNK ROAD NETWORK NORTH EAST UNIT

WINTER SERVICE PLAN
1st October 2017 to 15th May 2018

Client:
Trunk Road and Bus Operations
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WINTER SERVICE PLAN - INDEX

Cover Sheet (Contract, Client, Operating Company Details)

	Name	Date
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1	[redacted]	Managing Director	BEAR Scotland Ltd
2	[redacted]	Operating Company Representative	BEAR Scotland Ltd.
3	[redacted]	Winter Service Manager	BEAR Scotland Ltd
4	[redacted]	Senior Operations Manager	BEAR Scotland Ltd
5	[redacted]	Operations Manager	BEAR Scotland Ltd
6	[redacted]	Assistant Operations Manager	BEAR Scotland Ltd
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8a-f	[redacted]	Winter Service Duty Officers	BEAR Scotland Ltd
9	[redacted]	Control Room	BEAR Scotland Ltd
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20	[redacted]	Police Scotland	Police Scotland
21	[redacted]	Head of Roads	Stirling Council
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23	[redacted]	Head of Roads	Aberdeen City Council
24	[redacted]	Head of Roads	Dundee City Council
25	[redacted]	Head of Roads	Fife Council
26	[redacted]	Head of Roads	Perth & Kinross Council
27	[redacted]	Head of Roads	Angus Council
28	[redacted]	Head of Roads	Moray Council
29	[redacted]	Head of Roads	Highland Council
30	[redacted]	Head of Roads	Clackmannanshire Council
31	[redacted]	WPR DBFO	Aberdeen Roads
32	[redacted]	FBOC Contract	Amey

1.0 MANAGEMENT ARRANGEMENTS

1.1 Winter Service Manager

1.1.1 Name

The Winter Service Manager will be [redacted].

1.1.2 Qualifications

[redacted]

1.1.3 Experience

[redacted]

1.1.4 Responsibilities

The Winter Service Manager is responsible for producing the Winter Service Plan for consent by Transport Scotland. He is responsible for the operation, review and development of that Plan throughout the winter season, thus ensuring the Operating Company fully discharges its responsibilities under the contract.

The Winter Service Manager has overall responsibility for winter maintenance activities including:

- collection and management of weather data
- maintaining salt stock levels and their storage facilities
- achieving response times for precautionary treatment, patrols and snow clearance
- plant and communications
- the ice prediction, weather forecasting service and weather radar system
- training of staff and operatives
- preparation and updating of rotas for Duty staff
- maintaining electronic records & manual records
- providing an annual winter service report
- liaising with third parties
- communication with Transport Scotland during severe weather events
- participation in weekly conference call with Transport Scotland
- implementing additional resources when required
- reporting weekly salt stock levels to the National Salt User Group through the DfT portal
- ensuring completion of Daily Action Plans and uploading to CMS

1.1.5 Winter Service Duty Officers (Duty Officers)

The Winter Manager will be supported by 6 No. Duty Officers working on a rotational basis. These posts are an integral part of the service as they provide immediate support and guidance to the Winter Control Room staff, allowing them to process the information being received whilst the Duty Officers interpret the forecast, make decisions on treatment and prepare the Daily Action Plan.

Duty Officers are:

[redacted]

[redacted] has 14 years trunk road maintenance experience. Earlier in his career he had spells in the winter control room. Euan has been involved in the management of the winter service since 2009.

[redacted] has 11 years trunk road maintenance experience. He has been involved in the winter service in a supervisory role for 9 years and has been involved in management of the service for 5 years.

[redacted] has 33 years trunk road maintenance experience. He has been involved in the winter service in a supervisory role for 11 years and has been involved in management of the service for 7 years.

[redacted] has 13 years trunk road maintenance experience. He has been involved in the winter service in a supervisory role for 13 years and has been involved in management of the service for 8 years.

[redacted] has 10 years trunk road maintenance experience. He has been involved in the winter service in a supervisory role for 4 years and has been involved in management of the service for 4 years.

[redacted] is a Roads Technician has now been involved in the winter service for around 18 months and has now completed one full winter season.

The Winter Service Duty Officer can be contacted via the Winter Control Room number in 1.3.3. During periods of severe weather the Duty Officers will assist in the Winter Control Room.

1.2 Winter Service Duty Staff

1.2.1 Not applicable

1.2.2 Winter Service Duty Controllers (Duty Controllers)

The Duty Controllers will work on a rotational basis in the Winter Control located in our Perth office. There will be one dedicated Duty Controller for each Unit working alongside each in the Control Room.

The Duty Controllers operate 24 hours and shall monitor the system, complete all records as required and remain in contact with all winter drivers ensuring any changes to road conditions are reported.

1.2.3 Qualifications

All the Duty Officers and Controllers named will be fully trained in basic Road Meteorology including the use, and interpretation, of ice prediction systems.

1.2.4 Experience

All Duty Officers shall have previous experience of monitoring the road sensor system and making decisions on treatment resulting from the receipt of the forecast information from the supplier.

1.2.5 Responsibilities

- **Duty Officer**: the role of the Duty Officer is primarily to interpret the daily forecast received, liaise with the weather forecaster and decide on required treatment and subsequently prepare the Daily Action Plan. When there are planned actions the Duty Officer will be in the control room and will be assisted by the Duty Controller to monitor conditions and make decisions on further treatments should they be required.
- **Duty Controller:** the Duty Controller will be based in our Winter Control Room with the primary responsibility of monitoring the ice prediction system, surface patrols (mobile sensors) and condition patrols (DSP 310) and notifying the Duty Officer of any changes. The Duty Controller has authority to escalate any proposed action but cannot reduce this without prior agreement with the Duty Officer.

  A Duty Officer will be available to assist the Duty Controller at all times and when there are planned actions he will be in the control room.

1.3 Monitoring Arrangements

1.3.1 Monitoring arrangements during normal working hours

During normal working hours monitoring will be carried out by the Control Room staff from 1st October to 15th May.

- Contact with expert weather forecaster provider include “change triggers”
- Feedback from inspectors during normal working hours
- Monitoring of ice sensors
- Compilation of daily action plan
- Monitoring RST trend against forecast
- Use of weather & traffic Scotland cameras
- Weather Radar
- Thermal maps where available
- Communications from external parties.
- Mobiles sensors
- Feedback from patrols

When severe snow conditions are forecast additional resources shall be deployed into the control room & an additional control room opened in the North of the unit to assist with operational decisions & control of operations during the snow event.

1.3.2 Monitoring arrangements outwith normal working hours

Outwith normal working hours (between 4pm and 8am) the control room staff shall monitor road conditions and will assess conditions relative to the original forecast. The following aids will be used to assist in this process:

- Contact with expert weather forecaster provider including “change triggers”.
- Monitoring of ice sensors
- Monitoring RST trend against forecast
- Use of weather & Traffic Scotland cameras
- Weather Radar
- Thermal maps where available
- Communications from external parties.

In the event of immediate adverse conditions, the Duty Officer will call out the relevant stand-by crews directly, instructing them to undertake specified reactive treatment.

The Dedicated 24/7 winter control room shall be in place and controllers shall be at hand to monitor the road conditions utilising the following tools.

- Feedback from winter patrols
- Mobile sensors
- Road condition information from new sensors
- When severe snow conditions are forecast additional resources shall be deployed into the control room & an additional control room opened in the North of the unit to assist with operational decisions & control of operations during the snow event.

1.3.3 Winter Control Room

The North East winter control room will be based at BEAR Scotland’s Perth Office and will be operated on a rotational basis by four dedicated North East Duty Controllers when no winter actions are being carried out. This control room also administers the North West Unit, A92 DBFO and M80 DBFO Contracts.

The Control Room will operate on a 24/7 basis.

The following number is answered by the control room staff:

[redacted]

Alternatively the landline number for the North East Unit is [redacted]

The Control Room will have access to all relevant contact phone numbers and winter maintenance systems such as Vaisala Bureau, Locatu, communications log database, thermal maps and weather radar.

When winter actions are being carried out the Duty Controllers will be assisted by the Duty Officer based in Perth as required by Schedule 7 Part 2 of the NE Contract.

There will also be a dedicated telephone line for Police Scotland within the Winter Control Room. This will allow direct contact at all times between Police Scotland and our Duty Manager. This number will only be issued to Police Scotland.

1.4 Personnel Resources

The resources detailed below will be the minimum numbers involved in delivering the winter service:

- 1 No. Winter Service Manager, supported by:
- 6 No. Winter Service Duty Officers
- 5 No. Winter Service Duty Controllers
- 58 No. Winter drivers
- 20 No. Patrol drivers

1.5 Call-Out Arrangements

1.5.1 Call-out arrangements during normal working hours

A winter rota will be prepared at the beginning of the winter season for staff and operatives involved in the winter service for that season. The rota will include contact details for all personnel involved and controlled copies will be issued to each individual prior to the commencement of every winter season.

Any changes to the rota will be communicated to the relevant parties involved in providing the winter service.

During normal working hours it will be the responsibility of the 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 anticipated that the requirement for call-out will be minimal from the beginning of November until the end of March, when a dayshift/nightshift system will be in place, with drivers immediately available on the Unit 5 days per week during the normal working week. Outside this period there will be 24 standby covered by two shifts.

From 1 October to 31 October and 1 April to 15 May driver standby rotas will be in place.

1.5.2 Call-out arrangements outwith normal working hours

It is the role of the Winter Service Duty Officer to contact the appropriate drivers and advise of the required winter action treatment. The personnel on the roster at shall be available to mobilise and commence treatment on the carriageway within 1 hour of being contacted.

1.5.3 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 drivers are rostered for any given week, cognisance of this will be taken into account when planning normal daily duties. This will ensure that drivers still have the ability to respond quickly to any call to carry out a winter service action at short notice within the contractual response times.

1.5.4 Contact arrangements outwith normal working hours

A standby roster will be prepared detailing which individuals will be utilised in the event of action being required. Home and mobile telephone contact numbers will be available for all individuals.

1.5.5 Mobilisation times

Depots have been sited in locations where both the Trunk Road gritting routes and drivers are easily accessible; this ensures that drivers are consistently able to access the start of each precautionary treatment within one hour of a call from their home. To assist in the speed of access to the gritting routes, spreaders will be pre-loaded on any night when action is a possibility.

1.5.6 Winter Staff Duty Roster

29/09/2017	[redacted]	[redacted]
06/10/2017	[redacted]	[redacted]
13/10/2017	[redacted]	[redacted]
20/10/2017	[redacted]	[redacted]
27/10/2017	[redacted]	[redacted]
03/11/2017	[redacted]	[redacted]
10/11/2017	[redacted]	[redacted]
17/11/2017	[redacted]	[redacted]
24/11/2017	[redacted]	[redacted]
01/12/2017	[redacted]	[redacted]
08/12/2017	[redacted]	[redacted]
15/12/2017	[redacted]	[redacted]
22/12/2017	[redacted]	[redacted]
29/12/2017	[redacted]	[redacted]
05/01/2018	[redacted]	[redacted]
12/01/2018	[redacted]	[redacted]
19/01/2018	[redacted]	[redacted]
26/01/2018	[redacted]	[redacted]
02/02/2018	[redacted]	[redacted]
09/02/2018	[redacted]	[redacted]
16/02/2018	[redacted]	[redacted]
23/02/2018	[redacted]	[redacted]
02/03/2018	[redacted]	[redacted]
09/03/2018	[redacted]	[redacted]
16/03/2018	[redacted]	[redacted]
23/03/2018	[redacted]	[redacted]
30/03/2018	[redacted]	[redacted]
06/04/2018	[redacted]	[redacted]
13/04/2018	[redacted]	[redacted]
20/04/2018	[redacted]	[redacted]
27/04/2018	[redacted]	[redacted]
04/05/2018	[redacted]	[redacted]
11/05/2018	[redacted]	[redacted]

1.6 Communications Equipment

Good communication systems are essential for effective winter maintenance management and the following systems will be adopted:

- telecommunications – land line and cellular GSM.
- satellite tracking of BEAR Scotland vehicles.
- e-mail.
- Airwave communication
- internet – refer Communications Plan
- social media eg Twitter, Facebook, blogs etc - refer to Communications Plan

All depots will be contactable by both land line telephone and facsimile. In addition, all managers, supervisors, prime plant and winter maintenance units will have individual GSM mobile telephones so that they can be contacted at all times. In the case of winter maintenance vehicles, hands-free mobile phones are fitted.

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

BEAR implement a policy whereby all users who have a desktop personal computer or a laptop computer will have their own individual e-mail address. This is carried out by a Wide Area Network system; the various secondary depots are linked by ISDN or analogue lines to the Central Office, which is in turn linked by Kilostream or ISDN lines to the main central servers controlling the IT network.

Information and data can be exchanged quickly around the Unit, with our internal and external customers, emergency services, Statutory Authorities and between our shareholders using Microsoft Outlook as the e-mail software. Social media such as Twitter will be also used as an information tool.

Airwave communication is fitted to both Cat A & B patrol vehicles with drivers fully trained in the use of the system.

1.7 Training for Managers and Other Staff

1.7.1 Details of previous training

All current Duty Officers/ Controllers have been trained in Basic Road Meteorology and the use of Ice Prediction Systems. All our current winter drivers have been trained to a level equivalent to SVQ/City & Guilds level or equivalent in winter maintenance.

1.7.2 Details of proposed training

Prior to the commencement of the winter season, a training programme will be carried out for all personnel involved in providing the winter service. This will include the following:

Refresher training for Duty Officers and Controllers on decisions, communication, contract requirements etc. to be provided by the Winter Service Manager.

Seminar for winter drivers detailing routes, contract requirements, response times, treatment times, communication, health & safety, areas requiring special attention and importance of providing good quality service. This again will be provided by the Winter Service Manager.

New recruits to the winter service will be fully trained prior to any involvement in providing the winter service. All drivers will be formally trained to SVQ/City & Guilds level or equivalent in winter maintenance.

BEAR staff will also participate in the annual “snow desk” winter scenario training when requested.

2.0 WEATHER FORECASTING

2.1 Purpose

It is the intention that the weather forecasts by expert meteorologists give an accurate indication of weather conditions so that the personnel involved in the provision of winter service are able to prepare a winter action plan which shall prevent or anticipate prevailing weather conditions and allow sufficient time to pre-treat the carriageway prior to the onset of snow or ice.

2.2 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 forecasters around the clock.

2.3 Weather Forecasting Service

An expert weather forecasting service will be provided by MET Desk. The service shall consist of the provision of the following:

- 36 hour forecast text
- 2-10 day text forecast
- 36 hour forecast graphs for each forecast outstation within North East unit
- Evening updates to both 36 hour text & forecast graphs
- Forecast consultancy service for advice 24/7.
- Time step thermal maps where available.

The above will allow the Duty Officer to prepare a daily winter action plan by 15:00 hours each day, advising of all carriageway pre-treatments to be carried out for that day.

2.3.1 Route Based Climatic Domains

Route based climatic domains will be related to the 20g treatment routes. Route specific temperature forecasts will be provided for each day of the Winter Service season.

Effective monitoring of this will be carried out by patrol vehicles which are all equipped with Surface Temperature Sensors.

2.3.2 Weather Radar

Weather radar shall be used via an internet based site, which will give 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 improves the accuracy of assessing the timing, nature and intensity of precipitation, particularly snowfall.

2.3.3 Ice Sensors and weather forecast sites

31 No. Ice Sensors are strategically placed throughout the network. The sensors will be polled at intervals of 20 minutes between 1 October and 15 May. All data will be collected by the Ice Prediction System's Master Station, accessible by computer. Weather forecast sensors have added functionality to allow modelling of the temperature characteristics of the road pavement. They assist in producing road-specific weather forecasts.

Sensors are calibrated twice per year (prior to start of season and during the winter season) and their performance monitored electronically with any issues being checked out on site, as required.

2.3.4 Thermal mapping

Thermal maps are no longer used in the North East Unit

2.4 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 make the most appropriate decisions for winter service actions. These computerised systems include as follows:-

- Bureau service – for collection of ice sensor data. The bureau service is provided by Vaisala and composes of a large central database which collects data from all ice sensors at up to 20 minute intervals. Service Providers daily and 2-10 day weather forecasts are also stored on the bureau.

- Vaisala Icecast viewer which allows the Winter Service Manager and Winter Service Duty Officers interrogate the bureau to give the most up to date conditions at the ice sensor locations on the Trunk road network. This allows them to make informed decisions in relation to winter service actions and direct resources appropriately. Service Providers forecasts can also be accessed from the bureau via Icecast viewer allowing action plans to be created and these action plans monitored against forecasts.

- Also in addition to Icecast viewer the bureau sensor data can be accessed via a web based system from any terminal which has internet access and where the user has the appropriate user name and password. The Icenet system gives similar data to the Icecast system with the ability to access full archive data going back six years.

- An internet based system supplied by MET Desk 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.

- Sharepoint is BEAR Scotland's company intranet which holds all the Management System information and electronic records.

Access to computerised Daily Winter Action Plans both planned and actual for Transport Scotland and PAG shall be via the BEAR Scotland intranet site Winter Log. The winter log database shall contain all action plans which can be viewed by typing the required date into the query and viewing either the planned or the actual action plan for the requested date.

The mobile road sensors (Vaisala DSP310 Road Condition Sensor) on the patrol vehicles will show live data & archived data from the sensors & this data shall be accessed via the Vaisala website. These will be fitted to 2 of the NE Unit Patrol vehicles registrations are SJ65 FVP & SJ65 FVW.

Additional Patrol sensors shall be fitted to all frontline spreaders which shall supply additional data for operators & controllers throughout the season.

3.0 MONITORING ARRANGEMENTS FOR AREAS REQUIRING SPECIAL ATTENTION

During the winter season, drivers/ inspectors will be instructed to pay particular attention to these areas. Any problems or potential problems identified will be actioned appropriately and communicated to the Duty Officers/Duty Controllers, who will record in the communications log such incidences and actions as carried out by the drivers.

In addition during the winter patrol period, patrol drivers will be instructed, where locations are identified on the patrol routes, to pay particular attention to these areas and any other areas that they come upon which maybe frost susceptible, particularly run off areas and the patrol drivers shall treat these areas accordingly, advising controllers of such incidences so that these can be recorded in the communications log.

Gradient Locations – The winter service patrol drivers will monitor these areas during their patrol and will carry out spot treatments as required. For forecast snow conditions bags of 50% abrasive aggregate/ 50% salt will be placed on the verge prior to the onset of the snow to be used to assist large goods vehicles maintain traction. Fastrac tractors and those of the supply chain partners, which can be used to tow large goods vehicles, will be deployed to those areas as required. The tractors are specially fitted out to be able to tow large goods vehicles and the drivers have been trained to the relevant sector scheme.

Any additional areas identified during the winter season will be brought to the attention to the Duty staff and added to the appropriate annex. When severe weather is forecast areas requiring special attention will receive additional treatments as detailed in Annex 7.2 F. These locations will be regularly reviewed and amended as necessary. BEAR Scotland's Planned Maintenance Team has carried out surfacing and drainage works at some of the known run-off areas during 2014. It would be prudent to monitor these areas through the coming season before removing them from Annex.

4.0 DECISION MAKING

4.1 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 and footways free from snow and ice.

It is the duty of the Winter Service Manager to hold regular reviews throughout the winter season to address any problems which may have occurred. This will take the form of briefings to all key staff on nights where difficult road conditions have been experienced. The philosophy will be to have a 'preventative' approach rather than 'reactive' approach in all decision making.

The Winter Service Manager will authorise the daily action plan, which will be developed by the Duty Officer.

4.2 Role of the Winter Service Duty Officer

The Duty Officer is responsible for decision making, monitoring the ice detection system, including updated forecasts and any dialogue with weather forecasters, to assess whether any changes are required to the daily action plan. Where any changes to the daily action plan are considered necessary then the Duty Officer will relay this information to the Depot Supervisors (BEAR Scotland and Aberdeen City Council) confirming the decision.

The Duty Controllers will assist the Duty Officer in monitoring the ice detection system. The Duty Controllers will contact the Duty Officer if there is any significant change from the forecast road surface temperatures and precipitation. Particularly overnight the Duty Controllers can upgrade actions if conditions deteriorate. The Duty Controllers cannot cancel actions without the Duty Officers consent.

When snow is forecast the Duty Officer shall take into account forecast elevations of snow using Appendix WSP 9 when making the planned treatment decisions.

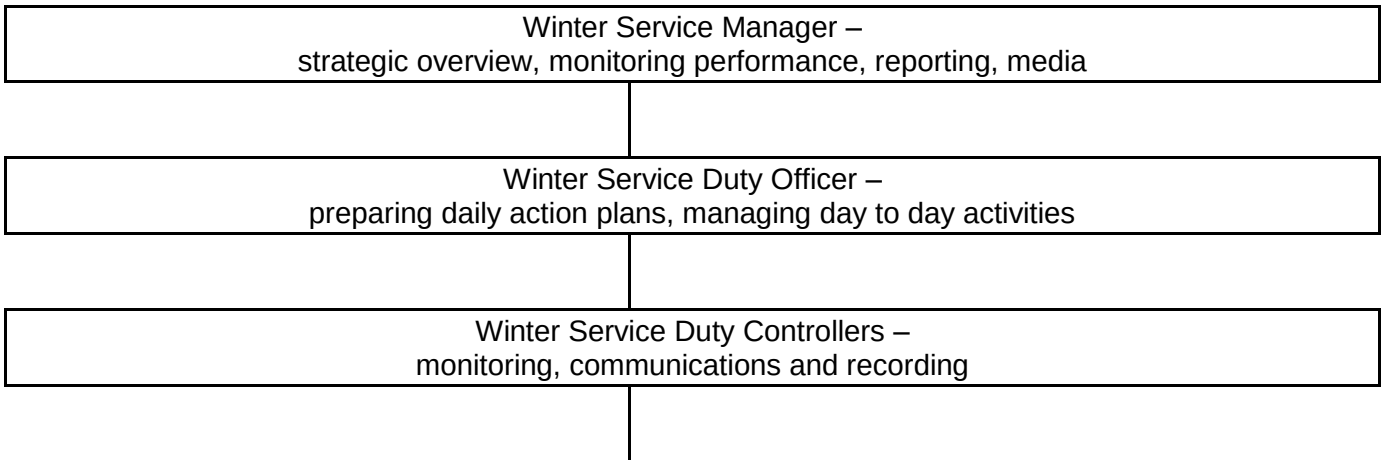
4.3 Role of the Winter Service Duty Controller

The Duty Controller will assist the Duty Officer in providing the winter service. The Duty Controller will assist in the monitoring of the ice prediction system and will notify the Duty Officer of any changes. The Duty Controller is allowed to escalate any proposed action but cannot reduce this without prior agreement with Duty Officer. In addition they will be responsible for recording all winter maintenance activities and checking treatment times and salt usage.

Duty Controllers are responsible for the maintenance and updating of operational records including the following:

- Annex 7.2/K Treatment Matrix will be used to make treatment decisions
- treatment records & Patrol records
- material usage
- road closure locations and times
- logs of communications to and from vehicles on route & any other sources
- software faults
- electronic data from data loggers
- reserve and additional plant paper records.
- social media updates
- upload of Daily Action Plans to CMS

Summary of the Winter Maintenance Management Arrangements



4.4 Winter Service Patrol Mobilisation

The requirement to carry out a Winter Service Patrol will be established as part of the preparation of the daily action plan and instruction will be given as appropriate in accordance with Schedule 7 Pt 2 cl 2.7.4 where the road surface temperature is less than or equal to 3 ºC.

Routes have been designed to comply as follows:-

Cat A patrols shall operate from 02:00 – 10:00 at two hourly intervals as per Schedule 7 Part 2 Clause 2.7.10. and shall between patrols sit on route at prescribed locations.

The route for the motorway is designed so that the patrol vehicle, when working, is able to attend any location on its route within 30 minutes of a call from the Winter Duty Service Officer/Controller. The routes for “A” class roads are designed so that the patrol, when working, is able to attend any location within 30 minutes of receiving a call from the Winter Service Duty Officer. The eight “A” patrols alternate between a one hour patrol and a one hour standby on each route.

Cat B patrols shall operate from 00:00 to 09:00 at 3 hourly intervals i.e. 00:00 – 03:00, 03:00 – 06:00 & 06:00 – 09:00.

Patrols times may be amended from the above times should the weather forecast predict severe winter weather which may result in traffic delays and disruptions to users caused by snow and ice conditions.

The winter service patrols will operate outwith the specified times when forecasts indicate a high risk of severe conditions due to snow or ice. The vehicles will be used for snow clearance duties on any part of the trunk road network outwith the normal patrol times. During the normal patrol times their snow

clearance duties will be restricted to their patrol routes. The operational shift pattern used allows these patrols to be operated continuously 24 hours per day.

Patrol routes are detailed in Appendix WSP1.

4.5 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 an action plan prepared each day by 1500hrs following receipt of an expert weather forecast relayed through the ice prediction system. Treatments will be in accordance with the treatment matrices detailed in *Annex 7.2/J.* Thereafter and in particular where forecasts are of low confidence, conditions will continue to be monitored by the Duty Controllers; and where conditions require further precautionary treatments, these will be ordered whether part of the action plan or not.

4.6 Proposals for monitoring the effectiveness of de-icing materials

Winter Duty staff will use a variety of methods to assist with assessing the effectiveness of the de-icing materials which have been spread on the carriageway. These methods include:

- Ice stations detail residual salt and give alarms to indicate low residual salt under certain conditions, however, it should be remembered that particularly in drying out conditions such readings may be unreliable
- Warnings and alarms from ice stations
- Experience of local areas and previous actions
- Feedback from patrol drivers & road condition sensors
- Mobile Patrol sensors
- Advice from weather forecasters, particularly on likely precipitation (use of weather radar) which may cause salt to be washed from carriageway
- Feedback from external parties such as Police Scotland.

All of the above will be used by the Duty staff to make an informed decision as to the status of residual salt on the carriageway, and whether further pre-treatment is required.

4.7 Road Closure snow gate operational procedures

There are no snow gates in the North East Unit. Police Scotland will make the decision to close any road and will also make the decision to re-open the road with the guidance of BEAR Scotland. There are however, recently installed ‘Virtual gates’ on the A96 at Glens of Foudland the implementation procedure for these gates is detailed in Section 18 Snow Gates of this Winter Service Plan.

4.8 Activation of snow and ice and hidden message signs

Where hidden message signs are erected and the decision has been taken to close a road, consultation will be held with Police Scotland to ascertain as far is practicable whether it is safe in the circumstances for an employee to be deployed to uncover these signs. If it is deemed safe, a winter driver will be deployed by the Winter Service Duty Officer to uncover the hidden message signs. Regular contact with any such employees will be kept between the driver(s) and the winter controller to ensure the safety of the employee and that the hidden message signs have been uncovered. The location of snow and ice and hidden message signs are detailed in Paragraph 16 (x).

4.9 Road surface temperatues forecast below -7 ºC

When Road surface temperatures are forecast to be less than -7 ºC consultation with the Director shall be held with a view to potentially utilising alternative de-icers which are more effective at such temperatures.

A method statement for use of alternative de-icers is included in Appendix WSP 11.

5.0 LIAISON & COMMUNICATION

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

5.1 The Director

At the completion of each winter season, BEAR Scotland will prepare an annual report in accordance with Annex 7.2/B of Part 2 of Schedule 7. This report will be submitted to the Director prior to 31 May; and within 14 days, an annual review meeting will be held to discuss the contents of the report and performance of BEAR for the winter season just ended. Comments will be taken on board by BEAR in the preparation of the Winter Service Plan (WSP) for the forthcoming season and amendments to the previous WSP made prior to submission by 31 July.

On a daily basis the BEAR Scotland Daily winter action plan will be uploaded to the winter database which Transport Scotland and PAG Plus have access to view.

During periods of prolonged severe weather, BEAR Scotland will update the Director at regular intervals of conditions on the Trunk Road network. If a road is closed due to severe weather conditions, the Director will be immediately informed by a phone call or text message, and confirmed in writing via email within 12 hours of the closure.

5.2 Police Scotland

For compiling the annual Winter Service Plan, an annual meeting will be held with Police Scotland so that any amendments can be introduced prior to submitting the WSP to the Director for his approval. The meeting shall take the form of reviewing the draft WSP for the forthcoming season. Police Scotland will comment on what they see as problem areas which may be improved upon.

During the winter season, it is essential that good communication lines are kept between BEAR and Police Scotland. This is particularly the case during periods of severe weather. A dedicated phone line will be set up for the emergency services and should only be known to them, thus enabling Winter Service Duty Officers to clearly identify emergency calls from any emergency service including Police Scotland.

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

5.3 Traffic Scotland Operator

BEAR will ensure in conjunction with Police Scotland, that during periods of severe weather, a consistent message is given to the Traffic Scotland Operator so that accurate messages can be displayed on the variable message signs and on the Traffic Scotland Internet web site.

BEAR's Daily winter action plan shall be submitted to the Traffic Scotland operator on a daily basis by no later than 15:00 hours.

5.4 Adjacent Road Authorities

Adjacent road authorities and highway authorities will be issued with a copy of the Winter Service plan.

BEAR will issue daily to all adjacent road authorities its daily winter action plan and receive the same in return.

Winter issues shall also be an item on the agenda at liaison meetings with all adjacent road and highway authorities.

5.5 Adjacent Trunk Road Operating Companies & DBFOs

Adjacent Trunk Road Operating Companies & DBFOs will be issued with a copy of the Winter Service plan.

BEAR Scotland will issue daily to all adjacent Trunk Road operating companies & DBFOs its daily winter action plan and receive the same in return.

Winter issues will also be an item on the agenda at liaison meetings with all adjacent Trunk Road operating companies & DBFOs

5.6 Network Rail

There are no railway crossings on the North East Unit, however on a daily basis the BEAR Scotland daily winter action plan will be submitted to Network Rail.

5.7 Communications Strategy

We will discuss winter service provision at the regular liaison meetings held with the adjacent local authorities and Operating Companies to ensure that there are no issues at boundary interfaces. We will also undertake liaison meetings with Police Scotland prior to the start of the winter season to apprise them of the details of the Winter Service Plan.

On a day to day basis our procedures will ensure that we have robust systems in place to notify all relevant organistaions of the winter service actions we plan to carry out. We will also have procedures to request Traffic Scotland, where appropriate, to display specify winter service related messages on the variable message signs installed across the trunk road network.

We will use a variety of social media forums to proactively inform the travelling public of the winter service we will provide. For example, Twitter messages will advise the public of the daily forecast, the action to be taken and when it will be carried out.

6.0 COMMUNICATIONS – See 5.0 above

7.0 MUTUAL AID ARRANGEMENTS

7.1 Mutual Aid

7.1.1 BEAR Scotland will liaise closely with already well established winter maintenance contacts within all local authorities to co-ordinate resources including labour, plant & salt to assist any party requiring mutual aid.

Management of mutual aid shall be agreed & co-ordinated at a senior management level and shall be recorded in full detail.

Mutual aid shall only be executed when the following conditions have been satisfied:-

- Trunk Road network in free flowing condition with no snow hazards
- Weather forecast is showing no imminent snowfall
- Agreement to free resources is agreed to by Transport Scotland

Local Authority Contacts :-

We have mutual aid arrangements in place with the following bodies:-

- Aberdeen, Inverness & Dundee airports
- Kinross Services
- St. Fergus terminal
- Mossmorran
- Neighbouring Local Authorities and Operating Companies
  AWPR – Aberdeen Roads

BEAR Scotland shall supply to local communities in extreme conditions 1 tonne bags of salt on receipt of order from the Director.

8.0 WINTER SERVICE PATROLS

8.1 Winter Service Plant and Reporting

8.1.1 From 1 November to 31 March inclusive Winter Service Patrols shall be carried out on those sections of Trunk Roads identified in Appendix WSP1 Table 7.2/J/2 and the plant designated to carryout these patrols shall be detailied in Appendix WSP1 Table 7.2/J/1.

8.1.2 Each patrol route shall update whilst carrying out patrols a patrol record and submit a detailed report on completion of their shift as detailed in Appendix WSP 8/2

9.0 TREATMENT ROUTES

9.1 Precautionary Treatment Routes

Precautionary treatment routes for carriageways have been separately identified and numbered while individual route cards have been provided as Appendix WSP2 to Annex 7.2/J. There is also a summary table of all routes which includes the loading & alternative loading points for the spreaders.

All routes have been designed to ensure that treatment time will be completed within 2 hours of commencement. Furthermore, each route has been assessed to ensure that the contractual response time in Paragraph 3.2.1 of Part 2 of Schedule 7 Part 2 of one hour will be met. In the design of these routes due cognisance has been taken of likely driver's locations and the need to ensure that rota's are carefully managed in this regard. On some occasions it may be necessary to pre-load spreading vehicles as instructed by the Winter Service Duty Officer.

Should for whatever reason the normal access to a route be blocked, this route will be accessed from an alternative depot, which will be detailed in WSP2 to Annex 7.2/J, and/or making use of diversion routes using local authority road network.

A map of each proposed route has been provided in WSP2 to Annex 7.2/J.

Treatment of 2+1 junctions & sections will be undertaken in accordance with requirements set out on Schedule 7 Part 2 Clause 3.3.8 with the spread pattern adjusted to suit.

Treatment of all precautionary routes will include areas deemed to be contiguous with and included in the total width of the main carriageway as included in Schedule 7 Part 2 Clause 3.3.6. Non-contiguous laybys shall not receive precautionary treatment. However where ice is present and following snowfall the non-contiguous laybys shall be cleared once the carriageway is cleared of snow.

BEAR Scotland will carry out treatment to all Category A footways, footpaths and cycle facilities as identified in WSP 13.

A combination of footpath spreaders and hand spreading will be used to pretreat such facilities as required. Salt bins will be strategically positioned to assist in the carrying out of this function. Utilisation of both sensors & patrols shall be used to monitor conditions on all footways to ensure treatment can be carried out within contractual timescales.

It is proposed that all treatment for carriageways will be carried out using pre-wetted salt in accordance with Para 5.1.3 of Schedule 7 Part 2.

It is proposed that all treatments for footways, footbridges and cycle facilities will be carried out in accordance with Schedule 7 Part 2 Cl 3.1.15.

Treatments will be carried out as per the requirements as detailed in WSP 13. Maps showing footway treatment locations and footway classifications are shown in WSP 13

Whilst we will comply fully with the requirement in Paragraph 1.4.3 of Schedule 7 Part 2 to have trained drivers for each item of front line Winter Constructional Plant, it is also proposed to have a roster of four drivers for each precautionary treatment route in order to fully comply with driver's hours regulations.

9.1.1 In urban areas there are no separate cycling facilities from the carriageway in the North East unit.

9.2 In Winter season 2016/17 a trial has been carried out using brine only utilising a liquid spraying vehicle, it is prposed that this trial will continue for the full season 2017/2018. The section of the trial will cover route 11 which covers the Southern part of the A9. Treatments will be carried out as follows :-

20g/m2 will relate to 30ml/m2 Brine
10g/m2 will relate to 15ml/m2 Brine

Brine only treatments will not be carried out when snow is forecast.

10.0 SNOW AND ICE CLEARANCE

10.1.1 Snow Clearing

Where hard packed snow and ice not exceeding 20mm thick has formed, and the air temperature is above minus 5°C, removal will be achieved by successive spreading of de-icing material. Below minus 5°C or where the snow or ice is more than 20mm thick great care will be taken as the use of de-icing material alone can result in an uneven and slippery surface. A single sized abrasive aggregate of particle size of 6mm, or 5mm sharp sand and having low fines content will be added to the de-icing material on a 1:1 ratio. Reversion to the use of de-icing material only will be made as soon as possible. Abrasive aggregates will be considered as a supplement in urban areas where de-icing material alone would provide an unacceptably slippery surface.

During prolonged periods of snowfall at locations where the use of salt for de-icing is prohibited, ploughing will be continuous followed by repeated applications of de-icing chemical. If snow becomes hard packed consideration will be given to applying 5mm sharp sand to aid traction while snow clearing operations are being carried out.

10.1.2 Description of Arrangements and Resources for Snowfall

Once a forecast of significant snowfall is received we will implement the Snow Forecast Resource Deployment Matrix in Table 7.2/K/2.

All Front Line, Reserve and Additional Winter Service Plant, apart from snow blowers, will be equipped with snow ploughs to effectively clear ice and snow. Details of Service Winter Plant are provided in Appendix WSP4 of this document. Ploughing routes can be found in Table 7.2.J.6.

Table 7.2.K.4 sets out the conditions and de-icing spread rates for snow and ice clearance of carriageways.

BEAR Scotland will, so far as is reasonably practicable, ensure sufficient resources are mobilised to prevent snow or ice from remaining on Trunk Roads, and put into place specific arrangements to ensure that these resources are mobilised to ensure that the timescales for snow clearance laid out in Annex 7.2/D Table 7.2.D.1 are achieved.

The WSDO will determine the requirements to mobilise sufficient resources and fit ploughs from the 2-5 day weather forecast. Winter Service shifts and the preparation of de-icing and ploughing equipment will be instructed by the WSDO, subject to prior approval by the Winter Service Manager.

Details of snow blowers, loading shovels, de-icing vehicles fitted with plough blades and other Winter Service Plant provided directly by BEAR Scotland and through Supply Chain Arrangements can be found in Section 11 of this document.

ANNEX 7.2/D – Snow Clearance

Table 7.2.D.1 – Snow Clearance

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

10.1.3 Road Closure Procedure Including Use of Snow Gates

There are no snow gates in the NE Unit

10.1.4 Prolonged Snowfall Strategy

During prolonged periods of snowfall, ploughing will be continuous from the onset of snow to prevent a build-up of snow and compaction by traffic. Ploughing will continue until the Trunk Roads are clear of snow and ice. Reserve and Additional Winter Service Plant will be used, as necessary, to supplement Front Line Winter Service Plant in snow conditions.

When planning and carrying out snow clearance, BEAR Scotland will pay particular attention to the layout of the carriageway in terms of the overall number of lanes and the location of entrance and exit slip lanes. Snow clearance of slip roads will be co-ordinated with main carriageway clearance, and a clear path kept open between those entry and exit points where frequent lane changes are necessary.

For dual carriageways and wide single carriageway roads, echelon ploughing will be carried out utilising two snow plough vehicles moving in the same direction, one behind the other in adjacent lanes.
Irregular windrows caused by ploughing passes, especially those that weave from one lane to another are dangerous, and will be avoided, as they may tempt drivers to overtake by squeezing into the partly cleared lane. Lanes will be completely cleared, such that any windrows of snow remaining form a smooth and continuous line with no sudden encroachments into the cleared path. Clearance of snow from contiguous and remote laybys will be carried out once the main carriageway, junction areas and crossovers have been cleared of snow.

In extreme conditions BEAR Scotland will supply bulk bag salt supplies to communities to enable self help where approved by Transport Scotland.

Care will be taken to avoid damage to road surfaces, road studs, roadside furniture and structures. At roadworks, traffic management equipment must not be disrupted. An accumulation of ploughed snow creating a ramp adjacent to safety fences and concrete barriers will be avoided.

Where conventional ploughing or snow ploughing is not possible, for example:

- in built up areas,
- in exceptional circumstances when the snow on the road is deep and cannot be removed by conventional ploughing or snow blowing
- when de-icing treatment over packed snow is likely to provide an unacceptable surface,
- when the traffic is insufficient to disperse the snow,

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.

When snowploughing or snow blowing operations are undertaken care will be taken that snow does not build up across:

- railway tracks or against gates
- bridges
- parapets
- fences and safety fences
- walls and other boundaries

Speeds of ploughing vehicles will be regulated, particularly at features such as underbridges where snow could be thrown over the bridge parapet, and adjacent to the central reserve where snow could be pushed into the opposing carriageway. When ploughing snow, other vehicles will not be overtaken unless stationary.

Recognising that additional resources may be required for echelon ploughing in snow conditions, Table 7.2.J.4 details snow ploughing routes.

BEAR Scotland will immediately notify the Traffic Scotland Operator by telephone following a major incident which has caused or will cause significant disruption to traffic flow

10.1.5 When ploughing wide single carriageway roads to remove snow accumulations from the two-lane section of three lane sections of road, the priority will be to keep lane 2 open to traffic, and the

procedure will be to plough snow from lane 2 into lane 1 initially. Once lane 2 is free of snow, all resources will concentrate on lane 1, ploughing snow towards the carriageway channel. This particularly applies to WS 2+1 roads and roads with crawler lanes.

Resources shall be deployed to ensure that footways, footbridges & cycle facilities are cleared of snow and ice in accordance with Paragraph 3.2.4 of Schedule 7 Part 2. In essence all Category A & B footways as detailed in Annex 7.2/E shall be clear of all snow and ice by 0800 hours or within two hours of snow ceasing to fall during the period 0600 hours to 1800 hours. Category C footways shall be clear of all snow and ice by 1700 hours the following weekday. Maps showing details of the footways, footbridges and cycle facilities are detailed in Appendix WSP 2. Mobilisation of the above resources will be based on network condition reports received from winter drivers who have been carrying out ploughing at affected locations or from any other third party report where footway conditions have been identified as requiring removal of snow or ice.

When severe snow conditions are forecast the precautionary treatments on steep inclines as detailed in Annex 7.2.F.3 shall include additional spread rates at these locations with the rate at these locations being increased to 40g/m2.

In extreme conditions, such as when temperatures drop below levels at which sodium chloride is ineffective, the Operating Company shall use alternative de-icing materials in accordance with the guidance on use of such materials, to be provided by the Director and subject to his written consent.. Such alternative de-icing material shall be described in the Operating Company's Winter Service Plan.

Where appropriate consideration will be given to deploying additional measures such as using a Raiko ice breaker or using de-icing agents such as Ecothaw.

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

10.1.6 Vertical Barriers – there are permanent concrete barriers at A90 Powrie Brae, north of Dundee and A90 Brechin Bypass. Care will be taken to ensure that deep lying snow is ploughed away from these vertical barriers by the use of tandem ploughing to the left verge.

10.1.7 Plans Showing the Location of the Footways, Footbridges and Cycle Facilities in Categories A, B, C and D

The maps included in WSP2 in Section 15 shows the location of Category A, B C and D footways, footbridges and cycle facilities within the North East Unit.

> We recognise the importance of footways to local communities and will prioritise clearance in accordance with the requirements of Annex 7.2/E. During snowfall sufficient resources, supplemented by our supply chain partners, will be deployed to clear snow from Category A, B and C footways particularly. These resources will utilise small tractors with ploughs, small footway snow blowers and mini-excavators as appropriate and necessary.
>
> We will encourage community self-help during winter conditions through engagement with local community councils. We will seek their assistance with the precautionary treatment of Category C and D footways and clearance of snow from the Category D footways. Where there is a willingness to co-operate we will provide them with self-help kits of backpack brine sprayers, intermediate bulk containers of brine, hand-push salt spreaders, salt stocks, snow shovels and personal protective clothing. Training and induction into safe working methods will also be provided to all volunteers.

Monitoring arrangements with the self-help communities will be put in place using our safety inspectors to ensure that stocks of brine and salt are replenished when required. The safety inspectors will also be responsible for monitoring the salt levels in the salt bins located throughout the network.

Where hard packed snow or ice (not exceeding 20 mm) is present and the air temperature is above 5 ^{o}C consideration will be given to the use of alternative de-icers.

10.2 Road Closures

Any decision to close a road will normally be taken by Police Scotland. This decision will normally be relayed by Police Scotland to the Control Room, using the dedicated phone line. The Winter Service Duty Controller is responsible for liaison with the Police Scotland.

The Winter Service Duty Officer, the Director (TRBO) and Traffic Scotland will be informed immediately by telephone, and in writing within 12 hours, of any decision to close a road, or of other major problems encountered within the Unit due to winter weather conditions.

Police Scotland will normally notify the other Emergency Services of any road closures and arrange for the provision of advance warning signs and/or will activate variable message signs where appropriate.

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

11.0 GUIDANCE ON DEALING WITH FREEZING RAIN

Guidance on dealing with 'Freezing Rain'

This advice has been prepared to assist service providers in developing procedures for taking the necessary actions both in advance of and during an occurrence of freezing rain. The advice is not intended to prescriptively define how freezing rain should be dealt with, as this is an issue for the individual service provider and is dependant on local circumstances.

It is recognised that the prediction of freezing rain is difficult and the action necessary to deal with it is problematic but service providers need to consider and plan actions to be taken when such events occur. It is important that all details of the actions intended for dealing with the phenomenon of freezing rain are documented in this Winter Service Plan.

Considering the limits in the effectiveness of treatments in dealing with freezing rain it is essential that all practical measures be 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:

11.1 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 should be documented in the Winter Service Plan. Other aspects of advance planning include training and exercises.

Specific measures that should be considered include:

Prior to the commencement of the winter season, agreement should be reached with Police Scotland and, where applicable, Traffic Scotland on procedures for dealing with occurrences of freezing rain and any incidents that may occur during or following such conditions.

Outline operational arrangements should be developed and documented within the Winter Service Plan. Although the adverse effects of freezing rain can impact across any part of the network particular consideration should be given to those parts where the impact may be more significant such as on gradients or difficult alignments.

11.2 Operational Arrangements

Operational arrangements should include details of treatment regimes. In general, freezing rain should be treated in a similar manner to snow, i.e. treatment in advance of and during the event and then treatment following as required.

Specific measures that should be considered include:

If the condition of freezing rain is anticipated contact with Police Scotland, adjoining service providers and Local Authorities is to be made to acquaint them of the possibility and the proposed action.

Prior to the arrival of the freezing rain a pre-treatment is to be made in the same manner as would be made prior to snow falling.

Constant monitoring of the situation is to be made and an additional treatment is to be carried out immediately the rain commences and continued until such time that the rain has ceased or the temperature of the road has risen above freezing.

Freezing rain usually occurs along the line of an incoming warm front. If possible, 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. Use should be made of weather radar where available, to help determine the timing of treatment. Consideration should 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.

Some salt will inevitably be lost during and following treatment and therefore careful consideration needs to be given to the requirement for continued successive treatments.

11.3 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. The main action is to inform road users of the hazard but more pro-active measures might be required. For example, consideration should be given to closing the road as the rain arrives and holding the traffic (rather than diverting) until such times as it is deemed safe to proceed. Such considerations will need to be made on a local basis taking into account local circumstances.

Specific measures that should be considered include:

Where available fixed or mobile Variable Message Signs should be used to warn road users of the hazard. The existing established procedures for requesting VMS settings to be made should be followed well in advance. The following legend is currently the most appropriate for use in these circumstances:

SKID RISK SLOW DOWN

Traffic Scotland's Press Officer should be contacted in order that the local media can be advised as necessary.

Where available, use of variable mandatory speed limits should be considered. This will require arrangements and protocols to be established with Police Scotland or Traffic Scotland National Control Centre (TSNCC) as part of the advance planning procedures.

Consideration should 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. This will require arrangements and protocols to be established with Police Scotland or TSNCC Operations Managers as part of the advance planning procedures

In addition to the arrangements made in respect of advance planning, operational procedures and hazard mitigation it will be necessary to consider the arrangements to be implemented should any incidents occur as a result of the freezing rain. This may, for example, include liaison with Police Scotland or TSNCCs to provide advance warning to recovery companies. Procedures for giving such advance warning would need to be established in advance with Police Scotland and TSNCCs and documented within the Winter Service Plan.

12.0 DE-ICING MATERIALS

12.1 Type

De-icing materials will primarily comprise rock salt and potassium acetate. In extreme conditions, such as when temperatures drop below levels at which sodium chloride is effective, BEAR Scotland will consider the use of alternative de-icing materials such as Magnesium Chloride, in accordance with the guidance on use of such materials which has been provided by the Director and subject to his written consent. In such an event, BEAR Scotland will provide the Director with a method statement on how the alternative de-icing material is to be used and liaise closely with SEPA in the event of its usage. See Appendix WSP 11 Alternative De-Icer Method Statement for precautionary treatment using alternative de-icing materials..

12.2 Specification

Potassium Acetate used for de-icing Operations will comply with the Ministry of Defence Specification 68-118 (De-icing/Anti-Icing Fluid for Run Ways).

Potassium Acetate will be applied to the locations given in Figure 10/1, including 200 metres beyond the limits of the bridge as per Annex 7.2/I.

Location	Depot	Carriageway Precautionary Treatment Route applying Potassium Acetate (See Figure 8/4 and 8/5)
M90 Friarton Bridge	Perth	Route 20-7 / 40-10 (dual purpose de-icing vehicle)

Figure 10/1: Potassium Acetate Treatment Locations

Precautionary treatment using potassium acetate will be spread at a rate of 0.01 litres/m2.

Salt for de-icing, including brining salt for use in pre-wetting, will be 6.3mm grading particle size complying with BS 3247 and treated with an anti-caking agent.

For pre-wetting salt, the percentage of salt brine added to salt for spreading Operations will be 30% of the total weight of spread material, and the saturated salt in the brine solution before combination will be

between 20% and 23%. Brine will be produced in purpose built salt saturators sited at Perth, Lochgelly, Dundee, Aberdeen, Stirlinghill, Keith & Inverness depots. These saturators will automatically produce and store brine of the correct concentration and transfer it to saddle tanks located on the spreaders by means of an integrated pump. Daily checking of brine concentration in the saturators will be carried out by Depot Supervisors by means of a refractometer, and records held at the depot. The saturators will be serviced on an annual basis.

Typical analyses from our salt suppliers are shown in Figures 10/2 and 10/3.

Chemical Analysis	BS3247	SSC typical
	Percent	percent
Total Chlorides expressed as NaCl	90.0 minimum	91.0
Insolubles	7.0 maximum	6.5
$CaSO_4$	2.5 maximum	2.5
H_2O	4.0 maximum	

Particle size distribution	BS3247	SSC typical
Mesh size (mm)	% retained	% retained
+6.30	0	0
+5.60		0
+2.36	20 – 70	30
+1.18		0
+0.30	80 minimum	87

Reagent Addition	Typical (ppm)
Anti-caking agent	80ppm

Figure 10/2: Typical Specification for Dry Salt Supplied by Cleveland Potash

Chemical Analysis	BS3247	PS typical
	Percent	percent
Total Chlorides expressed as NaCl	90.0 minimum	98.5
Insolubles	7.0 maximum	0.5
$CaSO_4$	2.5 maximum	1.0
H_2O	4.0 maximum	1.0

Particle size distribution	BS3247	PS typical
Mesh size (mm)	% retained	% retained
+6.30	0	0
+5.60		1
+2.36	20 – 70	35
+1.18		63
+0.30	80 minimum	90

Reagent Addition	Typical (ppm)

Anti-caking agent	30ppm

Figure 10/3: Typical Specification for Brining Salt Supplied by Peacock Salt

12.3 Storage and Testing Methods

BEAR Scotland will undertake environmental risk assessments of all depots to identify measures necessary to ensure that SEPA guidelines and requirements are adhered to. Materials will be stored within a covered structure or within bulk containers and in accordance with current planning and environmental regulations.

As de-icing salt is removed from storage areas, a positive slope will be maintained to avoid danger to operatives and Winter Service Plant from the collapse of stockpile cliff walls. BEAR Scotland will ensure that de-icing material stockpiles are managed and safeguarded effectively and those stockpiles do not become contaminated with foreign matter likely to cause damage to Winter Service Plant and affect other Trunk Road users, by storing all salt on either a concrete or bituminous base.

Salt shall be tested in accordance with Procedure 93 – Winter service salt testing, to ensure that the salt complies with BS 3247.

To ensure that BEAR Scotland does not receive salt which does not comply with BS 3247, all our salt suppliers will be ISO 9001 accredited. In the event that a supplier delivers de-icing salt which is non-compliant, the following procedure will be implemented:

The supplier will be notified as soon as possible
The severity and type of failure will be analysed
If the failure can be rectified (i.e. moisture content) then a solution will be sought with the supplier
If the failure cannot be corrected, arrangements will be made with the supplier to deliver further supplies of de-icing salt and remove the supplies which failed.

Salt stored in depots found, through monthly testing, to be non-compliant with BS 3247, will be quarantined in a separate stockpile and will not be used for treating the Unit.

12.4 Suppliers

BEAR Scotland has developed arrangements with national de-icing material suppliers:

- 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

12.5 Stock Levels

Salt stocks will be continuously monitored and managed. During the winter period, a detailed daily return of salt used will be entered into the BEAR Scotland Control Room Management System by the Duty controllers and salt deliveries will be entered into the system by the Winter Service Manager. During snow conditions a daily report of salt usage will be submitted. This continuous monitoring will ensure salt stocks are replenished timeously. Salt stocks will be surveyed midway through, and at the end of, each season to verify the actual tonnages remaining at each depot, and allow any necessary stock reconciliation to be made.

The procurement of salt will be on a call off basis and triggered by minimum stock levels at each depot. The Winter Service Manager is responsible for the ordering of salt.

During the winter period, salt stock monitoring reports will be made to the Director using the salt reporting system portal at http://winter.atkinsglobal.com/Scotland/ on the first working day of each month.

When requested by the Director, daily or weekly salt monitoring reports will be provided. Also as per ANNEX 7.2/L – Salt Stock Monitoring Report shall be provided.

The minimum cumulative stock levels of de-icing material which will be held throughout the winter season are detailed in Appendix WSP 3.

13.0 STRATEGIC SALT STOCKS

Where ordered by the Director, BEAR Scotland will procure and store strategic salt stocks by:

- an agreed procurement process agreed with the Director.
- strategic salt store area shall be at Errol where 25,000 tonnes can be held
- arranging haulage from delivery point to the strategic salt depots,
- managing and maintaining the stockpile,
- maintaining accurate stock records,
- monitoring stock using an approved weighbridge facility,
- rotating stock to avoid deterioration,
- liaison with third parties to determine requirements for supply of strategic salt,
- arranging loading and haulage of strategic salt to third party depots, and
- invoicing third parties for all costs related to the provision of strategic salt.
- Currently there is 9,000 tonnes of strategic salt held at Errol with a further 5,000 tonnes of vacuum salt at Perth Harbour within the NE unit.

Strategic salt will be stored at Errol.

14.0 WINTER SERVICE PLANT

14.1 Front Line & Reserve Winter Service Plant

Front Line Winter Service Plant and reserve Winter Service Plant will undertake precautionary treatments and snow and ice clearance to the total width of carriageways including slip roads, hard strips, turning lanes, central reserve crossovers, lay-bys, bus bays and the like.

Details of the above are provided in Appendix WSP 4 tables 7.2.J.8 to 10

14.1.1 Additional Winter Service Plant

Additional Winter Service Plant is detailed in Appendix WSP 4 Table 7.2.J.11

14.1.2 Loading Winter Service Plant

Details of loading winter service plant available within the Unit for loading front line, reserve and additional winter Service plant are shown in Appendix WSP 4 Table 7.2.J.12.

14.2 Calibration of Winter Service Plant

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

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

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

Re-calibration and testing shall be carried out after repairs to the spreading equipment and at other times when necessary to ensure the accuracy of de-icing material spreading.
All calibration and re-calibration shall be independently carried out and certified. Calibration certificates shall be held in accordance with the requirements of the Winter Service Plan and the Operating Company's Management System.

14.2.1 Calibration Certification

Calibration of spreaders will be carried out in accordance with the National Winter Service Research Group document ‘Best Practice Guidance for Spreading Salt’.

All calibrations will be carried out in BEAR Scotland depots. The certification for these independent calibrations will be held in the Central Office, in accordance with our documented Quality Management System. Copies of the calibration certificates will be held in the relevant depot for the vehicle. Calibration Certificates will be available for inspection by the Director and the Performance Audit Group at any time.

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

15.0 Compounds Depots and Facilities

A schedule of compounds, depots and facilities covering the network within the North East Unit is included in Appendix WSP 5 Table 7.2.J.13

16.0 Maps Drawings and Graphical Information

There are currently no Present Weather Detectors in the North East Unit

Maps
(i) Precautionary Treatment Routes – all maps detailed in Appendix WSP2

(ii) Treatment routes for footways – included in Appendix WSP 13 below.

(iii) Winter patrol route maps see Appendix WSP10

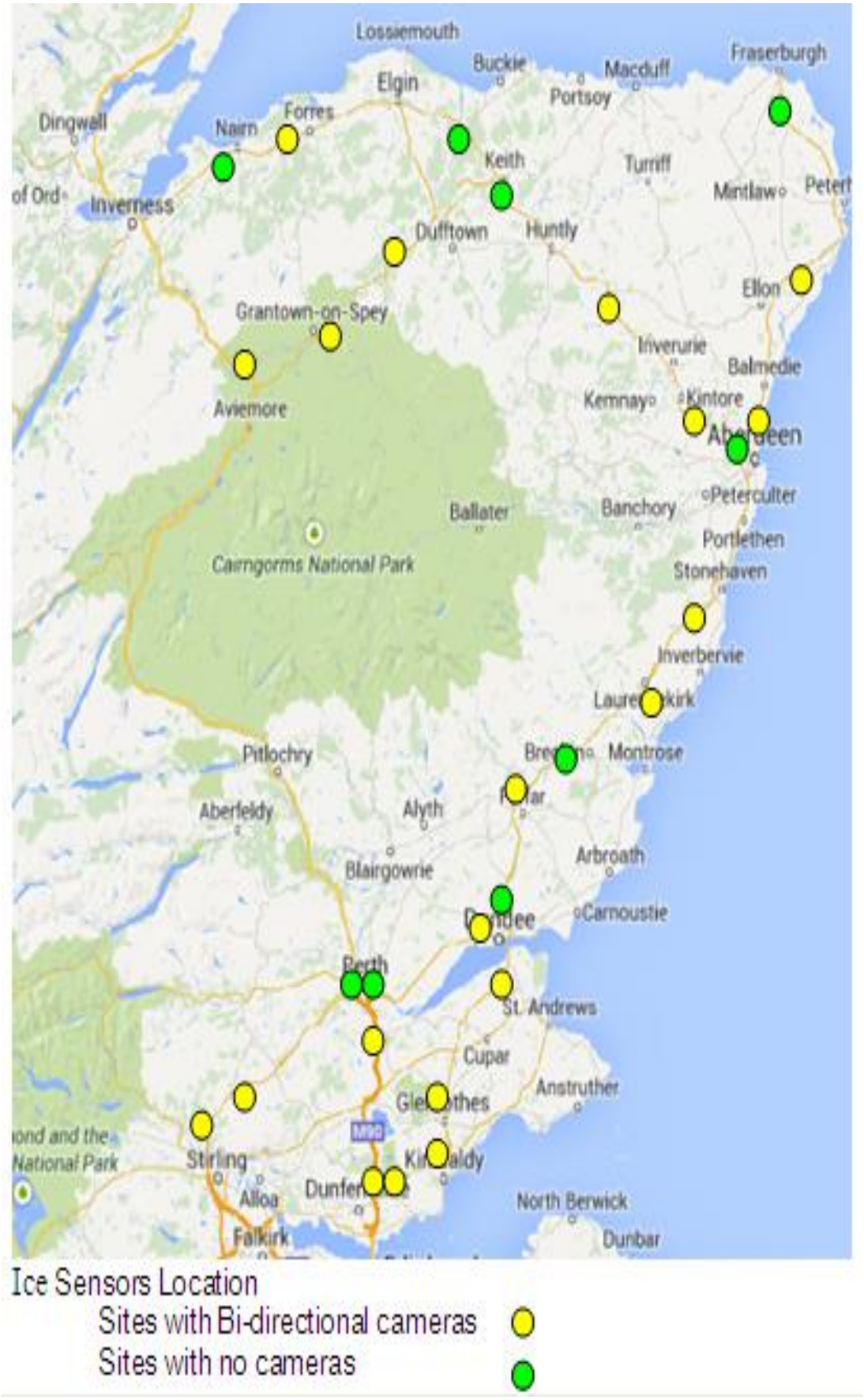
(iv) Ploughing route maps see Appendix WSP2

(v) **Location of Forecast Weather Stations**

ROAD NO.	LOCATION	TYPE
A9	Balhaldie	Vaisala with camera
A9	Inveralmond	Vaisala
A9	**Loaninghead**	Vaisala with camera
A90	Charlestown	Vaisala with camera
A90	Fiddes	Vaisala with camera
A90	**Forfar**	Vaisala with camera
A90	Fraserburgh	Vaisala
A90	**Laurencekirk**	Vaisala with camera
A90	Starr Inn Farm	Vaisala with camera
A90	North Anderson Drive	Vaisala
A90	Bridge of Don	Vaisala with camera
A90	Stracathro	Vaisala
A90	Todhills	Vaisala

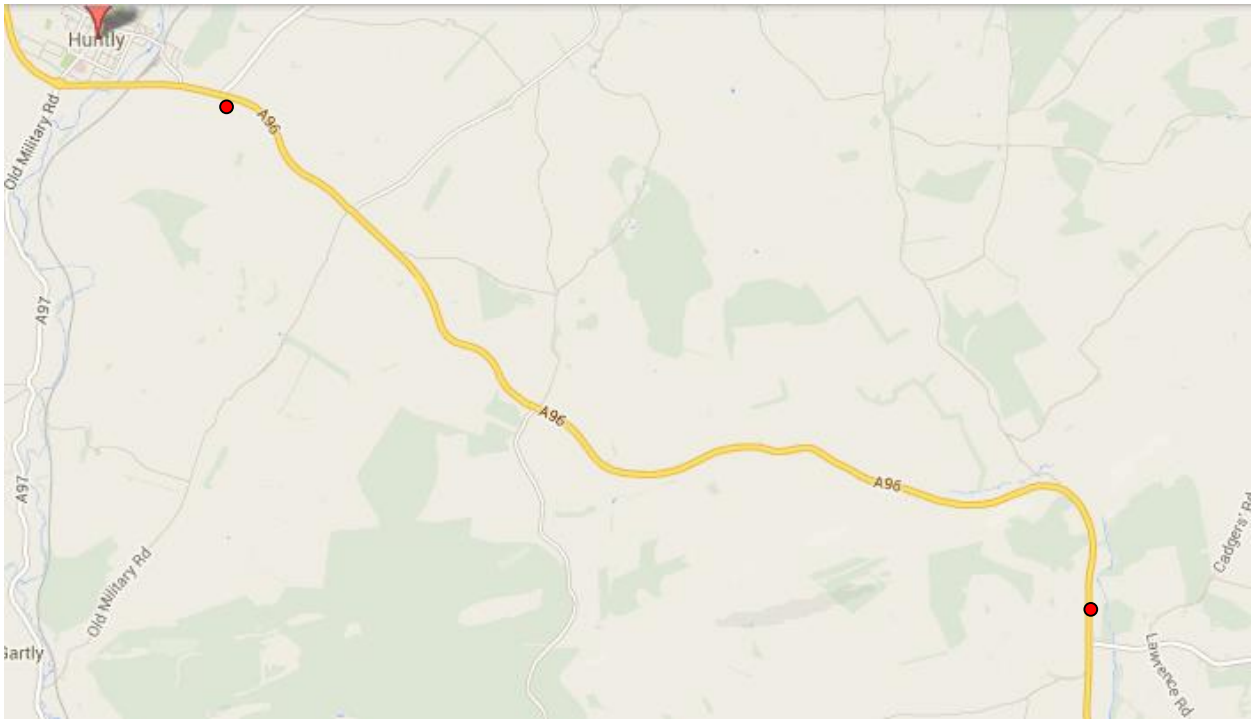
A90	**Toll of Birness**	Vaisala with camera
A92	**New Inn**	Vaisala with camera
A92	Cowdenbeath EFRR 1	Vaisala
A92	Cluny EFRR 2	Vaisala with camera
A92	Sandford	Findlay Irvine with camera
A95	**Ballindalloch**	Vaisala with camera
A95	Grantown	Vaisala with camera
A95	Avielochan (on A9 NW unit)	Vaisala with camera
A96	**Brodie**	Vaisala
A96	Fochabers	Vaisala
A96	**Foudland**	Vaisala with camera
A96	Keith	Vaisala with camera
A96	Delnies	Vaisala with camera
A96	**Tyrebagger**	Vaisala with camera
M90	**Glenfarg**	Vaisala with camera
M90	Kelty	Vaisala with camera
A90	Friarton Bridge	Vaisala

Location Plan showing the ice sensor locations are shown on the next page.



**** NOTE:** Cowdenbeath is indicated on the map but no longer has a camera.

(vi) Location of signs for Virtual snow gates



(vii) There are no snow fences in the North East Unit

(viii) There are no shelter belts in the North East Unit

(ix) Snow Pole Location Map

(x) Locations of Snow and Ice Hidden Message Signs

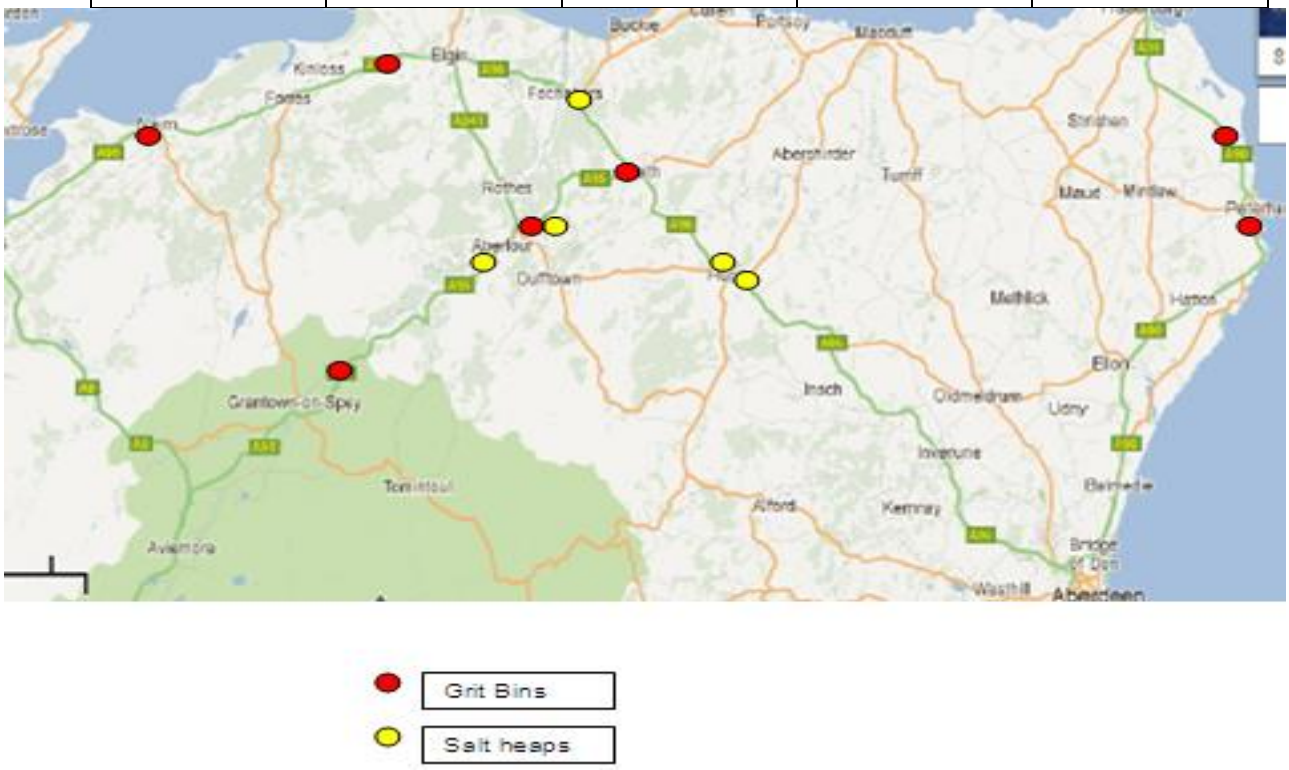
Road Number	Location	Detailed Description
A96	Huntly	Approach to Huntly roundabout southbound
A96		At the A920 junction at Colpy facing traffic turning from the A920
A96		At the A920 junction at Colpy facing northbound
A96		Northbound approach to Oyne Fork Junction
A9	Perth	Approach to Inveralmond Roundabout

Location of Snow & Ice Hidden Message Signs

NOTE: There is a sign on the A9 on the north bound approach to Inveralmond roundabout which refers to the A9 in the North West Unit. This will be controlled by the NW Unit.

(xi) Locations of Salt Bins and Salt Heaps

Road Number	Snow Fence (Meters)	Snow Gates (Number)	Salt Bins (Number)	Salt Heaps (Number)
A90	-	-	5	-
A96	-	-	3	3
A95	-	-	2	2



3 No. additional Grit bins shall be deployed at the footbridges through Dundee, Strathmartine Road, Old Glamis Road & Claverhouse Road.

17.0 COMPILING AND MAINTAINING RECORDS

Records of decisions, amendments to decisions, actions taken and patrol communications will all be maintained on electronic logs in the Winter Maintenance Control Room. It is the responsibility of the Duty Officer to ensure all winter records (electronic and 'hard' copies) are collated and maintained.

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 to the Winter Service Manager for perusal and action where required. In addition, records as detailed in Annex 7.2/G of Part 2 of Schedule 7 will be held in appropriate electronic logs.

Spreaders are weighed at the start and end of each treatment. These weights are phoned through to the winter control room staff. Should usage be 10% below the targeted weight for the precautionary treatment of the route then then a retreatment of the entire route will be undertaken unless the forecast or actual hazard for ice or snow has passed.

The following list identifies typical records required, which will be held electronically:

- Summary forecast and actual weather data
- Decisions taken when and by whom
- Planned and actual treatment records
- Planned and actual response times achieved
- Planned and actual commencement times
- Completion times
- Planned and actual routes times as per Appendix WSP 6 and 7
- Planned and actual spread rates
- Observations and actions taken by Winter Service Patrols as per Appendix WSP 8
- Output from Constructional Plant on-board data capture devices
- Winter Constructional Plant downtime and software faults
- Winter Constructional Plant deployment records (including Global Positioning System records) and driver / operator logs
- Logs for telephone/electronic mail and two-way commnications calls
- Loading point de-icing stocks and replenishment orders
- Ice prediction system records
- Complaints by members of the public and Trunk Road users
- Accidents resulting from weather conditions
- Road closures due to weather conditions
- Weights and (volumes as appropriate) for amount of de-icing material(s) spread for each route
- Amount of de-icing material spread and the cumulative amount spread during the current Winter Service Period
- Plough usage
- Number of treatment days (capability) of de-icing material available for each depot based on six treatments per route per day at 20 grammes per square metre
- Weather forecasts and actual weather experienced
- Pre and mid season road sensor calibration systems
- Actual salt stocks held including strategic salt stocks
- The weather forecast accuracy and
- Any other relevant information
- Winter Service Plant calibration certificates

A shared area shall be set up on the BEAR Scotland central computer server where all appropriate files to which Transport Scotland and Performance Audit Group require access will be stored. These files shall be updated on a regular basis to ensure that the data stored is as up to date as possible. The

remote access for all files stored on the shared area shall be read only access to ensure the integrity of files.

Transport Scotland and PAG shall have full access to the Vaisala Icelert system which includes all ice sensor data such as road surface temperature, road surface state etc.

Duty officers shall receive further training on the importance of timely & accurate record keeping to ensure that all records are kept updated as close to each weather event as possible.

All telephone calls to and from the control room shall be recorded & shall be stored on the BEAR Scotland computer system which can be readily accessed on request via the internet.

The daily winter action plan shall be uploaded to the Traffic Scotland website daily by 15:00 hours.

18.0 SNOW POLES

Snow poles will be inspected by inspectors both on safety inspections and detailed inspections in accordance with Part 1 of Schedule 7. Defects will be categorised as Cat 1 or 2 Defects as appropriate, and repairs programmed to ensure compliance with such priorities.
Replacement of damaged or missing snow poles will be carried out in accordance with the time scales set down for Cat 1 and 2 Defects in Part 1 of Schedule 7.
Where a detailed inspection has identified a refurbishment programme of snow poles is required, a bid with costs will be submitted to the Director for approval. Once approval is given, works will be programmed as soon as possible after approval is received.
Due to location and numbers of snow poles in the North East Unit, a small reserve stock with a minimum of 25 snow poles shall be held at the Keith Depot.

Locations of Snow Poles

Route A95					
Link	**Section**	**Start Location**	**End Location**	**No.**	**Link**
10935	05	Junction A970 Achnagonalin	Brig a Brown Junction	12	10935
10935	05	Junction A970 Achnagonalin	Brig a Brown Junction	12	10935
10940	05	Brig a Brown Junction	Balmenach Junction	36	10940
10940	05	Brig a Brown Junction	Balmenach Junction	49	10940
10945	45	Tormore	Moray Boundary	7	10945
10950	05	Moray Boundary	Cragganmore	29	10950
10950	20	Marypark	Carron Junction	78	10950
10950	20	Marypark	Carron Junction	100	10950
10960	30	Rosarie	Haughs Junction	40	10960
10960	30	Rosarie	Haughs Junction	37	10960

Route A96					
Link	**Section**	**Start Location**	**End Location**	**No.**	**Link**
17640	00	A920 jcn	Ythanwells	16	17640
17640	00	A920 jcn	Ythanwells	8	17640
17640	14	Ythanwells	Clinkstone	8	17640
17640	42	Whinbrae Climbing lane		6	17640
17640	58	End of climbing lane	end of Newtongarry	19	17640
17640	58	End of climbing lane	end of Newtongarry	23	17640
17675	20	Buckie junction	Mulben junction	19	17675
17675	20	Buckie junction	Mulben junction	18	17675
17675	70	Dramlachs climbing lane		27	17675
12640	95	Brodie climbing lane		12	12640

19.0 SNOW GATES

There are currently no physical snow gates in the North East Unit but there are virtual snow gates on the A96 at the Glens of Foudland.

Signs have been erected on the A96 just north of A920 nr Kirkton of Culsalmond and east of the A96 near Huntly. These signs are being trialled as a concept entitled 'virtual gates'. The purpose of the signs is to allow rapid notification of a closure of the A96 between the gates. The point of closure is most likely to be at Glens of Foudland which is prone to closure during heavy snowfall.

The early notification will allow vehicles approaching the closed area the opportunity to turnaround and use an alternative route, or alternatively wait at a safer location until the road reopens. Where time permits a physical closure will be implemented to reinforce the warning.

Ongoing monitoring of the virtual gates shall be continued throughout the season to assess their effectiveness with de-briefings carried out following any implementation of the gates with both the Police Scotland & local authorities to identify any issues

The following procedure shall be used when the Virtual Gates are required to be closed:-

Implementation Procedure

BEAR Scotland notify Police Scotland and Local authorities of need to close A96 due to snow (or stranded vehicle)
Police Scotland instruct the road to be closed.
BEAR activate virtual gate signs.

Using BEAR NE emergency phone send following text message to phone number [redacted] for Kirkton of Culsalmond sign & [redacted] for Huntly sign

Message 1 'SignonA83WW'

BEAR notify Traffic Scotland of closure.
BEAR deploy staff to implement physical closure in advance of gates.
Traffic Scotland instigates VMS signing notifying of closure.
Traffic Scotland create incident, web story etc

Removal Procedure
BEAR Scotland and Police Scotland agree the road is fit to reopen.
BEAR Scotland remove physical closure (if there was time to deploy)
BEAR Scotland notifies Police Scotland that the physical closure has been lifted.
BEAR Scotland deactivate virtual gates

Using BEAR NE emergency phone send following text message to phone number 07881354780 for Kirkton of Culsalmond sign & 07881354781 for Huntly sign

Message 2 'SignoffA83WW'

BEAR Scotland notifies Traffic Scotland that the road has reopened.
Traffic Scotland advise A96 reopened on VMS, web etc.

20.0 VARIABLE MESSAGE SNOW AND ICE AND HIDDEN MESSAGE SIGNS

20.1 Operating and liaison Procedures

Details of the locations of variable message snow and ice and hidden message signs are contained in Section 15 Maps Drawings and Graphical Information Section 15 (x). These signs shall be maintained in accordance with the requirements of Schedule 7 Part 1.

These signs shall be inspected prior to the commencement of each winter season to ensure their suitability for use throughout the Winter Service period.

The Duty Officer/ Supervisor will liaise with Police Scotland to co-ordinate the activation of such signs when closing roads.

21.0 SALT BINS AND SELF HELP SALT HEAPS

21.1 Stock level monitoring and replenishment procedures

Salt bins and heaps as detailed in Section 15 (xi) shall be checked on a weekly basis by inspectors. Where salt levels are identified of being low, inspectors shall inform the Winter Service Duty Officer, who will arrange for stock to be replenished as soon as possible.

Salt bins shall be placed on the network before 30 September ahead of each winter season. Where salt bins are damaged or vandalised they shall be replaced within 48 hours of this being identified.

22.0 SALT MEASUREMENT APPARATUS

22.1 Details of equipment and locations and recording methods

At our depots in Perth, Dundee, Lochgelly, Inverness, Stirlinghill, Tullos, and Keith weighbridges are installed in order to accurately record the quantities of salt being used.

These facilities will provide weighbridge tickets which will be held as a winter record; the facilities proposed will also be calibrated strictly in accordance with manufacturer's instructions.

BEAR Scotland shall provide the minimum operational salt stock levels at the start of the Winter Service Period as detailed in Appendix WSP3 to table 7.2/J/7 of this WSP. If stocks have reduced to 90 percent on 21 December in any Winter Service Period, the Operating Company shall restock to 100 percent of the full pre-season stocks.

Each depot will have brine storage tanks capable of holding sufficient brine that would allow treatment of all routes simultaneously from that depot at maximum spread rates plus an additional 20 per cent above the minimum to be held in reserve. See Table 7.2/J/7 – Brine Production and Storage.

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

In Appendix WSP 12 there is a detailed list of Areas Requiring Special Attention

Table 7.2/F.1 Frost Susceptible Areas

Road Number	Location
A90	Bridge at Tipperty
A96	Near Fochabers
A96	Roundabout near A9
A96	Inverurie Bypass
A96	Glens of Foudland
A96	North of Huntly near Westerton
A95	Bridge of Avon
A90	Near Candy farm
A90	Near Gateside Interchange
A90	Temple of Fiddes
A9	Blackford
A9	Balhaldie
A92	Sandford
M90	Friarton Bridge

Table 7.2.F.2 Water Run Off Locations

Road Number	Location
A95	Kinnermony, near Aberlour
A90	Brechin Bypass
A95	Dalvey bridge – Tormore
A95	Tom un Uird to Cromdale
A95	Gaich to Craggen
A95	Drumullie to Kinveachy
A95	South of Advie
A96	Skares – Bainshole
A96	Carnie Junction – Coachford
A96	Portsoy Junction to Banff Junction

Note:

Water runoff locations will be recorded as Disruption Risk Sites through the Disruption Risk Management Plan and a risk assessment will be carried out using the standard approach to be supplied by Transport Scotland to determine whether the risk of disruption is “high” or “very high”

Table 7.2.F.3 Steep Inclines

Road Number	Location
M90	Balmanno Hill
M90	Perth Southern Bypass
A9	Cairnie Braes
A90	Powrie Brae
A90	Stonehaven
A96	Dramlachs climbing lane
A96	Regent St Church Road Keith
A96	Binforest climbing lane
A96	Ashgrove climbing lane
A96	Cairnie Brae
A96	Newtongarry climbing lane
A96	Tyrebagger
A95	Poppin Brae
A95	Craigellachie Poppin Brae
A95	Ballindalloch

Appendix WSP 1

Winter Patrol Routes

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

Type and Registration No	Depot Location	Specification including Capacity	Quantity
SJ65 FVR	Lochgelly	6m³ pre-wet spreader	1
SJ65 FVT/SJ65 FVZ	Perth	6m³ pre-wet spreader	2
SJ65 FVS/SJ65 FVY/SJ65 FVU	Dundee	9/6m³ pre-wet spreader	3
SJ65 FWA/SJ65 FVV	Stirlinghill	6m³ pre-wet spreader	2
SJ65 FVX/SJ65 FVW	Inverness	6m³ pre-wet spreader	2

Table 7.2/J/2 – Winter Service Patrol Routes

Category (A/B)	Route	Depot	Route Description	Depot to Route (km)	Time to Route (mins)	Patrol Length (km)	Avg Speed (km/hr)	Route Time (mins)	Route to Depot (km)
A	A1	Lochgelly	M90 Halbeath – Craigend; M90 Craigend - Halbeath	10	10	76	76	60.0	10
A	A2	Perth	A9 Cairnie Braes – Keir R/a; A9 Keir R/a -A9 Cairnie Braes	10	10	70	70	60.0	10
A	A3	Perth	A9 Cairnie Braes – Inveralmond – Broxden, M90 Broxden – Barnhill, A90 Barnhill - Inchmichael; A90 Inchmichael – Barnhill; M90 Barnhill – Broxden, A9 Broxden – Inveralmond – Cairnie Braes.	10	10	68	68	60.0	10
A	A4	Dundee	A90 Lochlands – Inchmichael; A90 Inchmichael – Lochlands	23	25	68	68	60.0	25
A	A5	Dundee	A90 Lochlands – Drumnagair; A90 Drumnagair – Lochlands	23	25	72	72	60.0	23
A	A6	Dundee	A90 Drumnagair – Newtonhill; A90 Newtonhill – Drumnagair.	10	10	72	72	60.0	10
A	A7	Stirlinghill	A96 Clinterty R/a – A90 Haudagain – A90 Newtonhill; A90 Newtonhill - A96 Haudagain – A96 Clinterty R/a	6	6	57	57	60.0	6
B	B1	Stirlinghil	A96 Keith - Clinterty R/a; A96 Clinterty R/a – Keith	5	5	72	60	72.0	5
B	B2	Inverness	A95 Keith – Granish; A95 Granish – Keith	5	5	76	60	76.0	5
B	B3	Inverness	A96 Inverness – Keith; A96 Keith – Inverness	5	10	85	60	85.0	5

Appendix WSP 2

Precautionary Treatment Routes determined by the Operating Company
Summary Table 7.2/I/4

Table 7.2/J/4 - Precautionary Treatment Routes determined by the Operating Company (Route Tonnages have been derived theoretically)

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	Average Width of Route	Route Tonnage @20g/m2	Treatment type
20R01	Stirlinghill	A90 Ellon to Fraserburgh	0.5	1	32	53	114	24	Tullos	7	7.57	Pre-wet
20R02	Inverness	A96 Fochabers to Inverness	2	3	76	48	104.5	76	Keith	6.8	10.34	Pre-wet
20R03	Keith	A96 Fochabers to Inverurie	14	16	78	49	105	43	Tullos	6.8	9.15	Pre-wet
20R04	Keith	A95 Keith to Aviemore	6.8	14	87	40	116	84	Inverness	6	8.95	Pre-wet
20R05	Tullos	A96 Inverurie to Aberdeen & Newburgh	0.5	1	64	41	93	0.5	Keith	7	9.52	Pre-wet
20R6	Tullos	A90 Aberdeen to Glasslaw	5	10	59	54	112.7	3	Dundee	7	8.3	Pre-wet
20R07	Dundee	A90 Brechin to Glasslaw	3	4	65	54	105	13.5	Dundee	7	9.10	Pre-wet
20R08	Dundee	A90 Muiryfaulds to Stracathro	11	13	79	54	115	21	Dundee	7	11.06	Pre-wet

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	Average Width of Route	Route Tonnage @20g/m2	Treatment type
20R09	Perth	A90 Inchmichael to Muiryfaulds and Dundee trunk roads	10	13	59	54	114	24	Perth	7	8.26	Pre-wet
20R10	Perth	A9 Perth Inveralmond to Loaninghead	0.5	1	62	54	99	2	Lochgelly	7	8.68	Pre-wet
20R11	Perth	A9 Loaninghead to M9/A9 Keir (near Dunblane)	25	21	58	56	102	45	Lochgelly	7	8.12	Pre-wet
20R12	Lochgelly	M90 Craigend (Perth) to Kinross	6	12	80.2	58	93	7	Perth	7.83	12.55	Pre-wet
20R13	Lochgelly	A90 Inchture to Perth	7	14	67.7	62	116	2.2	Lochgelly	7.56	10.23	Pre-wet
20R14	Lochgelly	A92 Lochgelly to Tay Bridge	10	13.5	75	52	115	58	Dundee	7	10.50	Pre-wet

Table 7.2/J/5 - Precautionary Treatment Routes determined by the Operating Company (Route Tonnages have been derived theoretically)

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	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R01	Stirlinghill	A90 Fraserburgh - Ellon Dual	0.5	1	53	48	107.0	20	Tullos	6.50	13.80	Pre-wet
40R02	Tullos	A90 Rubislaw Roundabout - A90 Ellon Dual	10	12	44	48	78.0	25	Stirlinghill	7.00	12.3	Pre-wet
40R03	Tullos	A96 Blackhall Roundabout - A96 Auchmill Road	10	10	41	48	53.0	15	Stirlinghill	7.00	11.48	Pre-wet
40R04	Keith	A96/A95 Jcn - A96 Blackhall R/B Inverurie	5	5	50	48	64.0	51	Tullos	6.50	13.0	Pre-wet
40R05	Keith	A95 Aberlour - A96 Elgin Dr Grays R/B	24	24	47	48	59.4	27	Inverness	6.50	12.2	Pre-wet
40R06	Keith	A95 Aberlour - A95 Granish	24	24	52	48	66.0	75	Inverness	6.00	12.48	Pre-wet

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	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R07	Inverness	A96 Inverness - A96 Elgin Dr Grays R/B	3	3	58	48	73.0	60	Keith	6.50	15.08	Pre-wet
40R08	Stirlinghill	A90 Rubislaw R/B Aberdeen - A90 Stonehaven Glasslaw	10	12	49	64	87.0	32	Tullos	7.00	13.72	Pre-wet
40R09	Dundee	A90 B974 Jcn - A90 Stonehaven Glasslaw	8	8	48	64	52.0	38	Tullos	7.00	13.44	Pre-wet
40R10	Dundee	A90 Parkford Jcn - A90 B974 Jcn	35	35	51	64	85.0	38	Tullos	7.00	14.2	Pre-wet
40R11	Dundee	A90 Fintry Dr R/B - A90 Parkford Jcn	9	10	52	64	81.0	9	Tullos	7.00	14.56	Pre-wet
40R12	Dundee	A90 Fintry Drive R/B - Kingsway – Inchmichael	9	10	47	64	57.0	12	Perth	7.00	13.1	Pre-wet

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	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R13	Perth	A90 Inchture – Perth	10	10	49	64	113.0	12	Dundee	7.00	13.7	Pre-wet
40R14	Lochgelly	A92 Redhouse - A92 Tay Bridge	12	12	48	55	69.0	52	Dundee	7.00	13.44	Pre-wet
40R15	Perth	A9 Loaninghead to Keir R/B	25	25	47	64	81.0	25	Lochgelly	7.00	13.16	Pre-wet
40R16	Perth	A9 Loaninghead to Inveralmond	1	1	48	60	60.0	1	Lochgelly	7.00	13.44	Pre-wet
40R17	Perth	Broxden to Milnathort	5	5	40	64	72.0	28	Lochgelly	9	14.4	Pre-wet
40R18	Lochgelly	Halbeath – Milnathort	8	8	45	64	79.0	12	Perth	7.85	14.13	Pre-wet
40R19	Lochgelly	Halbeath - Redhouse	5	5	42	60	42.5	69	Perth	7.00	11.76	Pre-wet
40R20	Perth	Friarton - Milnathort	10	10	22	64	32.8	28	Lochgelly	9.50	8.4	Pre-wet

Table 7.2.J.6 - Ploughing Routes determined by the Operating Company

The following ploughing routes are based on the 40 g/m² precautionary treatment routes. The vehicles on the motorway and dual carriageway network will work in tandem on the main carriageway and slips to carry out echelon ploughing. The reserve vehicles will be deployed to assist as necessary.

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	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R01	Stirlinghill	A90 Fraserburgh - Ellon Dual	0.5	1	53	48	107.0	20	Tullos	6.50	13.80	Pre-wet
40R02	Tullos	A90 Rubislaw Roundabout - A90 Ellon Dual	10	12	44	48	78.0	25	Stirlinghill	7.00	12.3	Pre-wet
40R03	Tullos	A96 Blackhall Roundabout - A96 Auchmill Road	10	10	41	48	53.0	15	Stirlinghill	7.00	11.48	Pre-wet
40R04	Keith	A96/A95 Jcn - A96 Blackhall R/B Inverurie	5	5	50	48	64.0	51	Tullos	6.50	13.0	Pre-wet
40R05	Keith	A95 Aberlour - A96 Elgin Dr Grays R/B	24	24	47	48	59.4	27	Inverness	6.50	12.2	Pre-wet
40R06	Keith	A95 Aberlour - A95 Granish	24	24	52	48	66.0	75	Inverness	6.00	12.48	Pre-wet

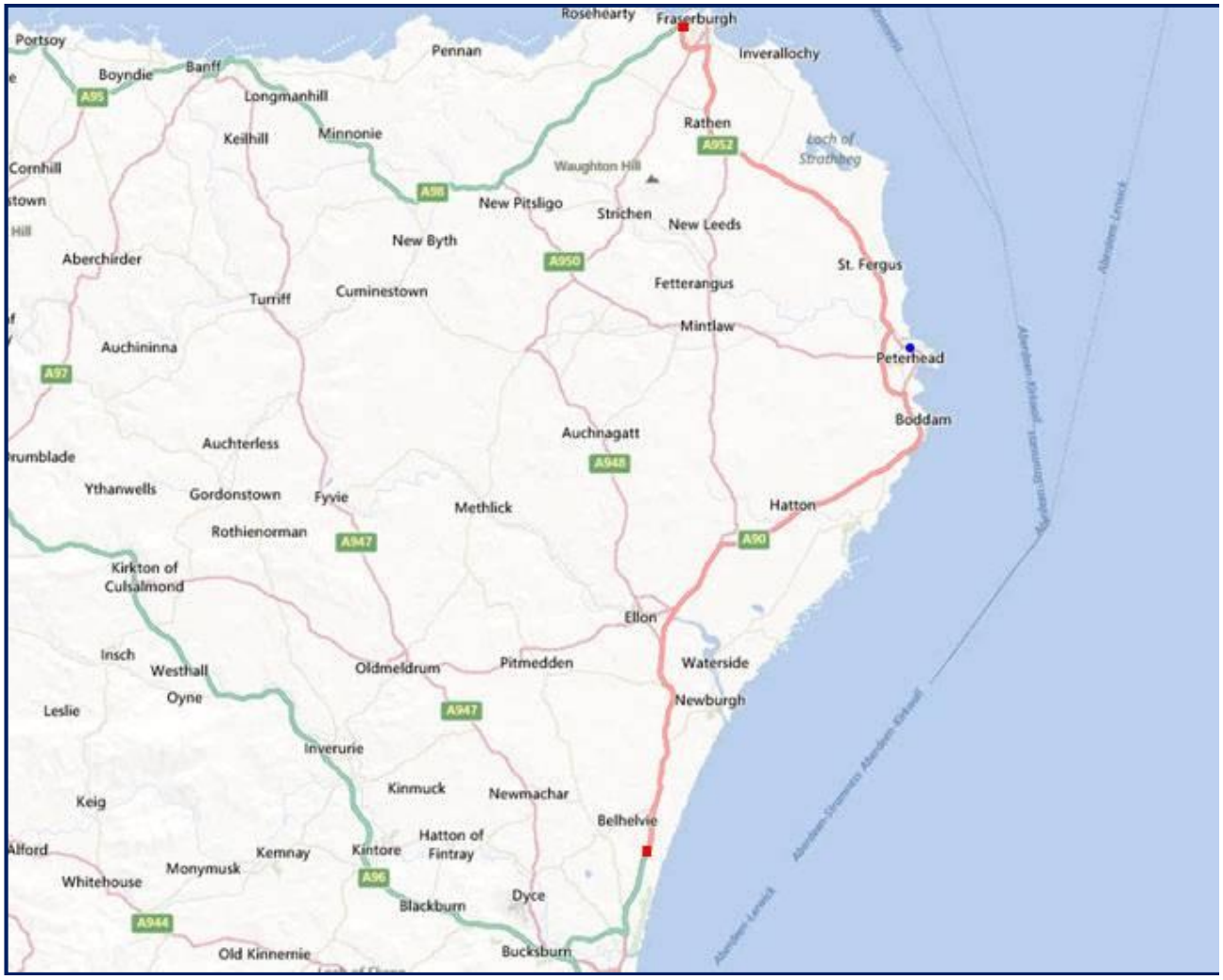
Route No.	Depot	Description	Depot to Route (km)	Time to Route (mins)	Salting Length (km)	Aver Speed (km/hr)	Route Time (mins)	Route to Depot (km)	Alternative Access	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R07	Inverness	A96 Inverness - A96 Elgin Dr Grays R/B	3	3	58	48	73.0	60	Keith	6.50	15.08	Pre-wet
40R08	Stirlinghill	A90 Rubislaw R/B Aberdeen - A90 Stonehaven Glasslaw	10	12	49	64	87.0	32	Tullos	7.00	13.72	Pre-wet
40R09	Dundee	A90 B974 Jcn - A90 Stonehaven Glasslaw	8	8	48	64	52.0	38	Tullos	7.00	13.44	Pre-wet
40R10	Dundee	A90 Parkford Jcn - A90 B974 Jcn	35	35	51	64	85.0	38	Tullos	7.00	14.2	Pre-wet
40R11	Dundee	A90 Fintry Dr R/B - A90 Parkford Jcn	9	10	52	64	81.0	9	Tullos	7.00	14.56	Pre-wet
40R12	Dundee	A90 Fintry Drive R/B - Kingsway – Inchmichael	9	10	47	64	57.0	12	Perth	7.00	13.1	Pre-wet

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	Average Width of Route	Route Tonnage @40g/m2	Treatment type
40R13	Perth	A90 Inchture - Perth	10	10	49	64	113.0	12	Dundee	7.00	13.7	Pre-wet
40R14	Lochgelly	A92 Redhouse - A92 Tay Bridge	12	12	48	55	69.0	52	Dundee	7.00	13.44	Pre-wet
40R15	Perth	A9 Loaninghead to Keir R/B	25	25	47	64	81.0	25	Lochgelly	7.00	13.16	Pre-wet
40R16	Perth	A9 Loaninghead to Inveralmond	1	1	48	60	60.0	1	Lochgelly	7.00	13.44	Pre-wet
40R17	Perth	Broxden to Milnathort	5	5	40	64	72.0	28	Lochgelly	9	14.4	Pre-wet
40R18	Lochgelly	Halbeath - Milnathort	8	8	45	64	79.0	12	Perth	7	12.6	Pre-wet
40R19	Lochgelly	Halbeath - Redhouse	5	5	42	60	42.5	69	Perth	7.00	11.76	Pre-wet
40R20	Perth	Friarton - Milnathort	10	10	22	64	32.8	28	Lochgelly	9.50	8.4	Pre-wet

Provision of Maps, Drawings and Associated Information for Treatment Routes and Patrol Routes

The route cards, summary details and maps for the 20 g/m² and 40 g/m² routes and winter service patrols are as follows:

Depot:	Stirlinghill	**Route:**	NE20R1
Spread Rate:	20g/m²	**Route Length:**	84.6 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	52.6 km
Depot to Route:	0.5 km	**Route Time:**	114 mins
Depot to Route:	1 min	**Route Coverage:**	7.57 tonnes
Route to Depot:	20.0 km	**Route Average Width:**	7 m
Route to Depot:	20.0 mins	**Route Average Speed:**	53 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

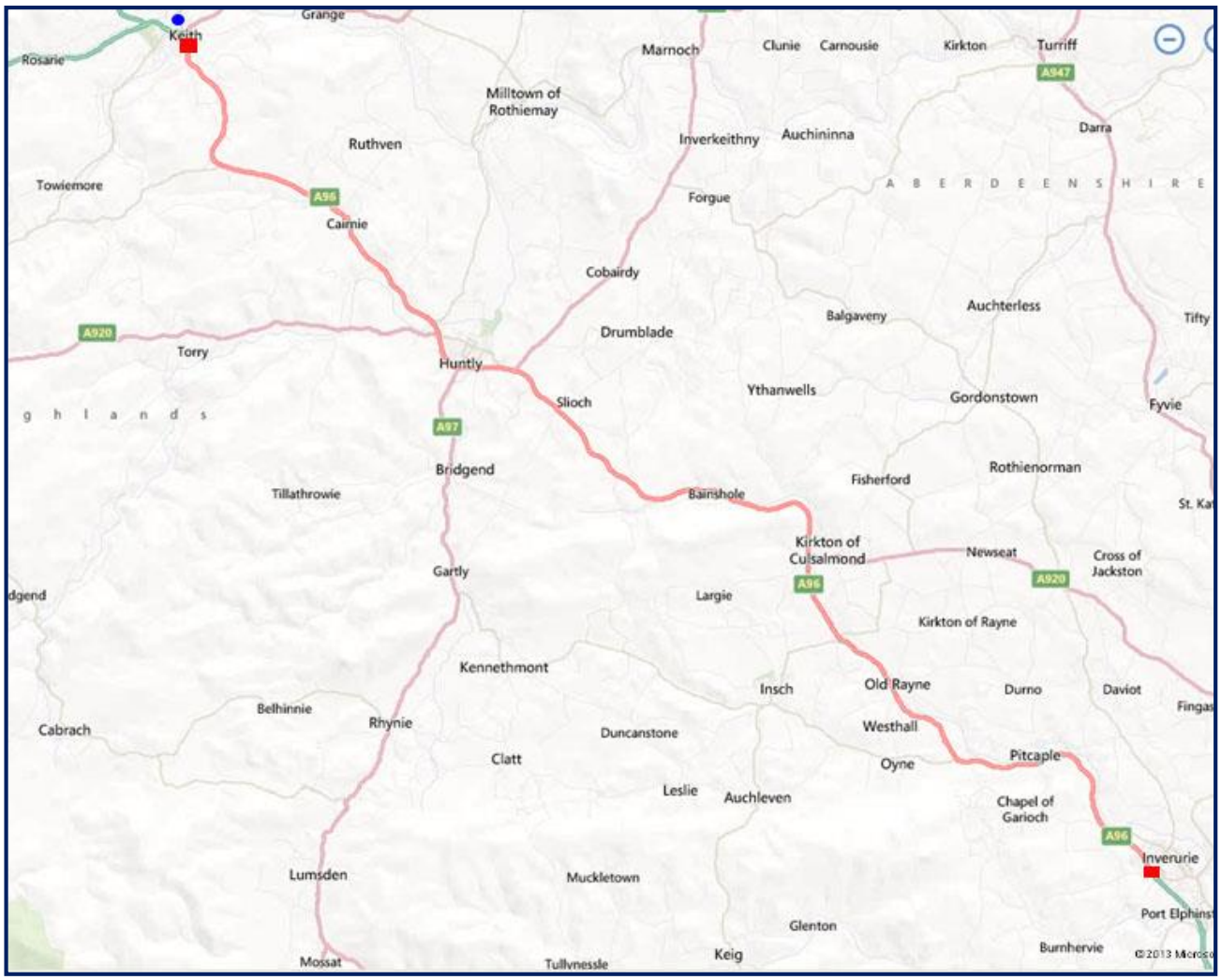
Operation	Route	From	To	Distance (km)
SALT	A90 (northbound)	A90 Jcn with Stirlinghill quarry	A98 Junction Fraserburgh (including r'abouts & deceleration lanes at Peterhead Power Station)	32
TF	A90 (southbound)	A98 Junction Fraserburgh	A90 Jcn with Stirlinghill quarry	32
SALT	A90 (southbound)	A90 Jcn with Stirlinghill quarry	B9005 Roundabout at Ellon Dual	20.6
			Totals	**84.6**

Depot:	Inverness	**Route:**	NE20R2
Spread Rate:	20g/m²	**Route Length:**	77.6 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	76 km
Depot to Route:	2 km	**Route Time:**	104 mins
Depot to Route:	3 min	**Route Coverage:**	10.34 tonnes
Route to Depot:	76.0 km	**Route Average Width:**	6.8 m
Route to Depot:	76.0 mins	**Route Average Speed:**	48 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Keith depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	From	To	Distance (km)
SALT	A96 (eastbound)	A96 Raigmore Interchange	A96 Smithton/Culloden Jcn	2
TF	A96 (westbound)	A96 Smithton/Culloden Jcn	A96 Dual section prior to Roundabout at Raigmore retail park	0.6
SALT	A96 (westbound)	A96 Dual section prior to Roundabout at Raigmore retail park	Raigmore Interchange (including roundabouts)	1
TF	A96 (eastbound)	A96 Raigmore Interchange	A96 Smithton/Culloden Jcn	2
SALT	A96 (eastbound)	A96 Smithton/Culloden Jcn	A96 Nairn Roundabout	20
SALT	A96 (eastbound)	A96 Nairn Roundabout	A96 Elgin West Roundabout (include all roundabouts)	35.5
SALT	A96 (eastbound)	A96 Elgin West Roundabout	A96 Elgin East roundabout (include all roundabouts	3.5
SALT	A96 (eastbound)	A96 Elgin East roundabout	A96 Fochabers A98 Jcn	13
			Totals	**77.6**

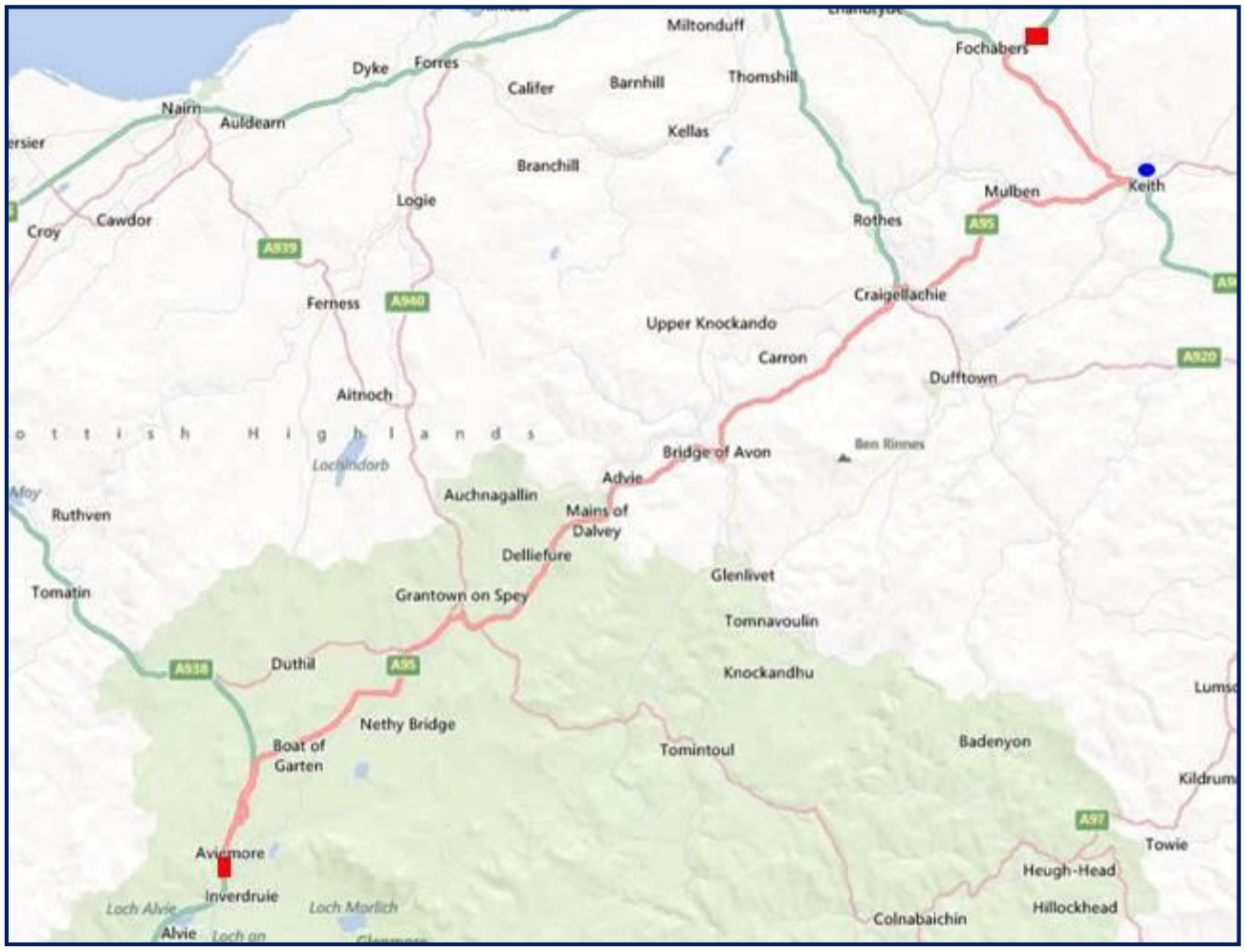
Depot:	Keith	**Route:**	NE20R3
Spread Rate:	20g/m²	**Route Length:**	99 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	65 km
Depot to Route:	5 km	**Route Time:**	86 mins
Depot to Route:	5 min	**Route Coverage:**	9.15 tonnes
Route to Depot:	43.0 km	**Route Average Width:**	6.8 m
Route to Depot:	43.0 mins	**Route Average Speed:**	45 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	From	To	Distance (km)
TF	A96 (westbound)	Keith Depot	A96 Fochabers A98 Jcn	15
SALT	A96 (eastbound)	A96 Fochabers A98 Jcn	A96 Port Elphinstone R/about	65.5
			Totals	**80.5**

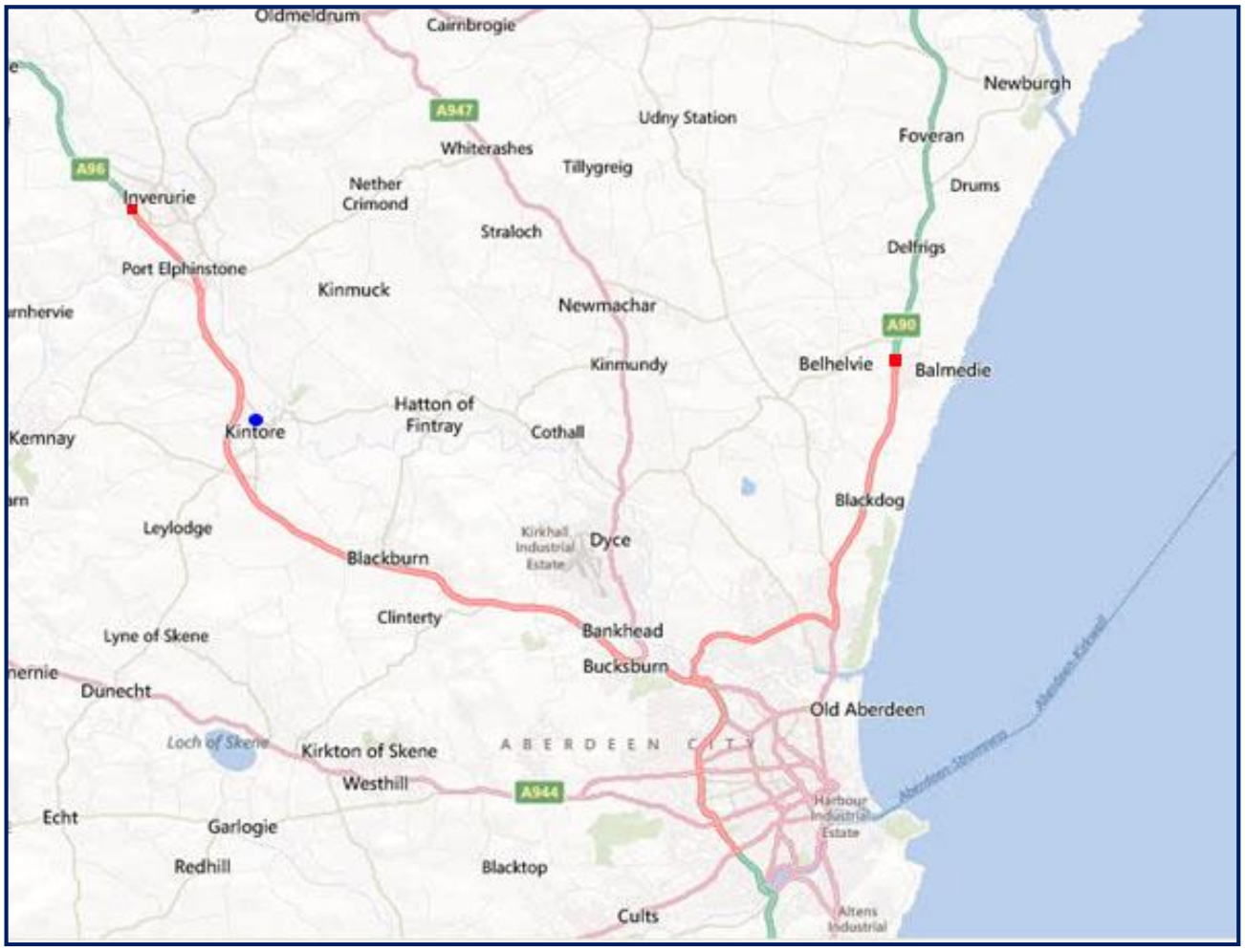
Depot:	Keith	**Route:**	NE20R4
Spread Rate:	20g/m²	**Route Length:**	74 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	74 km
Depot to Route:	3 km	**Route Time:**	98 mins
Depot to Route:	5 min	**Route Coverage:**	8.95 tonnes
Route to Depot:	80.0 km	**Route Average Width:**	6 m
Route to Depot:	84.0 mins	**Route Average Speed:**	45 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Inverness depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	From	To	Distance (km)
SALT	A95 (w/bound)	A96 / A95 Keith Jcn (including junction)	A9 Granish Junction, Aviemore (incl. A95/ B9006 Tomintoul jcn & roundabouts at junctions with A939 and B9102 Grantown-on-Spey) (North West Unit to treat A9/A95 Granish Jcn)	74
			Totals	**77**

Depot:	Tullos	**Route:**	NE20R5
Spread Rate:	20g/m²	**Route Length:**	69.6 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	64.6 km
Depot to Route:	5 km	**Route Time:**	101 mins
Depot to Route:	10 min	**Route Coverage:**	9.52 tonnes
Route to Depot:	5 km	**Route Average Width:**	7 m
Route to Depot:	10 mins	**Route Average Speed:**	41 km/h



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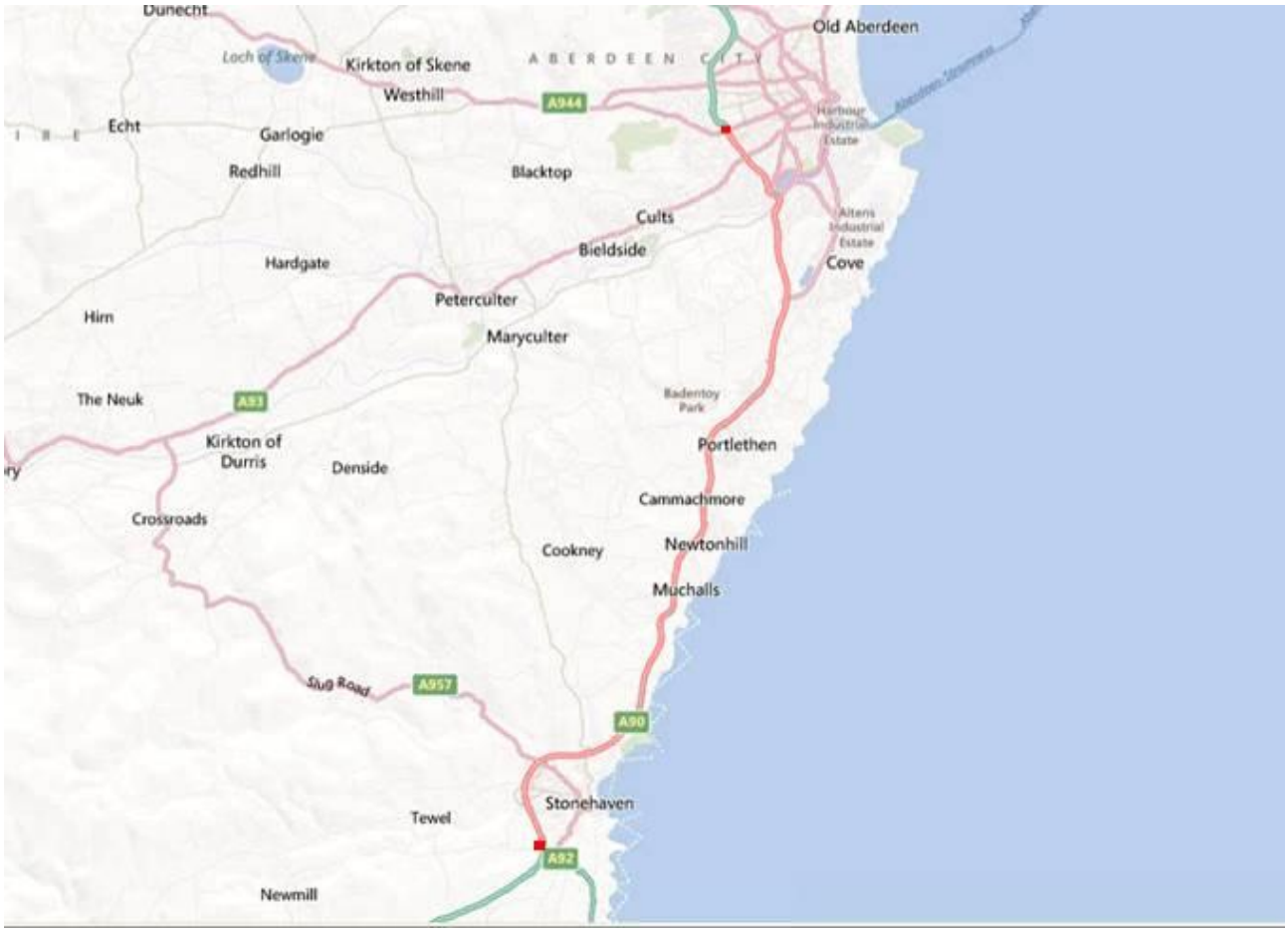
Operation	Route	From	To	Distance (km)
SALT	A90 (northbound)	A90 Bridge of Dee R/B	A96 Haudagain R/B	7
SALT	A96 (westbound)	A96 Haudagain R/B	A96 Bucksburn Roundabout	4
SALT	A90 (westbound)	A96 Bucksburn R/B	A96 Port Elphinstone R/about	19
SALT	A90 (eastbound)	A96 Port Elphinstone R/about	A96 Haudagain R/B (include all roundabouts)	19
SALT	A90 (northbound)	A96 Haudagain R/B	B999 Roundabout	7.0
SALT	A90 (southbound)	B999 Roundabout	A90 exhibition centre Roundabout	1.6
TF	A96 (southbound)	A90 Bridge of Don R/about	A96 Haudagain R/B	5
SALT	A90 (southbound)	A96 Haudagain R/about	A90 Bridge of Dee R/B	7
			Totals	**69.6**

Depot:	Tullos	**Route:**	NE20R6
Spread Rate:	20g/m²	**Route Length:**	95.3 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	55.2 km
Depot to Route:	5 km	**Route Time:**	105 mins
Depot to Route:	10 min	**Route Coverage:**	8.3 tonnes
Route to Depot:	3 km	**Route Average Width:**	7 m
Route to Depot:	5 mins	**Route Average Speed:**	54 km/h



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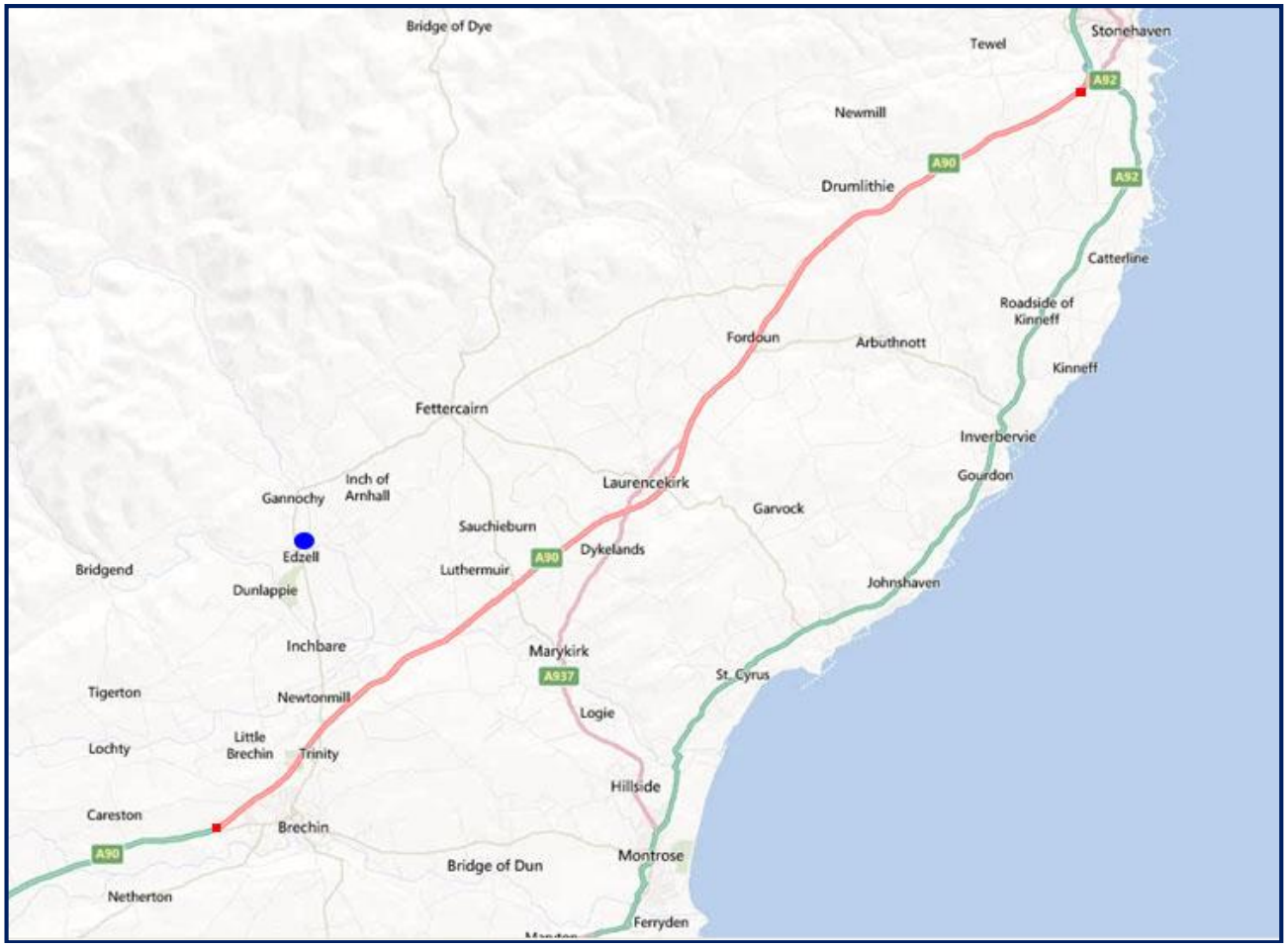
Operation	Route	Direction	Route Description	Distance (km)
SALT	A90 (southbound)	Bridge of Dee R/B	A90 end Charlestown southbound off slip (incl all roundabouts)	4.6
TF	A956 (E/bound)	A90 end Charlestown S/bound off slip	Turn at Cove Jcn	0.45
TF	A956 (W/bound)	Cove Jcn	Start Charlestown N/bound on slip	0.9
SALT	A90 (N/bound)	Start Charlestown N/bound on slip	Bridge of Dee R/B	4.6
TF	A90 (S/bound)	Bridge of Dee R/B	Charlestown Southbound off slip	4.6
SALT	A90 (S/bound)	Charlestown Southbound off slip	End of S/bound off slip at Glasslaw Interchange (include increased width at Stonehaven north access)	20
TF	Glasslaw Interchange	End of S/bound off slip at Glasslaw Interchange	Start of S/bound on slip at Glasslaw	0.1
SALT	A90 (S/bound)	Start of S/bound on slip at Glasslaw	End of S/bound on slip at Glasslaw	0.3
SALT	A90 (S/bound)	End of S/bound on slip at Glasslaw	Glasslaw Farm	0.3
TF	A90 (S/bound)	Glasslaw Farm	Midtown of Barras junction (turn)	1.8
TF	A90 (N/bound)	Midtown of Barras junction	Glasslaw Farm	1.8
SALT	A90 (N/bound)	Glasslaw Farm	Glasslaw slip northbound	0.5
SALT	A90 (N/bound)	Glasslaw slip N/bound	1st road junction	0.2
TF	A90	1st road junction	(turn)	
SALT	A90	1st road junction	A90 main carriageway	0.2
SALT	A90	A90 main carriageway	Bluehill junction (include increased width Muchalls/ Cookney & Cammachmore Jnc)	17
TF	A90 (N/bound)	Bluehill	Craighill (turn)	0.2
TF	A90 (S/bound)	Craighill	Start of Charlestown off slip	0.2
SALT	A90	Start of Charlestown off slip	End of Charlestown off slip	0.5
TF	Local road	End of Charlestown slip	Start of southbound Charlestown southbound on slip	0.1

Operation	Route	Direction	Route Description	Distance (km)
SALT	A90 (southbound)	Start of southbound Charlestown on slip	End of southbound on slip / A90 main carriageway	0.6
TF	A90 (S/bound)	A90 main c/way	Portlethen SB OffSlip	3
SALT	A90 (S/bound)	Portlethen SB OffSlip	Portlethen SB OnSlip	0.5
TF	A90 (S/bound)	Portlethen SB OnSlip	Badentoy SB Offslip	0.6
SALT	A90 (S/bound)	Badentoy SB Offslip	Badentoy SB Onslip	0.8
TF	A90 (S/bound)	Badentoy SB Onslip	Newtonhill Slip	2.7
SALT	A90 (S/bound)	Newtonhill Slip	Roundabout	0.2
SALT	A90 (S/bound)	Roundabout	A90 main carriageway (including Stonehaven north slip roads)	0.2
TF	A90 (S/bound)	A90 main carriageway	Spurryhillock Slip	8.2
SALT	A90	Spurryhillock Slip	Auchenblae Road	0.2
TF	A90	Auchenblae Road	Broomhill Road	0.5
TF	A90	Broomhill Road	Spurryhillock Slip	1.2
SALT	A90 (N/bound)	Spurryhillock Slip	A90 main carriageway	0.2
TF	A90	A90 main carriageway	B979 Netherley Off Slip	1.7
SALT	A90	Netherley Off Slip	Mains of Ury (turn) – (if busy turn at Commodore Hotel)	0.6
SALT	A90	Mains of Ury	A90 main carriageway	0.7
TF	A90	A90 main carriageway	Newtonhill Slip	5.2
SALT	A90	Newtonhill Slip	Newtonhill Slip (turn at Cookney Road)	0.5
SALT	A90	Newtonhill Slip	A90 main carriageway	0.5
TF	A90	A90 main carriageway	Badentoy NB OffSlip	3.1
SALT	A90	Badentoy NB OffSlip	Badentoy NB OnSlip	0.6
TF	A90 (N/bound)	Badentoy NB OnSlip	Portlethen NB offslip	1
SALT	A90	Portlethen NB offslip	Portlethen NB onslip	0.5
TF	A90 (N/bound)	A90 main carriageway – end of N/bound on slip at Portlethen	Start of the northbound off slip at Harbour Flyover	2.8
SALT	A90 (N/bound)	Start of the N/bound off slip at Harbour Flyover	Old Charlestown Road	0.8
			Totals	**95.3**

Depot:	Dundee	**Route:**	NE20R7
Spread Rate:	20g/m²	**Route Length:**	94 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	65 km
Depot to Route:	3 km	**Route Time:**	105 mins
Depot to Route:	4 min	**Route Coverage:**	9.10 tonnes
Route to Depot:	13.5 km	**Route Average Width:**	7 m
Route to Depot:	15 mins	**Route Average Speed:**	54 km/h



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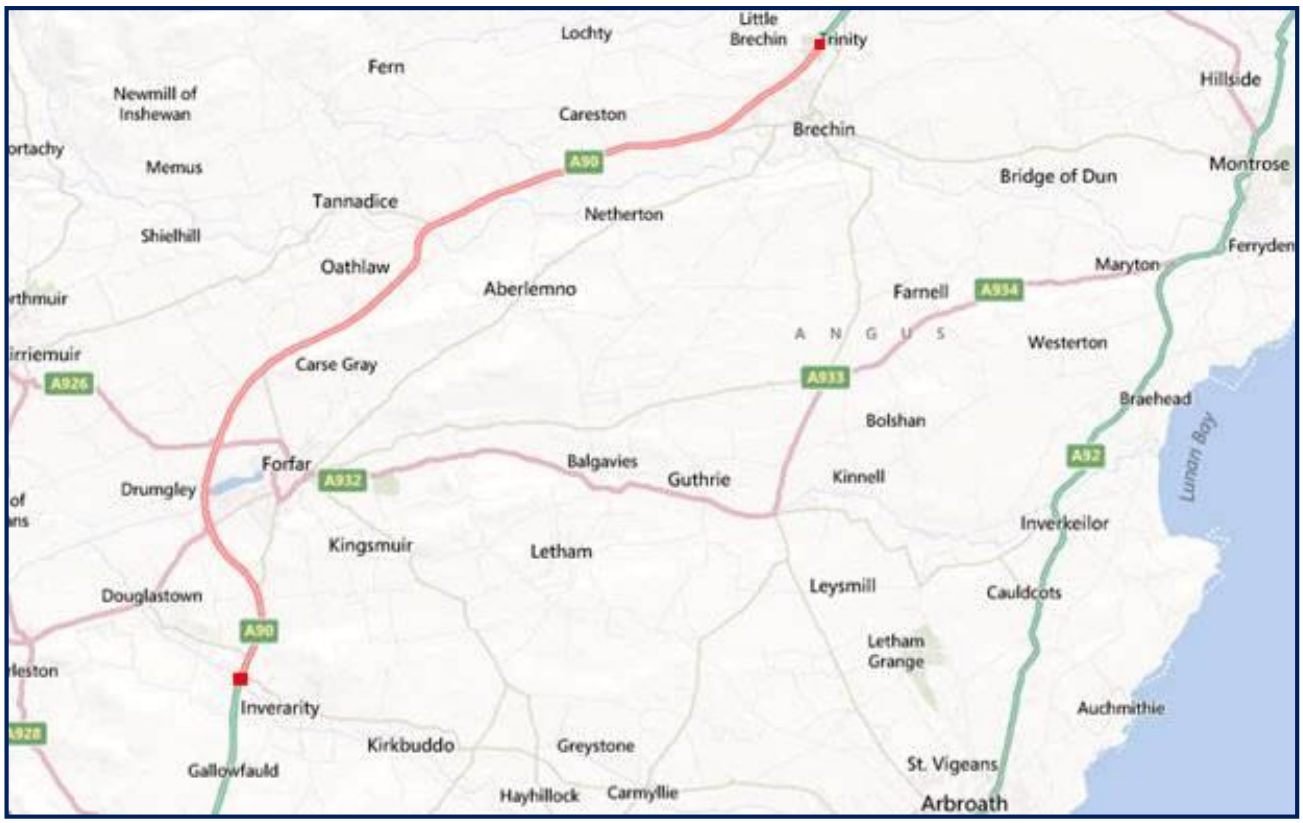
Operation	Route	From	To	Distance (km)
SALT	A90 (N/bound)	Junction with A90 Northwater Bridge	Just beyond Glasslaw Farm access. (include wider spread at Glencore Grain Area, Hillside, B974 Fettercairn/ Marykirk,B9120 St Cyrus/ Laurencekirk,B967 Arbuthnot/ Inverbervie, Fordoun, Glenbervie/ Auchinblae, Drumlithie & Kinneff/ Inverbervie jcns)	29.5
TF	A90 (N/bound)	Just beyond Glasslaw Farm access	Just before the northbound off slip at Glasslaw	1
SALT	A90 (N/bound)	Just before N/bound off slip Glasslaw	Just beyond the northbound on slip at Glasslaw	0.5
TF	A90 northbound	Just beyond northbound on slip Glasslaw	Spurryhillock – start of the Off Slip	0.5
TF	A957	Spurryhillock – start of Off Slip	A90 Junction	4
			(southbound)	
TF	A90	A90 Junction (southbound)	Glasslaw – just before the Off Slip	2
	southbound			
SALT	A90	Glasslaw – just before Off Slip	Glasslaw – just beyond the On Slip	0.5
	southbound			
TF	A90 S/bound	Glasslaw, just beyond Glasslaw on slip	Just before Glasslaw Farm acces	0.5
SALT	A90 S/bound	Just before Glasslaw Farm	Start of the southbound off slip at Stracathro	32
SALT	A90 S/bound	Start of S/bound off slip Stracathro	End of the southbound off slip at Stracathro	0.5
TF	A90 S/bound	End of southbound off slip at Stracathro	Start of S/bound off slip at Keithock (Incl. wider spread at Drumlithie, Glenbervie/ Auchinblae, Fordoun, B974 Fettercairn, and Glencore Grain Area junctions	3.5

Operation	Route	From	To	Distance (km)
SALT	A90 (southbound)	Start of southbound off slip at Keithock	End of the southbound off slip at Keithock	0.5
TF	A90 (southbound)	End of southbound off slip at Keithock	Start of the southbound off slip at St Ann's	4
SALT	A90 (southbound)	Start of S/bound off slip at St. Ann's	End of the southbound on slip at St Ann's	0.5
TF	A90 southbound	End southbound on slip St Ann's	Careston Castle Jcn	2.5
TURN	A90	Careston C Jcn		
TF	A90 northbound	Careston Castle Jcn	Start of northbound off slip at St Ann's	2.5
SALT	A90 northbound	Start of the northbound off slip at St Ann's	End of the northbound on slip at St. Ann's	0.5
TF	A90 northbound	End northbound on slip St Ann's	Start of northbound off slip at Keithock	4
SALT	A90 northbound	Start of N/bound off slip at Keithock	End of N/bound on slip at Keithock	1
TF	A90 northbound	End N/bound on slip Keithock	Start N/bound off slip at Stracathro	3.5
SALT	A90 northbound	Start northbound off slip Stracathro	End of N/bound on slip at Stracathro	0.5
			Totals	**94**

Depot:	Dundee	**Route:**	NE20R8
Spread Rate:	20g/m²	**Route Length:**	103 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	79 km
Depot to Route:	11 km	**Route Time:**	115 mins
Depot to Route:	13 min	**Route Coverage:**	11.06 tonnes
Route to Depot:	21 km	**Route Average Width:**	7 m
Route to Depot:	25 mins	**Route Average Speed:**	54 km/h



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Operation	Route	Direction	Route Description	Distance (km)
SALT	A90 N/bound	Emmock Roundabout	Beyond N/bound on slip at Stracathro (Include wider spread at Lochlands, B957 Finavon/ Tannadice plus hotel, diner and Careston jcn)	42
TF	A90 N/bound	Just beyond N/bound on slip at Stracathro	Turn at Glencore Grain Area	1
TF	A90 S/bound	Hillside Junction	Just before S/bound off slip at Stracathro	1
SALT	A90 S/bound	Just before S/bound off slip at Stracathro	A90 Lochlands Jcn (Incl. wider spread at Little Chef/ Finavon central reserve)	25.5
TURN	A90 Lochlands Jcn	A90 Lochlands Jcn		
TF	A90 N/bound	A90 Lochlands Jcn	A94 Glamis Jcn	3.5
SALT	A90	Start of A94 N/bound off slip	End of A94 northbound on slip	0.5
TF	A90 northbound	End of A94 N/bound on slip	Start of A926 northbound off slip	2.5
SALT	A90	Start of A926 N/bound off slip	End of A926 northbound off slip (incl. overbridge)	1
TF	A90 (northbound)	End of A926 N/bound off slip	A90 Quilkoe Jcn	2.5
TURN	A90 Quilkoe Jcn	A90 Quilkoe Jcn		
TF	A90 (s/bound)	A90 Quilkoe Jcn	Start of A926 offslip	2.5
SALT	A90 s/bound	Start of A926 off slip	Just before roundabout at south side of flyover.	0.5
TF	A90/A926 off slip s/bound	End of off slip at roundabout.	Start of on slip at roundabout.	0.2
SALT	A90/A926 on slip s/bound	Start of on slip at roundabout.	End of A90/A926 on slip	0.5
TF	A90 s/bound	End of A90/A926 on slip	Start of southbound off slip at A94 Forfar	1.5
SALT	A90/A94 off slip s/bound	Start s/bound off slip at A94 Forfar	Just before roundabout at south side of underpass.	0.5
TF	A90/A94 off slip s/bound	End off slip at roundabout.	Start of on slip at roundabout.	0.2
SALT	A90/A94 slip sbound	Start of on slip at roundabout.	End of A90/A94 on slip.	0.5
TF	A90 S/bound	End A90/A94 on slip	A90 Lochlands Junction	2

Operation	Route	Direction	Route Description	Distance (km)
SALT	A90 S/bound	A90 Lochlands Junction	Muiryfaulds Junction (do loop at Muiryfaulds)	5
TF	A90 N/bound	Muiryfaulds Junction	Start of A90 Gateside Northbound off slip	1.5
SALT	A90 n/bound	Start of A90 Gateside N/bound off slip	End of A90 Gateside Northbound off slip	0.4
TURN	A90 Gateside	A90 Gateside		
TF	A90 Gateside	A90 Gateside northbound onslip	End of A90 Gateside Northbound onslip	0.4
SALT				
TF	A90 N/bound)	End of A90 Gateside n/bound on slip	Start of A90 Douglastown Northbound offslip	1.8
SALT	A90 N/bound	Start of A90 Douglastown n/bound off slip	End of A90 Douglastown Northbound onslip	0.5
TF	A90 N/bound	End of A90 Douglastown N/bound on slip	A90 Lochlands Jcn	2
TURN	A90 Lochlands Jcn	A90 Lochlands Jcn		
TF	A90 S/bound	A90 Lochlands Jcn	Start of A90 Douglastown Northbound offslip	1.5
SALT	A90 S/bound	Start of A90 Douglastown S/bound off slip	End of A90 Douglastown southbound onslip	1
TF	A90 S/bound	End A90 Douglastown S/bound on slip	Start of Gateside southbound offslip	1
SALT	A90 S/bound	Start of Gateside S/bound off slip	End of Gateside southbound offslip	0.2
TURN	A90 Gateside	A90 Gateside		
SALT	A90 S/bound	Start of Gateside S/bound on slip	End of Gateside southbound onslip	0.2
			Totals	**103**

Depot:	Perth	**Route:**	NE20R9
Spread Rate:	20g/m²	**Route Length:**	96 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	59 km
Depot to Route:	10 km	**Route Time:**	114 mins
Depot to Route:	13 min	**Route Coverage:**	8.26 tonnes
Route to Depot:	24 km	**Route Average Width:**	7 m
Route to Depot:	28 mins	**Route Average Speed:**	54 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Perth depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
TF	M90/A90 Eastbound	Perth Depot	Just before Inchture Off slip E/B	28.8
Salt	A90 Eastbound	Just before Inchture Off slip E/B	Swallow roundabout inc. roundabout	8.2
Salt	A90 Westbound	Swallow roundabout	Just after Inchture On slip W/B	8.1
TF	A90 Westbound	Just after Inchture On slip W/B	Start of Inchmichael Off slip w/b	3.5
Salt	Inchmichael interchange	Start of Inchmichael Off slip w/b	End of eastbound on slip Inchmichael	0.85
TF	A90	End of on slip Inchmichael i/c	Swallow roundabout	11.7
Salt	A90	Swallow roundabout	Strathmartin rd roundabout inc all roundabouts	5.4
Salt	A90	Strathmartin rd roundabout	Swallow roundabout	5.3
TF	A90	Swallow roundabout	Coupar Angus rd off slip	3.3
Salt	A90	Coupar Angus rd off slip eastbound	Coupar Angus Rd on slip eastbound	0.5
TF	A90	Coupar Angus Rd on slip eastbound	A90 Kings Cross Interchange off slip	0.6
Salt	A90	A90 Kings Cross Interchange off slip eastbound	End of Kings Rd Interchange on slip eastbound	0.55
TF	A90	End of Kings Rd Interchange on slip eastbound	Strathmartin Rd roundabout	0.55
Salt	A90	Strathmartin Rd roundabout	Scott Fyffe roundabout	4.2
Salt	A92	Scott Fyffe roundabout	Traffic lights at jct with West Victotia Dock Rd (after Arnold clark)	3.5
TF	A92	Traffic lights at jct with West Victotia Dock Rd (after Arnold clark)	Junction at A92 Dock Street Via South Victoria Dock Rd & West Victoria Dock Street	
Salt	A92	Traffic Lights at Junction Dock street (before Arnold Clark)	Scott Fyffe Roundabout	3.2
Salt	A972	Scott Fyffe Roundabout	Forfar Rd Junction	1.9
Salt	A90	Forfar Rd Junction	Emmock Rd Roundabout inc roundabouts.	1.6
TF	A90	Emmock Rd Roundabout	Turn at Gateside	11
TF	A90 Northbound	Gateside	Just before Layby Muiryfaulds Jct	1.7
Salt	A90 Southbound	Just before Layby Muiryfaulds Jct	Forfar Rd Jct Inc wider spread Tealing & Kellas Jct	11.2
Salt	A90	Forfar Rd Jct	Strathmartin Rd roundabout	2.3
TF	A90	Strathmartin Rd roundabout	Kings Cross Interchange westbound	0.3
Salt	A90	Start of Kings Cross Interchange off slip westbound	End of Kings Cross Interchange on slip westbound	0.8

TF	A90	End of Kings Cross Interchange on slip westbound	Start of Coupar Angus off slip Westbound	0.55
Salt	A90	Start of Coupar Angus off slip Westbound	End of Coupar Angus on slip westtbound	0.45
TF	A90	End of Coupar Angus on slip westtbound	Start of off slip to Invergowrie	3.4
Salt	A90	Start of off slip to Invergowrie layby & roundabout.	End of on slip from Invergowrie layby/roundabout	0.7
TF	A90	End of on slip from Invergowrie layby/roundabout	Start of Longforgan off slip westtbound	3.4
Salt	A90	Start of Longforgan off slip westbound	End of Longforgan off slip westbound	0.22
TF	A90	End of Longforgan off slip westbound	Start of Longforgan on slip eastbound	0.24
Salt	A90	Start of Longforgan on slip eastbound	End of Longforgan on slip eastbound	0.24
TF	A90	End of Longforgan on slip eastbound	Swallow roundabout	4.0
TF	A90/M90	Swallow roundabout	Perth Depot	36.8

Depot:	Perth	**Route:**	NE20R10
Spread Rate:	20g/m²	**Route Length:**	103 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	62 km
Depot to Route:	0.5 km	**Route Time:**	99 mins
Depot to Route:	1 min	**Route Coverage:**	8.68 tonnes
Route to Depot:	2 km	**Route Average Width:**	7.3 m
Route to Depot:	2 mins	**Route Average Speed:**	54 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Lochgelly depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	From	To	Distance (km)
TF	A93 (westbound)	Inveralmond Depot	A9 Inveralmond roundabout	0.7
SALT	A9 (southbound)	A9 Inveralmond Roundabout inc roundabout	A9 Broxden roundabout inc roundabout	4.5
SALT	A9 (northbound)	A9 Broxden roundabout (northbound)	A9 Inveralmond Roundabout	4.3
TF	A9 (southbound)	A9 Inveralmond Roundabout	A85 off slip to Creiff Rd	1.3
SALT	A9 (southbound)	A85 Creiff Rd off slip	Creiff rd (Tesco's) roundabout inc. roundabout	0.5
SALT	A9 (southbound)	Creiff rd (Tesco's) roundabout	A85 Creiff rd on slip /A9 main carridgeway	0.5
TF	A9 (Perth southbound)	A85 Creiff rd on slip /A9 main carridgeway)	M90 / A9 Broxden	2.4
SALT	A9 (southbound)	A9 Broxden	Just after Aberuthven junction A824	13.2
TF	A9 (southtbound)	Just after Aberuthven junction A824	A820 Loaninghead Off slip southbound	8.3
SALT	A9 (southbound)	A820 Loaninghead Off slip southbound	End of Loaninghead off slip	0.3
TF	A820 IC	End of Loaninghead off slip	Start of Loaninghead on slip northbound	0.35
SALT	A9 (northbound	Start of Loaninghead on slip northbound	End of loaninghead on slip northbound	0.5
TF	A9 (northbound)	End of loaninghead on slip northbound	Just before A824 Aberuthven off slip	8.1
SALT	A9 northbound	Just before A824 Aberuthven off slip	Broxden roundabout	12.7
SALT	M90 Southbound	Broxden roundabout	Just after the eastbound on slip at A85 Barnhill	7.2
TF	A90 Eastbound	Just after the eastbound onf slip at A85 Barnhill	Start of eastbound off slip to Kinfauns	3.3
SALT	A90 (Kinfauns I/C)	Start of eastbound off slip to Kinfauns	End of eastbound off slip to Kinfauns	0.3
TF	A90 (Kinfauns I/C)	Turn at Farm Road end		
TF	A90 (Kinfauns)	End of eastbound on slip	Start of Glendoik off slip	6.1
SALT	A90 Glendoik I/C	Start of Glendoik off slip	End of Glendoik westbound on slip	0.8
TF	A90 Glendoik I/C	End of Glendoik westbound on slip	Start of westbound off slip to Kinfauns	6
SALT	A90 Kinfauns I/C	Start of westbound off slip to Kinfauns	End of splitter island	0.35
TF	A90 Kinfauns I/C	End of splitter island	Farm road end to turn	
SALT	A90 Kinfauns I/C	Farm road end	End of westbound on slip	0.35
TF	A90 westbound	End Kinfauns of westbound on slip	Just before the westbound off slip at A85 Barnhill	3.1
SALT	A85 Barnhill I/C	Just before the westbound off slip at A85 Barnhill	Follow off slip towards Perth untitled link road heading back to Dundee at Nadics sign	1
SALT	A85 Barnhill I/C)	Start of link road	End of link road	0.2

Operation	Route	From	To	Distance (km)
TF	A85 Barnhill I/C)	End of link road	Junction at bottom of off slip from Friarton bridge northbound	0.35
SALT	A85 Barnhill I/C/ M90 Friarton Bridge	Junction at bottom of off slip from Friarton bridge northbound	Just beyond the end of the southbound on slip at Friarton bridge	0.5
TF	M90 Friarton bridge southbound	end of the southbound on slip at Friarton bridge	Start of the off slip for M90 Broxden at south end of Friarton bridge	1.5
SALT	M90 Craigend / Perth Southern bypass	Start of the off slip (Craigend mid deck) for M90 Broxden	M90 Broxden roundabout	5.1
TF	M90 Broxden	Broxden roundabout	Start of the southbound on slip at Broxden (via the park and ride roundabout	1
SALT	Southbound on slip at Broxden	Start of the southbound on slip at Broxden	End of the southbound on slip at Broxden	0.2
TF	M90 Perth Southern Bypass (southbound)	End of the southbound on slip at Broxden	Start of the off slip from Southern Bypass for M90 Southbound (top deck)	4
SALT	M90 Craigend (top deck)	Start of the off slip from Southern Bypass for M90 Southbound (top deck)	End of the off slip from Southern Bypass for M90 Southbound (top deck)	1.2
TF	M90 (southbound)	End of the off slip from Southern Bypass for M90 Southbound (top deck)	Bridge of Earn	2.7
SALT	M90 Bridge of Earn (southbound)	Start of the short southbound slip road on to the A912	A912	0.1
TF	Bridge of Earn	A912	Start of the short northbound slip road from the A912	0.1
SALT	M90 Bridge of Earn (northbound)	Start of the short northbound slip road from the A912	End of the short northbound slip road from the A912	0.1
TF	M90 (northbound)	Bridge of Earn	Just before Jct 10 Off slip to (M90 southern bypass)	2.7
SALT	M90	Just before Jct 10 Off slip to (M90 southern bypass)	Just beyond the northbound on slip from M90 Perth southern bypass (just south of Friarton bridge)	0.85
TF	M90 Friarton bridge (Northbound) / A85 Barnhill I/C	Just beyond the northbound on slip from M90 Perth southern bypass (just south of Friarton bridge)	Just before the Perth bound off slip at the north end of Friarton bridge	1.5
SALT	A85 Barnhill Interchange	Just before the Perth bound off slip at the north end of Friaton Bridge	End of off slip to Perth at Junction from Perth	0.25
TF	A85 Barnhill Interchange	End of off slip to Perth at Junction from Perth	Just before the link road for Dundee	1

Operation	Route	From	To	Distance (km)
SALT	A85 Barnhill Interchange	Just before the link road for Dundee	Toll house on Dundee road,Perth	0.35
TF	U/C	Toll House, Dundee Road, Perth	Inveralmond Depot	7
			Totals **103**	**8.03**

Depot:	Perth	**Route:**	NE20R11
Spread Rate:	20g/m²	**Route Length:**	96 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	58 km
Depot to Route:	25 km	**Route Time:**	102 mins
Depot to Route:	17.4 mins	**Route Coverage:**	8.12 tonnes
Route to Depot:	45 km	**Route Average Width:**	7.3 m
Route to Depot:	45 mins	**Route Average Speed:**	56 km/h

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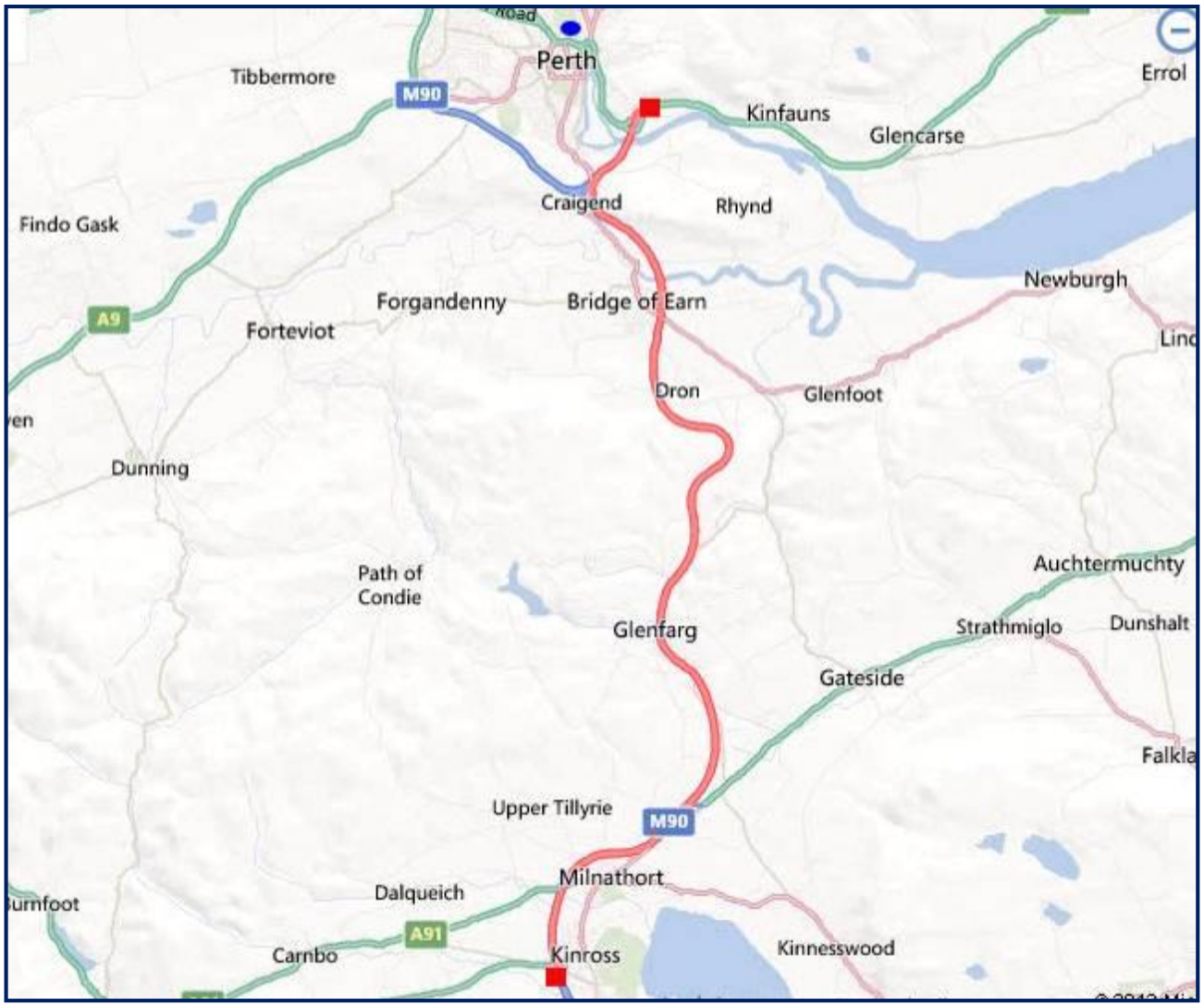
Operation	Route	From	To	Distance (km)
TF	A9 (southbound)	Inveralmond Depot	Just before Aberuthven junction A824	17.7
SALT	A9 (southbound)	Just before Aberuthven junction A824	A9/M9 Keir R'about (incl. r'about) (Incl. wider spread at Blackford south & Greenloaning junctions)	29.4
SALT	A9 (northbound)	A9/M9 Keir R'about (incl. r'about) (Incl. wider spread at Blackford south & Greenloaning junctions)	Start of A820 off slip northbound	2.5
SALT	A9 (northbound)	Start of A820 off slip northbound	End of A820 on slip northbound	0.8
TF	A9 (northbound)	End of A820 on slip northbound	Start of Queen Victoria slip northbound	2.1
SALT	A9	Start of Queen Victoria slip northbound	End of Queen Victoria off slip	0.2
TF	B8033	End of Queen Victoria off slip	Start of Queen Victoria southbound on slip	0.35
SALT	A9 (southbound)	Start of Queen Victoria southbound on slip	End of Queen Victoria on slip southbound	0.5
TF	A9 (southbound)	End of Queen Victoria on slip southbound	A820 Dunblane start of off slip	2
SALT	A9	A820 Dunblane start of off slip	A820 Dunblane end of on slip	0.85
TF	A9 (southbound)	A820 Dunblane end of on slip	A9 Keir roundabout	2.1
TF	A9 (northbound)	A9 Keir roundabout	A820 Dunblane start of northbound off slip	2.5

Operation	Route	From	To	Distance (km)
SALT	A9 (northbound)	A820 Dunblane start of northbound off slip	Second Greenloaning exit (Millhill rd)	9.3
SALT	A9 (southbound)	A9 Queen Victoria off slip southbound	End of Queen Victoria off slip southbound	
TF	B8033	End of Queen Victoria off slip southbound	Start of Queen Victoria on slip northbound	
SALT	A9 (Northbound)	Start of Queen Victoria on slip northbound	End of Queen Victoria on slip northbound	
TF	A9 (northbound)	A9 End of Queen Victoria on slip northbound	Second Greenloaning exit	
SALT	A9 (northbound)	Second Greenloaning exit	End of Loaninghead A823 offslip	9.7
TF	A823	End of Loaninghead A823 offslip	Start of Loaninghead on slip southbound	0.25
SALT	A9	Start of Loaninghead on slip southbound	End of Loaninghead onslip southbound	0.5
TF	A9	End of Loaninghead onslip southbound	Blackford Jct	3.1
SALT	A9	Blackford Jct	In to Blackford B8081	0.25
TF	B8081	Blackford Jct	Loaninghead offslip northbound	3.7
SALT	A9	Loaninghead offslip northbound	A9 start of offslip to Aberuthven	8.7
SALT	A9/A824	Aberuthven off slip	End of Aberuthven off slip	0.25

Operation	Route	From	To	Distance (km)
	A824	Turn at Aberuthven		
SALT	A824	Start of Aberuthven on slip	End of Aberuthven on slip	0.25
TF	A9	End of Aberuthven on slip	Perth Depot	17.4
TOTALS				**96**

Depot:	Lochgelly	**Route:**	NE20R12
Spread Rate:	20g/m²	**Route Length:**	131.9 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	80.2 km
Depot to Route:	7.8 km	**Route Time:**	114 mins
Depot to Route:	15 mins	**Route Coverage:**	12.55 tonnes
Route to Depot:	3 km	**Route Average Width:**	7.83 m
Route to Depot:	6 mins	**Route Average Speed:**	67 km/h



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ROUTE CARD FOR PRECAUTIONARY TREATMENT ROUTE No. NE 12

DEPOT: INVERALMOND DEPOT, LOCHGELLY			VEHICLE: 32 TONNES GVW 6X4			
Action	**Road**	**From**	**To**	**Distance (km)**	**Average speed(km/hr)**	**Time (mins)**
TF	U/C	Lochgelly depot	Start of off slip at Chapel eastbound	7.8	80	7
START OF ROUTE						
SALT	A92(eastbound)	Start of off slip at Chapel eastbound	End of Chapel on slip eastbound inc. roundabout	1.2	60	1.2
TF	A92(westbound)	End of Chapel on slip eastbound	Start of Lochgelly off slip westbound	4.5	80	4
Salt	A92(westbound)	Start of Lochgelly off slip westbound	Start of Crossgates off slip westbound	7.3	60	7.3
Salt	A92(westbound)	Start of Crossgates off slip westbound	Start of M90 on slip northbound at Halbeath roundabout inc. roundabout's	2	60	2
Salt	M90 Northbound	Start of M90 on slip northbound at Halbeath	End of off slip to Perth Edinburgh road at jct10 Craigend	37.7	60	37.7
TF	U/C	End of off slip to Perth Edinburgh road at jct10 Craigend	Tesco's roundabout Edinburgh road.	1.3	45	2
TF	U/C	Tesco's roundabout Edinburgh road	Edinburgh road/M90 Scoonieburn	1.3	45	2
Salt	M90 southbound	Edinburgh road/M90 Scoonieburn	End of southbound on slip to M90 Craigend	1.1	50	1.3
TF	M90 southbound	End of southbound on slip to M90 Craigend	Start of off slip to Bridge Of Earn	2.6	90	1.7
Salt	Bridge of Earn Slips	Start of off slip to Bridge Of Earn	End of off slip to Bridge of Earn A912	0.5	60	0.5
TF	A912	End of off slip to Bridge of Earn A912	Start of on slip to M90 southbound Bridge of Earn (via new roundabout	0.4	60	0.5
Salt	Bridge of Earn Slip	Start of on slip to M90 southbound Bridge of Earn	End of on slip to M90 southbound Bridge of Earn	0.4	60	.05
TF	M90 Southbound	End of on slip to M90 southbound	End of on slip from A91 Arlay	13.5	90	9
Salt	M90 Southbound	End of on slip from A91 Arlay	End of southbound off slip to Halbeath roundabout	20.1	60	20.1
TF	Halbeath interchange	End of southbound off slip to Halbeath roundabout	Start of Halbeath on slip northbound	0.5	45	1
TF	M90 Northbound	Start of Halbeath on slip northbound	Start of off slip at Kelty Northbound	4	80	3.5
Salt	M90 northbound	Start of off silp at Kelty northbound	End of on slip at Kelty northbound	1	60	1

TF	M90 northbound	End of on slip at Kelty northbound	Start of Gairneybridge off slip northbound	3.5	80	3
Salt	M90 northbound	Start of Gairneybridge off slip northbound	End of Gairneybridge off slip northbound	0.5	60	0.5
TF	B9097	End of Gairneybridge off slip northbound	Start of Gairneybridge on slip southbound	0.5	45	0.5
SALT	M90 (southbound)	Start of the southbound on slip at Gairneybridge	End of the southbound on slip at Gairneybridge	0.5	60	1
TF	M90 (southbound)	End of the southbound on slip at Gairneybridge	Start of the Southbound off slip at Kelty	3.5	80	3
SALT	M90 (southbound(	Start of the Southbound off slip at Kelty	End of the southbound on slip at Kelty	0.5	45	1
TF	M90 (southbound)	End of the southbound on slip at Kelty	Start of the Southbound off slip at Halbeath	4.5	80	4
TF	M90 (southbound	Start of the Southbound offslip at Halbeath	End of the southbound offslip at Halbeath	0.5	60	0.5
Salt	A92 eastbound	End of the southbound off slip at Halbeath	End of on slip at Crossgates eastbound	1.3	50	1
SALT	A92 eastbound	End of on slip at Crossgates eastbound	End of on slip at Lochgelly eastbound	7.4	60	7.4
END OF ROUTE						
TF	A92	End of on slip at Lochgelly eastbound	Lochgelly depot	13.8	80	12

Depot: Lochgelly
Spread Rate: 20g/m2
Treatment Type: Pre-wetted salt
Depot to Route: U/C 11.2km A92/M90 18km
Depot to Route: U/C 12.2 min A92/M90 12 min
Route to Depot: U/C 11.2km A92/M90 21.4 km
Route to Depot: U/C 12.2 min A92/M90 13.3 min

Route: NE20R13
Route Length: 122.9
Route Treated Length 69.45
Route time: 105.14min
Route Coverage: 10.23 tonne
Route Average Width: 7.5m
Route Average Speed: 85km/h

Operation	Route	From	To	Distance (km)	Time
TF	U/C	Lochgelly depot	Start of on slip northbound Jct 5	11.2	12.2
TF	A92/M90	Lochgelly depot	Start of on slip northbound Jct 5	18	12
Salt	M90 Northbound	Start of Gairnybridge on slip northbound	End of Gairnybridge on slip northbound	0.5	0.46
TF	M90 Northbound	End of Gairnybridge on slip northbound	Start of Kinross off slip northbound	4	2.66
Salt	M90 northbound	Start of Kinross off slip northbound	End of Kinross on slip northbound	1	0.93
TF	M90 northbound	End of Kinross on slip northbound	A91 Arlay off slip	4.5	3
Salt	M90 northbound	A91 Arlay off slip	End of the Arlay dual carriageway just before A91 junction	1.4	1.31
TF	U/C	End of the Arlay dual carriageway just before A91 junction	First right turn and follow road to T junction turn right to the A91 turn right to the start of Dual Section	1.4	0.93
Salt	M90 southbound	Start of dual section on Arlary on slip southbound	End of Aralry on slip southbound	1.2	1.12
TF	M90 southbound	End of Aralry on slip southbound	Start of Milnathort off slip	2.6	1.73
Salt	M90 southbound	Start of Milnathort off slip	End of Milnathort off slip	0.4	0.37
TF	A91	End of Milnathort off slip	Start of Milnathort on slip Northbound	0.25	0.16
Salt	M90 northbound	Start of Milnathort on slip Northbound	End of Milnathort on slip northbound	0.65	0.60
TF	M90 northbound	End of Milnathort on slip northbound	Start of the Northbound off slip at Bridge of Earn	16	10.66
Salt	M90 northbound	Start of the Northbound off slip at Bridge of Earn	End of off slip at A912	0.45	0.42

TF	A912	End of off slip at A912 junction –Turn at Wicks o' Baiglie road, Bridge of Earn	Start of the Northbound on slip at Bridge of Earn	0.75	0.49
Salt	M90 northbound	Start of the Northbound on slip at Bridge of Earn	End of short on slip from Bridge of Earn	0.2	0.18
TF	M90 northbound	End of short on slip from Bridge of Earn	Just before Jct 10 Craigend	2.9	1.93
Salt	M90 northbound	Just before Jct 10 Craigend	End of on slip from Southern bypass	1	0.93
TF	M90 northbound	End of on slip from Southern bypass	A85 off slip at Barnhill	1.4	0.93
Salt	A90 northbound	A85 off slip at Barnhill	Start of the eastbound off slip at Inchmichael	13.5	12.65
Salt	Inchmichael I/C	Start of the eastbound off slip at Inchmichael	End of the westbound on slip at Inchmichael	0.75	0.70
TF	A90 Westbound	End of the westbound on slip at Inchmichael	Start of Glendoik Westbound off slip	3	1.99
Salt	A90 Glendoik Interchange (westbound)	Start of the westbound off slip at Glendoik	End of splitter island westbound off slip at Glendoik	0.2	0.18
TF	A90 Glendoik Interchange	End of splitter island westbound off slip at Glendoik	Start of splitter island eastbound on slip at Glendoik	0.45	0.3
Salt	A90 Glendoik Interchange (Eastbound)	Start of splitter island eastbound on slip at Glendoik	End of eastbound on slip at Glendoik I/C	0.2	0.18
TF	A90 Eastbound	End of eastbound on slip at Glendoik I/C	Start of Eastbound off slip at Inchmichael I/C	3.2	2.13
Salt	A90 Inchmichael Interchange	Start of westbound off slip at Inchmichael eastbound	Start of eastbound off slip at Inchture Interchange	3.9	3.65
Salt	A90 Inchture interchange eastbound	Start of eastbound off slip at Inchture Interchange	End of eastbound offslip at Inchture interchange	0.3	0.287
TF	A90 Inchture Interchange (eastbound)	end of eastbound of fslip at Inchture Interchange	Start of eastbound on slip at B953 Inchture (just east of JG's diner	0.85	0.56
Salt	A90 / B953 Junction	Start of eastbound on slip at B953 Inchture (just east of JG's diner	End of eastbound on slip at B953 Inchture (just east of JG's diner	0.1	0.09
TF	A90 / B953 Junction	End of eastbound onslip at B953 Inchture (just east of JG's diner	Start of eastbound off slip at Longforgan interchange	2.5	1.66
Salt	A90 Longforgan interchange	Start of eastbound off slip at Longforgan interchange	End of eastbound off slip at Longforgan interchange	0.2	0.18
TF	A90 Longforgan interchange)	End of eastbound off slip at Longforgan interchange	Start of westbound on slip at Longforgan interchange	0.2	0.18
Salt	A90 Longforgan interchange	Start of westbound on slip at Longforgan interchange	End of westbound on slip at Longforgan interchange I/C	0.2	0.18
TF	A90 westbound	End of westbound on slip at Longforgan interchange I/C	Start of westbound on slip at Inchture Interchange	3.2	2.10
Salt	A90 Westbound	Start of westbound off slip at Inchture Interchange	End of westbound onslip at Inchture interchange	0.6	0.56
Salt	A90 Westbound	End of westbound onslip at Inchture interchang	Start of off slip to A85 Perth	16.8	15.75
Salt	A90/A85	Start of off slip to A85 Perth	End of off slip to A85 Perth	0.3	0.28

TF	A85	End of off slip to A85 Perth	Link road at Nadic board back eastbound	0.75	0.49
Salt	A85	Link road at Nadic board back eastbound	End of link road at Nadic board	0.1	0.09
TF	A85	End of link road at Nadic board	On slip for M90 Southbound	0.7	0.45
Salt	A85	On slip for M90 Southbound	End of on slip to M90 Southbound	0.2	0.18
TF	M90	End of on slip to M90 Southbound	Start of off slip to southern bypass	1.4	0.92
Salt	M90 southbound	Start of off slip to southern bypass (300m after Friarton bridge)	End of Arlay on slip from A91 southbound	18.0	16.87
TF	M90 southbound	End of Arlay on slip from A91 southbound	Start of Kinross off slip southbound	4.5	3
Salt	M90 southbound	Start of Kinross off slip southbound	End of Kinross on slip southbound inc. roundabout	1.8	1.68
TF	M90 southbound	End of Kinross on slip southbound	Start of Gairneybridge off slip	3.9	2.59
Salt	M90 Southbound	Start of Gairneybridge off slip	End of off slip Gairneybridge	0.5	0.46
TF	U/C	End of off slip Gairneybridge	Lochgelly depot	11.1	13.3
TF	M90/A92	End of off slip Gairneybridge	Lochgelly depot	21.4	13.5

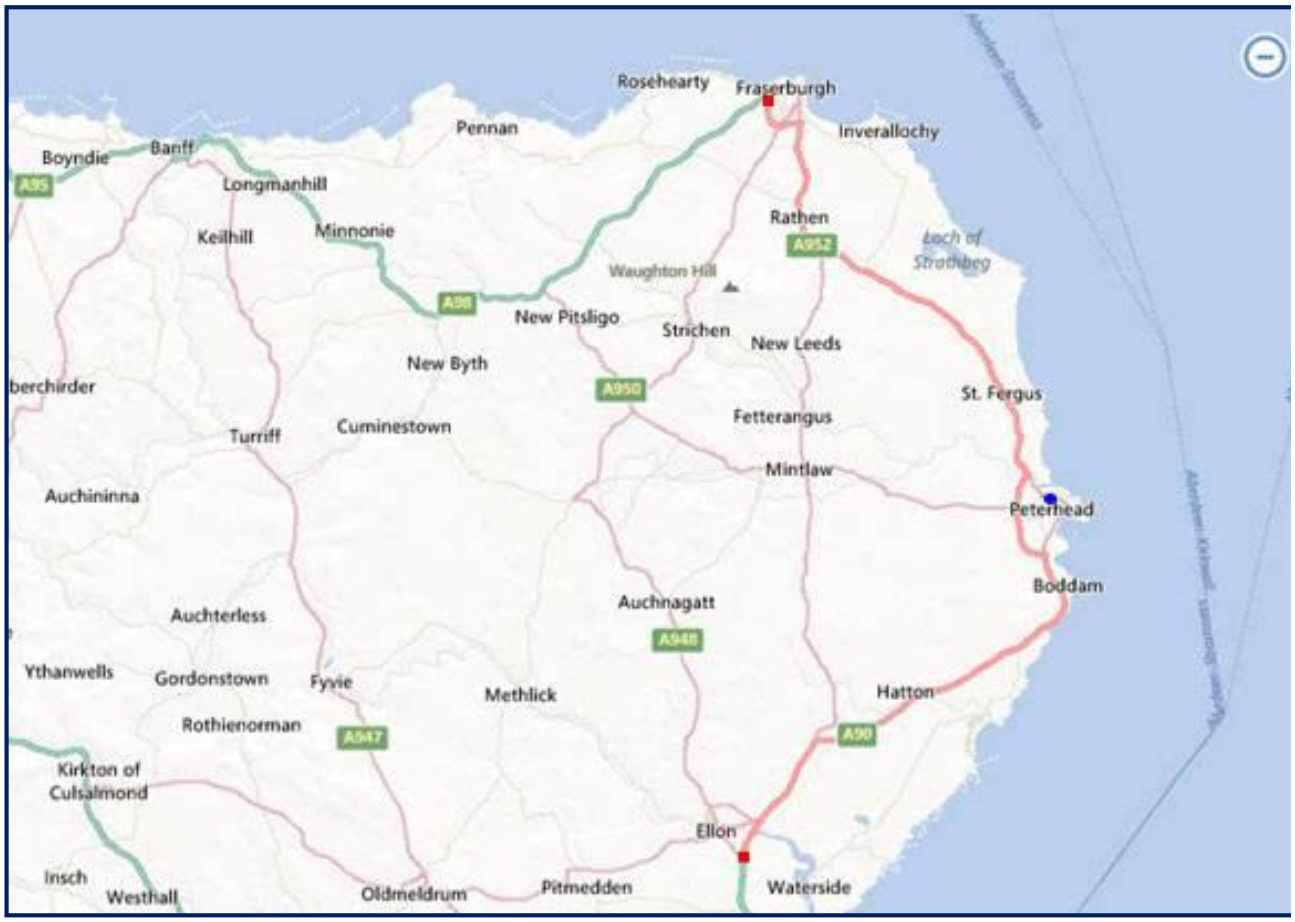
Depot:	Lochgelly	**Route:**	NE20R14
Spread Rate:	20g/m²	**Route Length:**	117 km
Treatment Type:	Pre-wetted Salt	**Route Treated Length:**	75 km
Depot to Route:	3 km	**Route Time:**	110 mins
Depot to Route:	9 mins	**Route Coverage:**	10.5 tonnes
Route to Depot:	51 km	**Route Average Width:**	7.25 m
Route to Depot:	51 mins	**Route Average Speed:**	64 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Dundee depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	From	To	Distance (km)
TF	U/C	Lochgelly Depot	A92 Lochgelly Junction	3
SALT	A92 (westbound)	A92 Lochgelly westbound on slip	End of Lochgelly on slip westbound	0.5
TF	A92 (westbound)	End of Lochgelly on slip westbound	Start of off slip at Cowdenbeath westbound	2.9
SALT	A92 (Westbound)	Start of off slip at Cowdenbeath westbound	End of off slip at Cowdenbeath westbound	0.4
TF	A92 (westbound)	End of off slip at Cowdenbeath westbound	Start of on slip at Cowdenbeath westbound	0.06
SALT	A92 (westbound)	Start of on slip at Cowdenbeath westbound	End of on slip at Cowdenbeath westbound	0.45
TF	A92 (westbound)	End of on slip at Cowdenbeath westbound	End of offslip at Crossgates westbound	3.3
TF	A92 crossgates roundabout	End of offslip at Crossgates westbound	Start of on slip at Crossgates eastbound	0.5
TF	A92 eastbound	Start of on slip at Crossgates eastbound	Start of off slip at Cowdenbeath eastbound	3.5
SALT	A92 eastbound	Start of off slip at Cowdenbeath eastbound	End of off slip at Cowdenbeath eastbound	0.28
TF	A92 eastbound	End of off slip at Cowdenbeath eastbound	Start of on slip at Cowdebeath eastbound	0.06
SALT	A92 eastbound	Start of on slip at Cowdebeath eastbound	End of on slip at Cowdenbeath eastbound	0.35
TF	A92 eastbound	End of on slip at Cowdenbeath eastbound	Start of off slip at Lochgelly eastbound	2.9
SALT	A92 eastbound	Start of off slip at Lochgelly eastbound	End of off slip at Lochgelly eastbound	0.35
TF	A92 eastbound	End of off slip at Lochgelly eastbound	Start of on slip at Lochgelly eastbound	0.06
SALT	A92 eastbound	Start of on slip at Lochgelly eastbound	Redhouse roundabout inc. Roundabout	9.8
SALT	A92 westbound	Redhouse roundabout	Start of off slip at Chapel westbound	4
SALT	A92 westbound	Start of off slip at Chapel westbound	End of off slip at Chapel westbound	0.5
Tf	A92 Chapel roundabout	End of off slip at Chapel westbound	Start of on slip at Chapel East bound	0.5
SALT	A92 eastbound	Start of on slip at Chapel East bound	End of on slip at chapel eastbound	0.5
TF	A92 eastbound	End of on slip at chapel eastbound	Redhouse roundabout	3.9
TF	A92 westbound	Redhouse roundabout	Start of off slip at Chapel westbound	3.9
SALT	A92 westbound	Start of off slip at Chapel westbound	End of off slip at Lochgelly westbound	5.7
TF	A92 Eastbound	End of off slip at Lochgelly westbound	Redhouse roundabout	9.6
SALT	A92 northbound	Redhouse roundabout	Preston roundabout inc. roundabout	6.3
SALT	A92 southbound	Preston roundabout	Redhouse roundabout inc. Bankhaed rounabout	6.3

TF	A92 northbound	Redhouse roundabout	Preston roundabout	6.3
SALT	A92 northbound	Preston roundabout	New Inn roundabout inc. roundabouts	4.5
SALT	A92 southbound	New Inn roundabout	End of dual section at Balfarg	2
TF	A92 southbound	End of dual section at Balfarg	Tullis Russell Roundabout	1.4
TF	A92 Northbound	Tullis Russell Roundabout	New Inn roundabout	3.5
SALT	A92 northbound	New Inn roundabout	Tay Bridge Roundabout (incl. all R/bs)	30.2
SALT	A92 (southbound)	Tay Bridge Roundabout	Forgan R/B	2.5
TF	A92 (southbound)	Forgan R/B	Lochgelly depot	51
			Totals	**117.01**

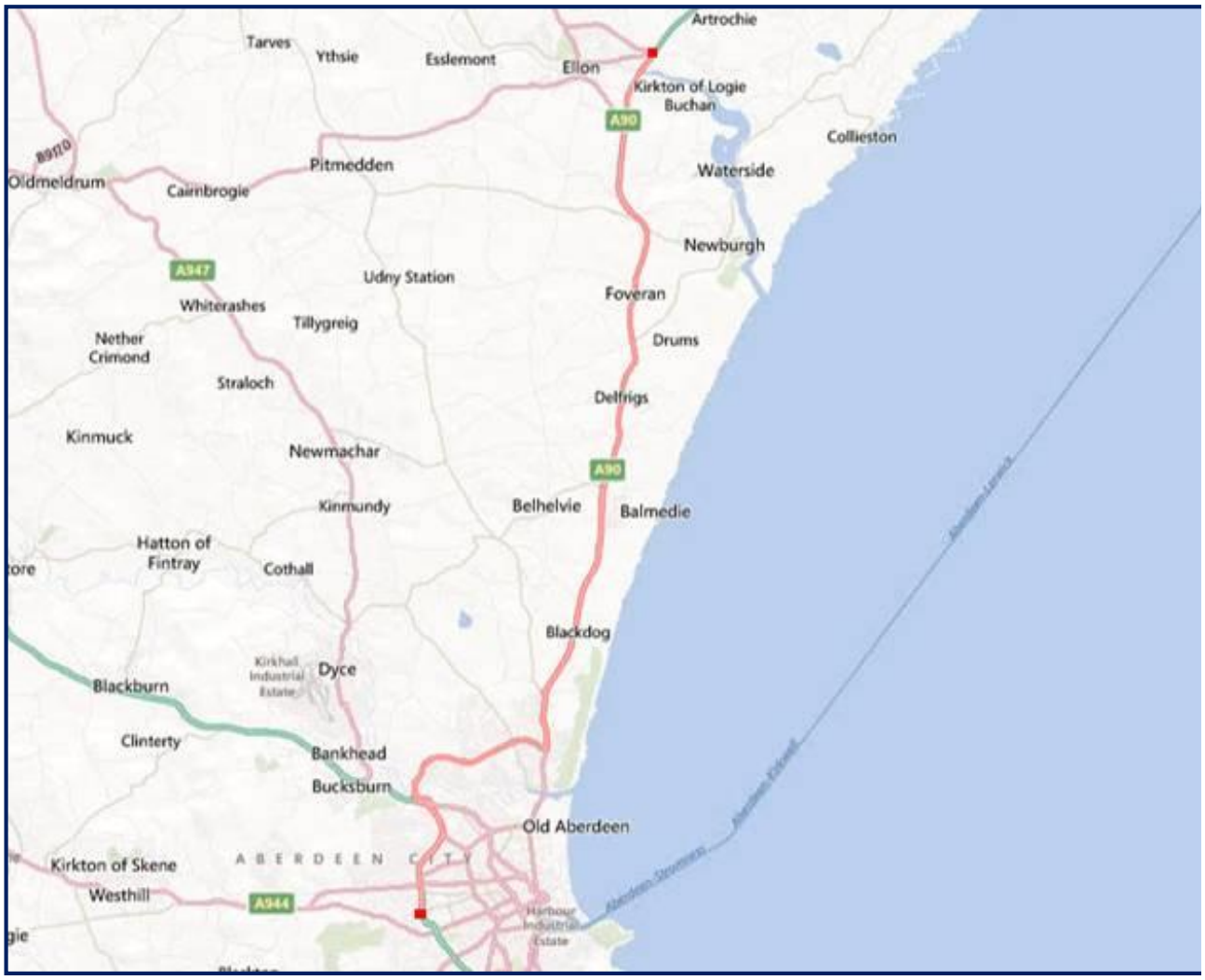
Depot:	Stirlinghill	**Route:**	NE40R1
Spread Rate:	40g/m²	**Route Length:**	85.5 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	53 km
Depot to Route:	0.5 km	**Route Time:**	107 mins
Depot to Route:	1 min	**Route Coverage:**	13.8 tonnes
Route to Depot:	20.0 km	**Route Average Width:**	6.5 m
Route to Depot:	22.0 mins	**Route Average Speed:**	48 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	Stirlinghill to A98 Junction Fraserburgh (including r'abouts & deceleration lanes at Peterhead Power Station)	32.0
Turn	A90		A98 Junction Fraserburgh	
Travel	A90	South	A98 Junction Fraserburgh to Stirlinghill Quarry	32.0
Salt	A90	South	Stirlinghill Quarry to A90 Ellon Dual	21.0
			Totals	**85.5**

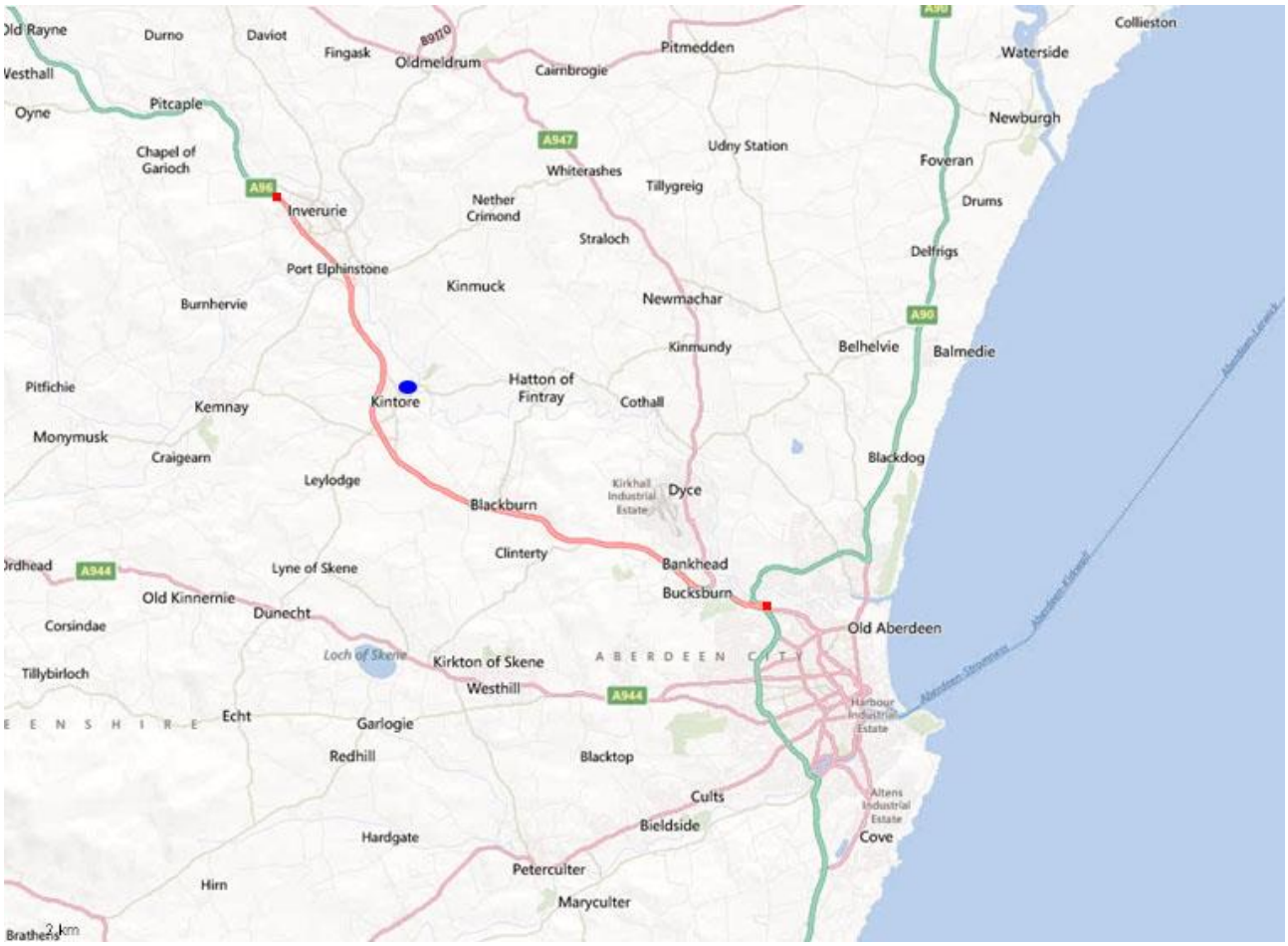
Depot:	Stirlinghill	**Route:**	NE40R2
Spread Rate:	40g/m²	**Route Length:**	61.4 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	44 km
Depot to Route:	20 km	**Route Time:**	78 mins
Depot to Route:	24 min	**Route Coverage:**	12.3 tonnes
Route to Depot:	25.0 km	**Route Average Width:**	7.0 m
Route to Depot:	29.0 mins	**Route Average Speed:**	48 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Stirlinghill depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	A90 Haudagain Roundabout to A90 end Ellon Dual	25.2
Salt	A90	South	A90 end Ellon Dual to Tipperty	5.0
Travel	A90	South	Tipperty to Balmedie Dual	8.0
Salt	A90	South	Balmedie Dual to Bridge of Don	7.0
Travel	A90	South	Bridge of Don to Haudagain Roundabout	8.6
Salt	A90	South	Haudagian Roundabout to Rubislaw Roundabout	3.4
Salt	A90	North	Rubislaw Roundabout to Haudagain Roundabout	3.4
			Totals	**71.4**

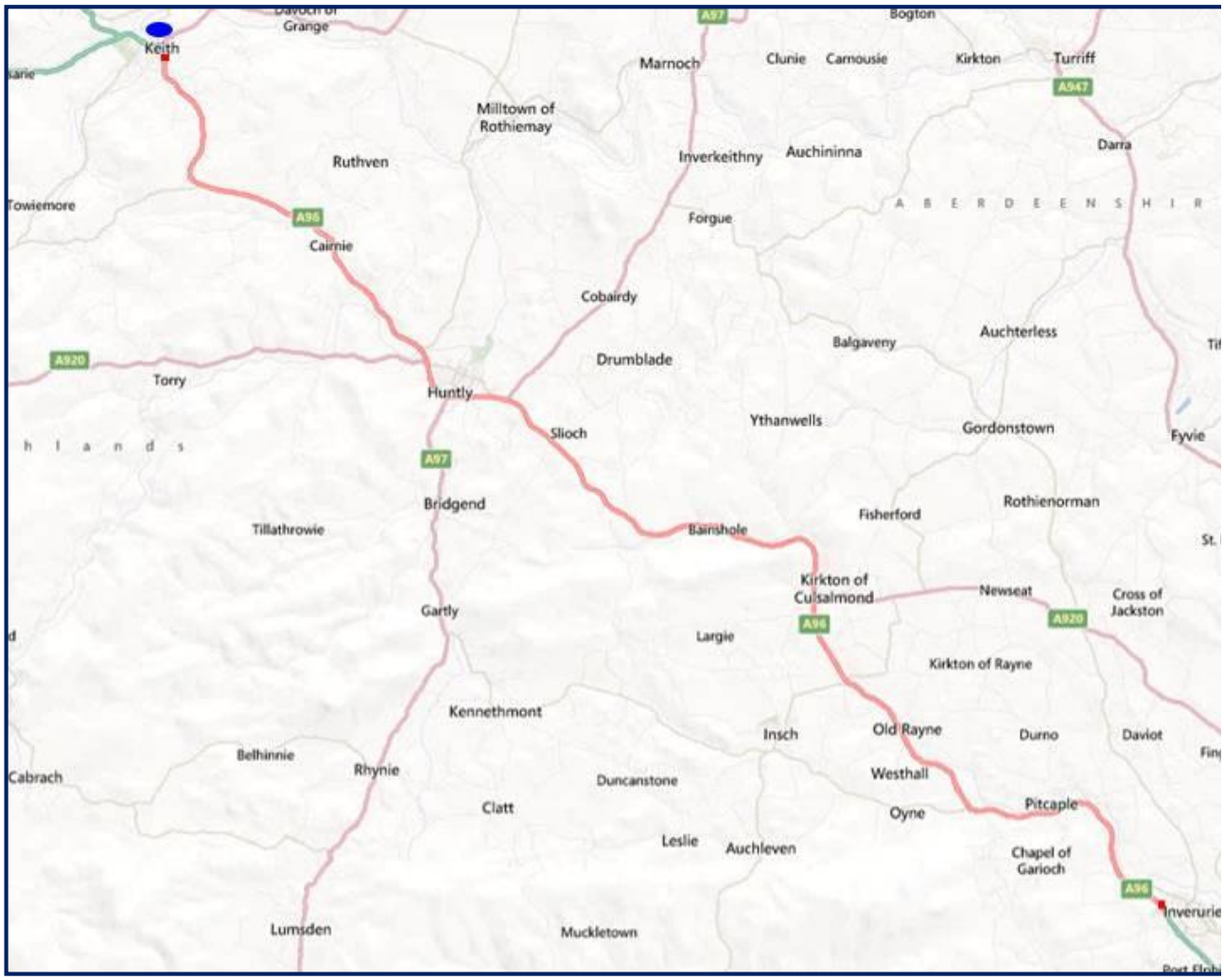
Depot:	Tullos	**Route:**	NE40R3
Spread Rate:	40g/m²	**Route Length:**	41 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	41 km
Depot to Route:	10 km	**Route Time:**	53 mins
Depot to Route:	10 min	**Route Coverage:**	11.48 tonnes
Route to Depot:	15.0 km	**Route Average Width:**	7.0 m
Route to Depot:	18.0 mins	**Route Average Speed:**	48 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Stirlinghill depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A96	East	Blackhall Roundabout to Haudagain Roundabout	20.5
Salt	A96	West	Haudagain Roundabout to Blackhall Roundabout	20.5
			Totals	**41**

Depot:	Keith	**Route:**	NE40R4
Spread Rate:	40g/m²	**Route Length:**	50 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	50 km
Depot to Route:	5 km	**Route Time:**	64 mins
Depot to Route:	5 min	**Route Coverage:**	13 tonnes
Route to Depot:	51.0 km	**Route Average Width:**	6.5 m
Route to Depot:	55.0 mins	**Route Average Speed:**	48 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

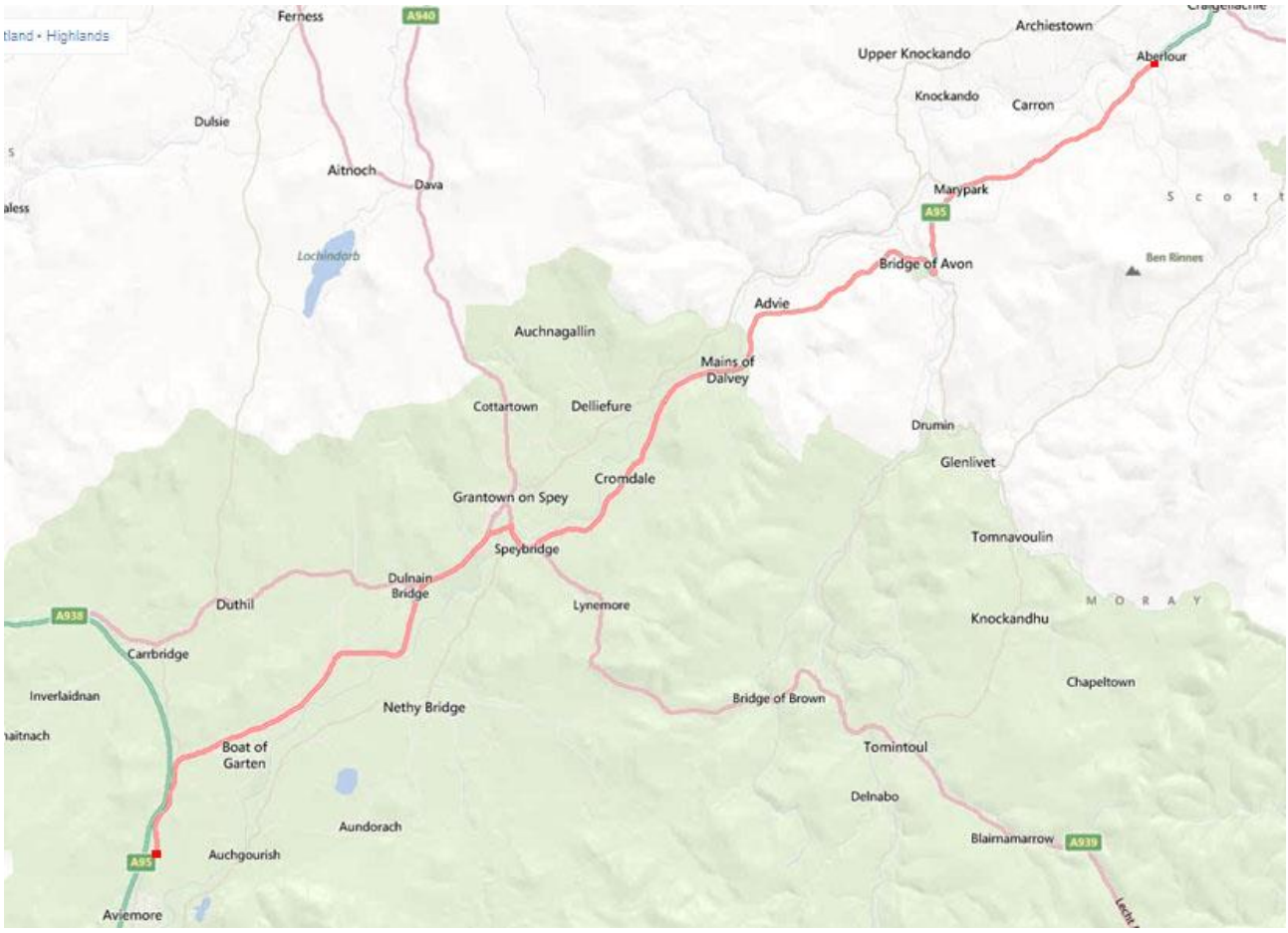
Operation	Route	Direction	Route Description	Distance (km)	
Salt	A96	East	A95/A96 jcn to Blackhall Roundabout	50	
			Totals	**50**	

Depot:	Keith	**Route:**	NE40R5
Spread Rate:	40g/m²	**Route Length:**	47 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	47 km
Depot to Route:	24 km	**Route Time:**	59.4 mins
Depot to Route:	24 min	**Route Coverage:**	12.2 tonnes
Route to Depot:	27.0 km	**Route Average Width:**	6.5 m
Route to Depot:	27.0 mins	**Route Average Speed:**	48 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Inverness depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)	
Salt	A96	East	A95 Aberlour to A96 Elgin Dr Grays Roundabout	47	
			Totals	**47**	

Depot:	Keith	**Route:**	NE40R6
Spread Rate:	40g/m²	**Route Length:**	52 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	52 km
Depot to Route:	24 km	**Route Time:**	66 mins
Depot to Route:	24 min	**Route Coverage:**	12.48 tonnes
Route to Depot:	75.0 km	**Route Average Width:**	6.0 m
Route to Depot:	75.0 mins	**Route Average Speed:**	48 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Inverness depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)	
Salt	A96	East	A95 Aberlour to A95 Granish	52	
			Totals	**52**	

Depot	Inverness	**Route:**	NE40R7

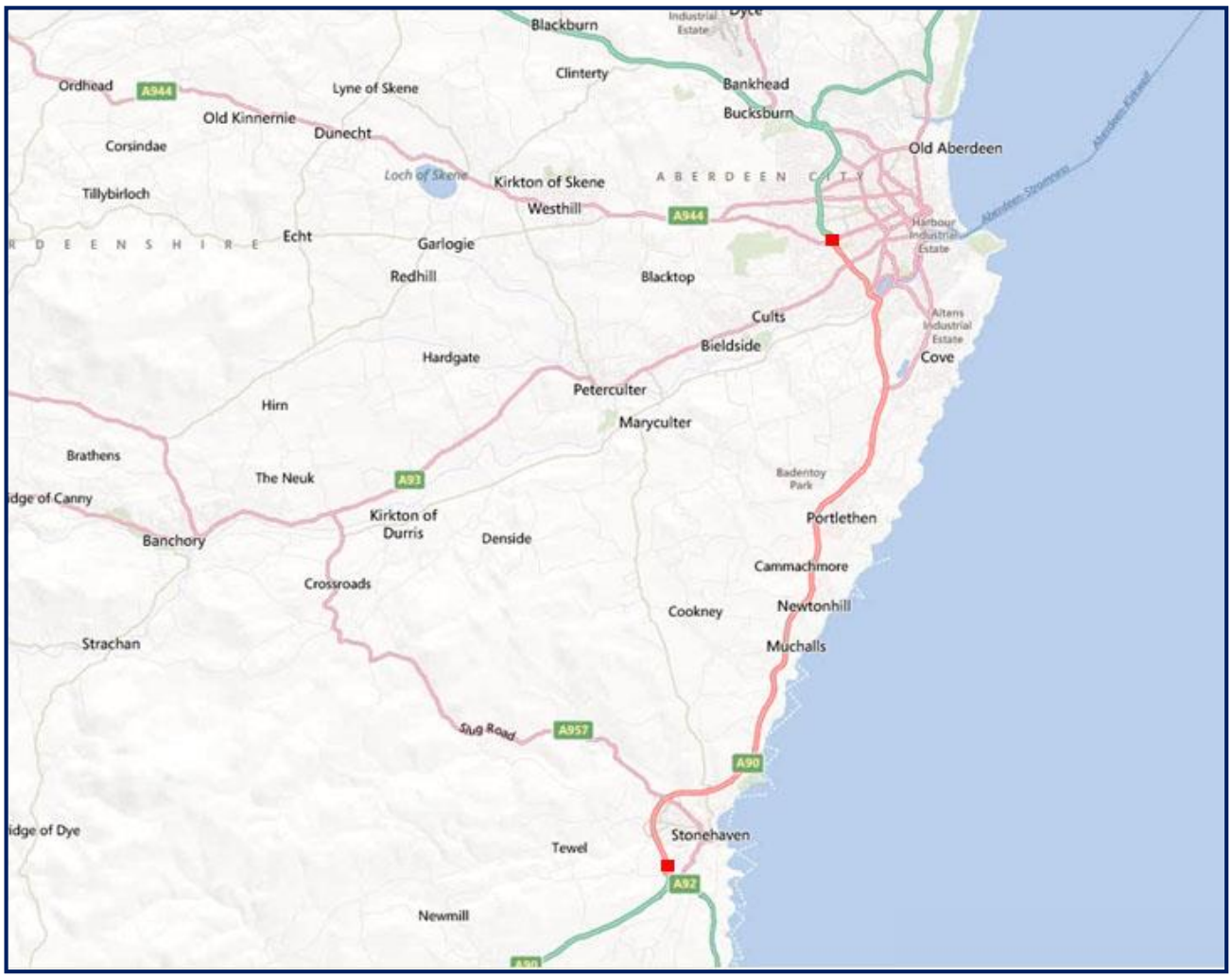
Spread Rate:	40g/m²	**Route Length:**	60 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	58 km
Depot to Route:	3 km	**Route Time:**	75 mins
Depot to Route:	3 min	**Route Coverage:**	15 tonnes
Route to Depot:	60.0 km	**Route Average Width:**	6.5 m
Route to Depot:	60.0 mins	**Route Average Speed:**	48 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Keith depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)	
Salt	A96	East	A96 Raigmore Interchange to A96 Smithton/Culloden Jcn	2.0	
Turn	A96		A96 Smithton/Culloden Jcn		
Salt	A96	West	A96 Smithton/Culloden Jcn to A96 Raigmore Interchange	2.0	
Travel	A96	East	A96 Raigmore Interchange to A96 Smithton/Culloden Jcn	2.0	
Salt	A96	East	A96 Smithton/Culloden Jcn to A96 Elgin Dr Grays R/B	54	
			Totals	**60**	

Depot:	Tullos	**Route:**	NE40R8
Spread Rate:	40g/m²	**Route Length:**	93.0 km

Treatment Type:	Pre-wetted salt	**Route Treated Length:**	49 km
Depot to Route:	10 km	**Route Time:**	87 mins
Depot to Route:	12 min	**Route Coverage:**	13.72 tonnes
Route to Depot:	32.0 km	**Route Average Width:**	7.0 m
Route to Depot:	32.0 mins	**Route Average Speed:**	64 km/h

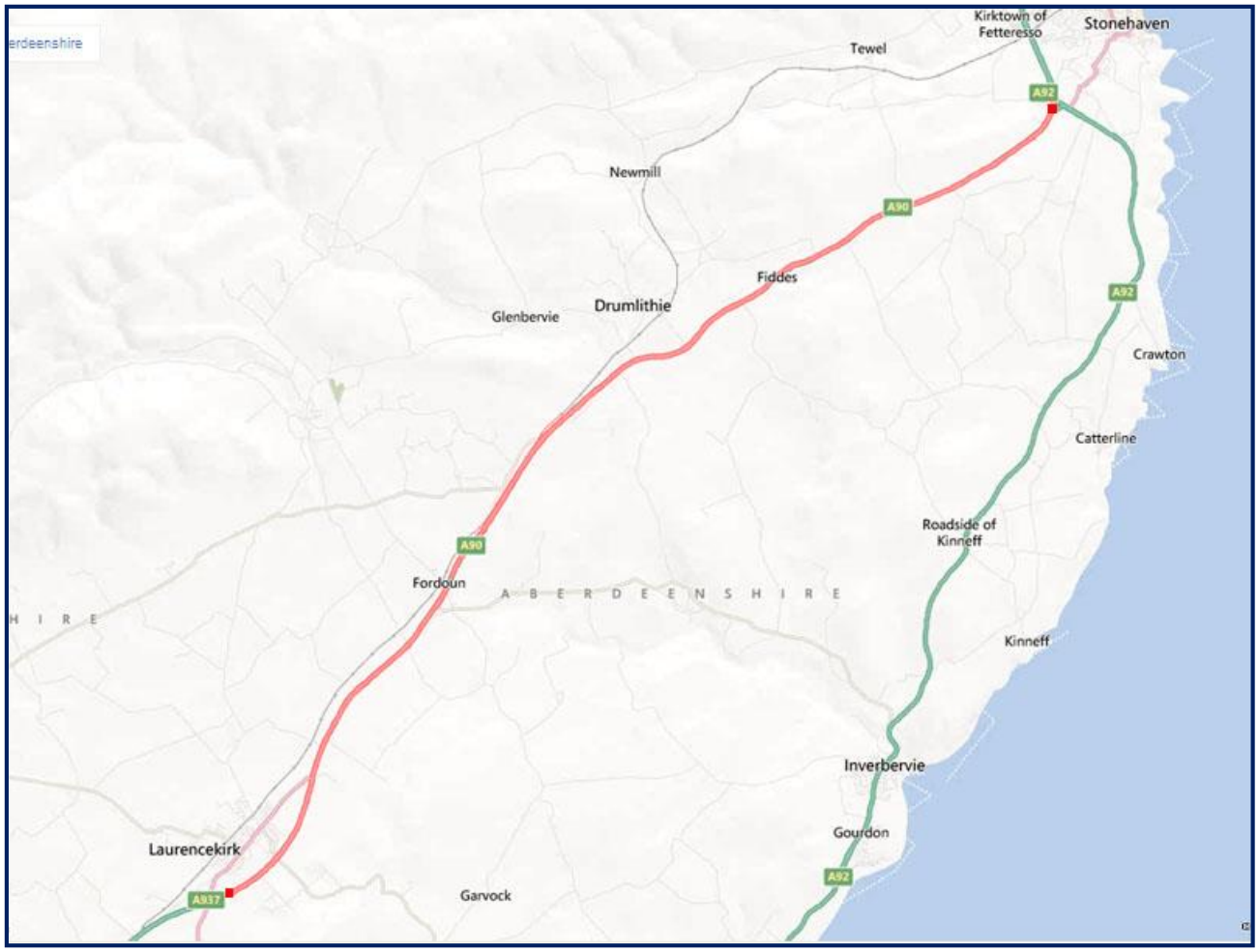


Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Dundee depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	South	Rubislaw Roundabout to Glasslaw I/C	23.6
Salt	A90	North	Glasslaw I/C to Rubislaw Roundabout	23.6
Travel	A90	South	Rubislaw Roundabout to Charlestown SB offslip	2.0
Salt	A90	South	Charlestown SB offslip to Charlestown SB onslip	0.5
Travel	A90	South	Charlestown SB onslip to Hillside SB offslip	1.8
Salt	A90	South	Hillside SB offslip to Hillside SB onslip	0.5
Travel	A90	South	Hillside SB onslip to Portlethen SB offslip	2.0
Salt	A90	South	Portlethen SB offslip to Portlethen SB onslip	0.5
Travel	A90	South	Portlethen SB onslip to Newtonhill SB offslip	3.7
Salt	A90	South	Newtonhill SB offslip to Newtonhill SB onslip	0.5
Travel	A90	South	Newtonhill SB onslip to Glasslaw SB offslip	11
Salt	A90	South	Glasslaw SB offslip to Glasslaw SB onslip	0.5
Turn	A90		Jcn South of Glasslaw	
Travel	A90	North	Jcn South of Glasslaw to Glasslaw NB offslip	1
Salt	A90	North	Glasslaw NB offslip to Glasslaw NB onslip	0.5
Travel	A90	North	Glasslaw NB onslip to Newtonhill NB offslip	11
Salt	A90	North	Newtonhill NB offslip to Newtonhill NB onslip	0.5
Travel	A90	North	Newtonhill NB onslip to Portlethen NB offslip	3.7
Salt	A90	North	Portlethen NB offslip to Portlethen NB onslip	0.5
Travel	A90	North	Portlethen NB onslip to Hillside NB offslip	2.0
Salt	A90	North	Hillside NB offslip to Hillside NB onslip	0.5
Travel	A90	North	Hillside NB onslip to Charlestown NB offslip	1.8
Salt	A90	North	Charlestown NB offslip to Charlestown NB onslip	0.5

Operation	Route	Direction	Route Description	Distance (km)
			Totals	**93**

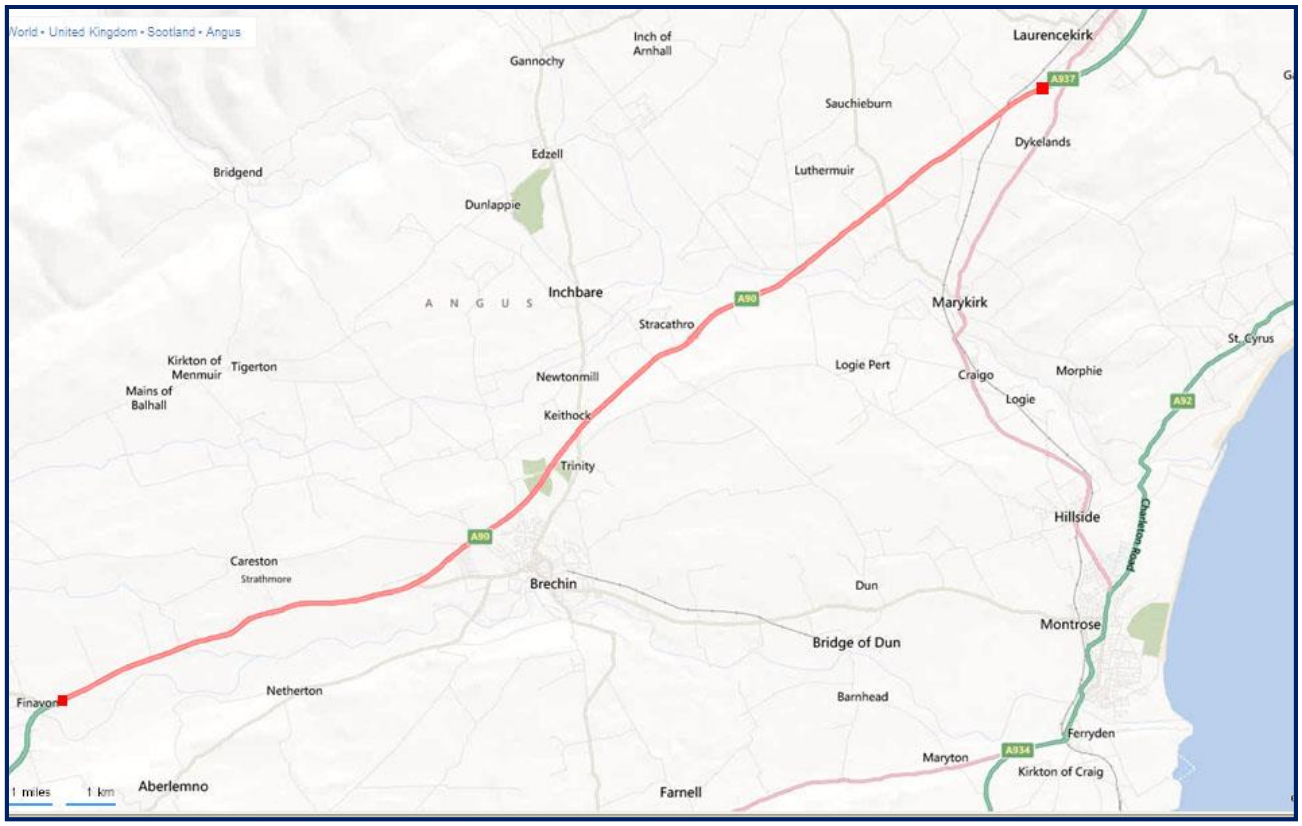
Depot:	Dundee	**Route:**	NE40R9
Spread Rate:	40g/m²	**Route Length:**	56.0 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	48 km
Depot to Route:	8 km	**Route Time:**	52 mins
Depot to Route:	8 min	**Route Coverage:**	13.44 tonnes
Route to Depot:	38.0 km	**Route Average Width:**	7.0 m
Route to Depot:	38.0 mins	**Route Average Speed:**	64 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	A90 B974 Jcn to A90 Glasslaw Jcn NB onslip	26.0
Travel/Turn	A90	North	A90 Glasslaw Jcn NB onslip to Spurryhillock Jcn	2.0
Travel	A90	South	Spurryhillock Jcn to Glasslaw Jcn SB offslip	2.0
Salt	A90	South	Glasslaw Jcn SB offslip to A90 B974 Jcn	26.0
			Totals	**56**

Depot:	Dundee	**Route:**	NE40R10
Spread Rate:	40g/m²	**Route Length:**	91 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	51 km
Depot to Route:	35 km	**Route Time:**	85 mins
Depot to Route:	35 min	**Route Coverage:**	14.2 tonnes
Route to Depot:	38.0 km	**Route Average Width:**	7.0 m
Route to Depot:	38.0 mins	**Route Average Speed:**	64 km/h



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Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	Finavon Jcn to A90 B974 Jcn	25
Travel/Turn	A90	North	A90 B974 Jcn to B9120 Jcn	1.5
Travel	A90	South	B9120 Jcn to A90 B974 Jcn	1.5
Salt	A90	South	A90 B974 Jcn to Finavon Jcn	25
Turn	A90		Parkford Jcn	
Travel	A90	North	Parkford Jcn to St Annes Jcn NB offslip	12.5

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	St Annes Jcn NB offslip to St Annes Jcn NB onslip	0.62
Travel	A90	North	St Annes Jcn NB onslip to Keithock NB offslip	6.0
Salt	A90	North	Keithock Jcn NB offslip to Keithock Jcn NB onslip	1.0
Travel	A90	North	Keithock Jcn NB onslip to A90 Stracathro NB offslip	2.8
Salt	A90	North	A90 Stracathro NB offslip to Stracathro NB onslip	0.5
Travel/Turn	A90	North	Stracathro NB onslip to Northwater Bridge	2.0
Travel	A90	South	to Northwater Bridge to Stracathro SB offslip	2.0
Salt	A90	South	Stracathro SB offslip to Stracathro SB onslip	1.0
Travel	A90	South	Stracathro SB onslip to Keithock SB offslip	2.8
Salt	A90	South	Keithock SB offslip to Keithock SB onslip	0.5
Travel	A90	South	Keithock SB onslip to St Annes SB offslip	6.0
Salt	A90	South	St Annes SB offslip to St Annes SB onslip	0.5
			Totals	**91**

Depot:	Dundee	**Route:**	40R11
Spread Rate:	40g/m²	**Route Length:**	86 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	52 km
Depot to Route:	9 km	**Route Time:**	81 mins
Depot to Route:	10 min	**Route Coverage:**	14.56 tonnes
Route to Depot:	9 km	**Route Average Width:**	7.0 m
Route to Depot:	10 mins	**Route Average Speed:**	64 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Tullos depot by utilising the trunk road and local road network should access be required from an alternative depot.

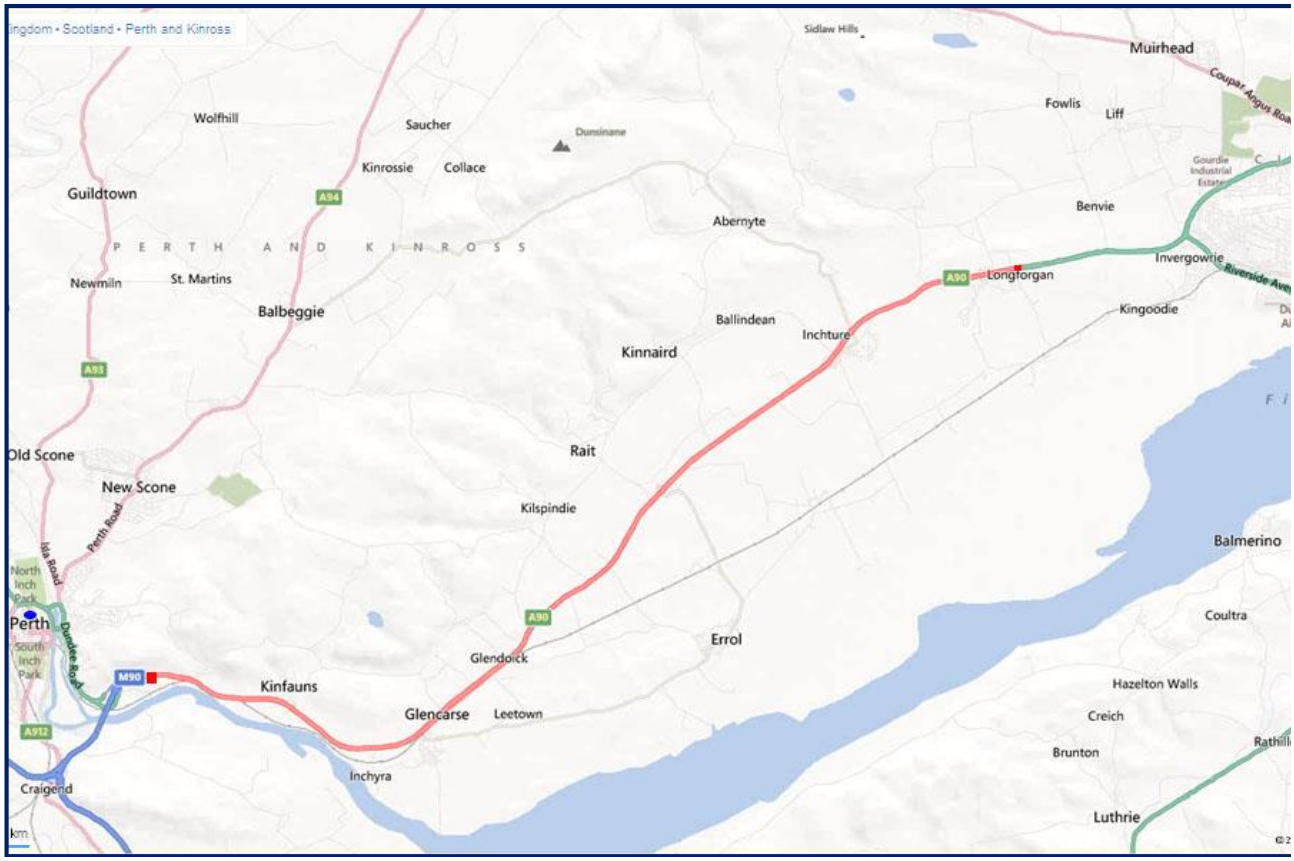
Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	North	Tealing to Finavon Jcn	22
Turn	A90		Finavon Jcn	
Salt	A90	South	Finavon Jcn to Fintry Dr Roundabout	22
Travel	A90	North	Fintry Dr Roundabout to Gateside NB offslip	10.0
Salt	A90	North	Gateside NB offslip to Gateside NB onslip	0.5
Travel	A90	North	Gateside NB onslip to Douglastown NB offslip	1.0
Salt	A90	North	Douglastown NB offslip to Douglastown NB onslip	1.0
Travel	A90	North	Douglastown NB onslip to Glamis NB offslip	4.0
Salt	A90	North	Glamis NB offslip to Glamis NB onslip	0.5
Travel	A90	North	Glamis NB onslip to Kirrie NB offslip	2.2
Salt	A90	North	Kirrie NB offslip to Kirrie NB onslip	0.5
Travel/Turn	A90	North	Kirrie NB onslip to Parkford Jcn	5.0
Travel	A90	South	Parkford Jcn to Kirrie SB offslip	5.0
Salt	A90	South	Kirrie SB offslip to Kirrie SB onslip	0.5
Travel	A90	South	Kirrie SB onslip to Glamis SB offslip	2.2
Salt	A90	South	Glamis SB offslip to Glamis SB onslip	0.5
Travel	A90	South	Glamis SB onslip to Douglastown SB offslip	4.0
Salt	A90	South	Douglastown SB offslip to Douglastown SB onslip	1.0
Travel	A90	South	Douglastown SB onslip to Gateside SB offslip	1.0
Salt	A90	South	Gateside SB offslip to Gateside SB onslip	0.5
			Totals	**86**

Depot:	Dundee	**Route:**	40R12
Spread Rate:	40g/m²	**Route Length:**	58.0 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	47 km
Depot to Route:	9 km	**Route Time:**	57.0 mins
Depot to Route:	10 min	**Route Coverage:**	13.16 tonnes
Route to Depot:	12 km	**Route Average Width:**	7.0 m
Route to Depot:	12 mins	**Route Average Speed:**	64 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Perth depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A92	South	A92 Scott Fyffe R/B to Discovery Quay Jcn	3.0
Turn	A90		Discovery Quay Jcn	
Salt	A92/A972/A90	West	Discovery Quay Jcn to Longforgan WB offslip	14.3
Salt	A90		Longforgan WB offslip to Longforgan EB onslip	1.0
Salt	A90/A972	East	Longforgan EB onslip to A92 Scott Fyffe R/B	14
Travel	A972	West	A92 Scott Fyffe R/B to Forfar Rd Jcn	2.0
Salt	A90	North	Forfar Rd Jcn to Tealing	6
Salt	A90	South	Tealing to Forfar Rd Jcn	6
Travel	A90	West	Forfar Rd Jcn to Kings Cross WB offslip	2.5
Salt	A90	West	Kings Cross WB offslip to Kings Cross WB onslip	0.5
Travel	A90	West	Kings Cross WB onslip to Coupar Angus WB offslip	1.0
Salt	A90	West	Coupar Angus WB offslip to Coupar Angus WB onslip	0.5
Travel	A90	West	Coupar Angus WB onslip to Myrekirk R/b turn	2.0
Travel	A90	East	Myrekirk R/b to Coupar Angus EB offslip	2.0
Salt	A90	East	Coupar Angus EB offslip to Coupar Angus EB onslip	1.0
Travel	A90	East	Coupar Angus EB onslip to Kings Cross EB offslip	1.0
Salt	A90	East	Kings Cross EB offslip to Kings Cross EB onslip	1.0
			Totals	**58**

Depot:	Perth	**Route:**	40R13
Spread Rate:	40g/m²	**Route Length:**	121.5 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	49 km
Depot to Route:	10 km	**Route Time:**	113 mins
Depot to Route:	10 min	**Route Coverage:**	13.7 tonnes
Route to Depot:	12 km	**Route Average Width:**	7.0 m
Route to Depot:	12 mins	**Route Average Speed:**	60 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Dundee depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	East	Tollhouse to Longforgan EB onslip	20.8
Travel/Turn	A90	East	Longforgan EB onslip to Swallow R/B	2.5
Travel	A90	West	Swallow R/B to Longforgan WB offslip	2.5
Salt	A92	South	Longforgan WB offslip to North End Friarton Br	20
Travel/Turn	M90	South	North End Friarton Br to Br of Earn I/C	5.0
Travel	M90	North	Br of Earn I/C to Craigend Broxden offslip	3.0
Salt	M90	North	Craigend Broxden offslip to merge with southern bypass	1.0
Travel	M90	North	merge with southern bypass to Broxden	4.0
Travel	M90	South	Broxden to North End Friarton Br offslip	6.0
Salt	A90	East	North End Friarton Br offslip to End Dundee Road onslip	0.5
Travel	A90	East	End Dundee Road onslip to Glendoik EB offslip	9.0
Salt	A90	East	Glendoik EB offslip to Glendoik EB onslip	0.5
Travel	A90	East	Glendoik EB onslip to Inchmichael EB offslip	4.5
Salt	A90	East	Inchmichael EB offslip to Inchmichael EB onslip	1.0
Travel	A90	East	Inchmichael WB onslip to Inchture EB offslip	4.0
Salt	A90	East	Inchture EB offslip to Inchture EB onslip	1.0
Travel	A90	East	Inchture EB onslip to Longforgan EB offslip	2.0
Salt	A90	East/West	Longforgan EB offslip to Longforgan WB offslip	1.0
Travel	A90	West	Longforgan WB offslip to Inchture WB offslip	2.0
Salt	A90	West	Inchture WB offslip to Inchture WB onslip	1.0
Travel	A90	West	Inchture WB onslip to Inchmichael WB offslip	4.0
Salt	A90	West	Inchmichael WB offslip to Inchmichael WB onslip	1.0
Travel	A90	West	Inchmichael WB onslip to Glendoik WB offslip	4.5

Operation	Route	Direction	Route Description	Distance (km)
Salt	A90	West	Glendoik WB offslip to Glendoik WB onslip	0.5
Travel	A90	West	Glendoik WB onslip to Br of Earn I/C	15.0
Travel	M90	East	Br of Earn I/C to Craigend Edinburgh rd offslip	3.0
Salt	M90	East	Craigend Edinburgh rd offslip to End Edinburgh rd offslip	0.5
Turn			Friarton Road	
Travel	U/C	South	Friarton Road to start Scoonieburn slip	0.5
Salt	M90	South	start Scoonieburn slip to end scoonieburnslip	1.0
			Totals	**121.5**

Depot:	Lochgelly	**Route:**	40R14
Spread Rate:	40g/m²	**Route Length:**	63 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	48 km
Depot to Route:	12 km	**Route Time:**	69 mins
Depot to Route:	12 min	**Route Coverage:**	13.44 tonnes
Route to Depot:	52 km	**Route Average Width:**	7.0 m
Route to Depot:	60 mins	**Route Average Speed:**	55 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Dundee depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A92	North	A92 Redhouse Roundabout to New Inn Roundabout	10
Salt	A92	South	New Inn Roundabout to South Balfarg Jcn	2
Travel	A92	South	South Balfarg Jcn to Preston Roundabout	3.0
Salt	A92	South	Preston Roundabout to Redhouse Roundabout	6.0
Travel	A92	North	A92 Redhouse Roundabout to New Inn Roundabout	10.0
Salt	A92	North	New Inn Roundabout to Tay Bridge Roundabout	30
Salt	A92	South	Tay Bridge Roundabout to Forgan Roundabout	2
			Totals	**63**

Depot:	Perth	**Route:**	40R15
Spread Rate:	40g/m²	**Route Length:**	86 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	47 km
Depot to Route:	25 km	**Route Time:**	81 mins
Depot to Route:	25 min	**Route Coverage:**	13.16 tonnes
Route to Depot:	25 km	**Route Average Width:**	7.0 m
Route to Depot:	25 mins	**Route Average Speed:**	64 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Lochgelly depot by utilising the trunk road and local road network should access be required from an alternative depot.

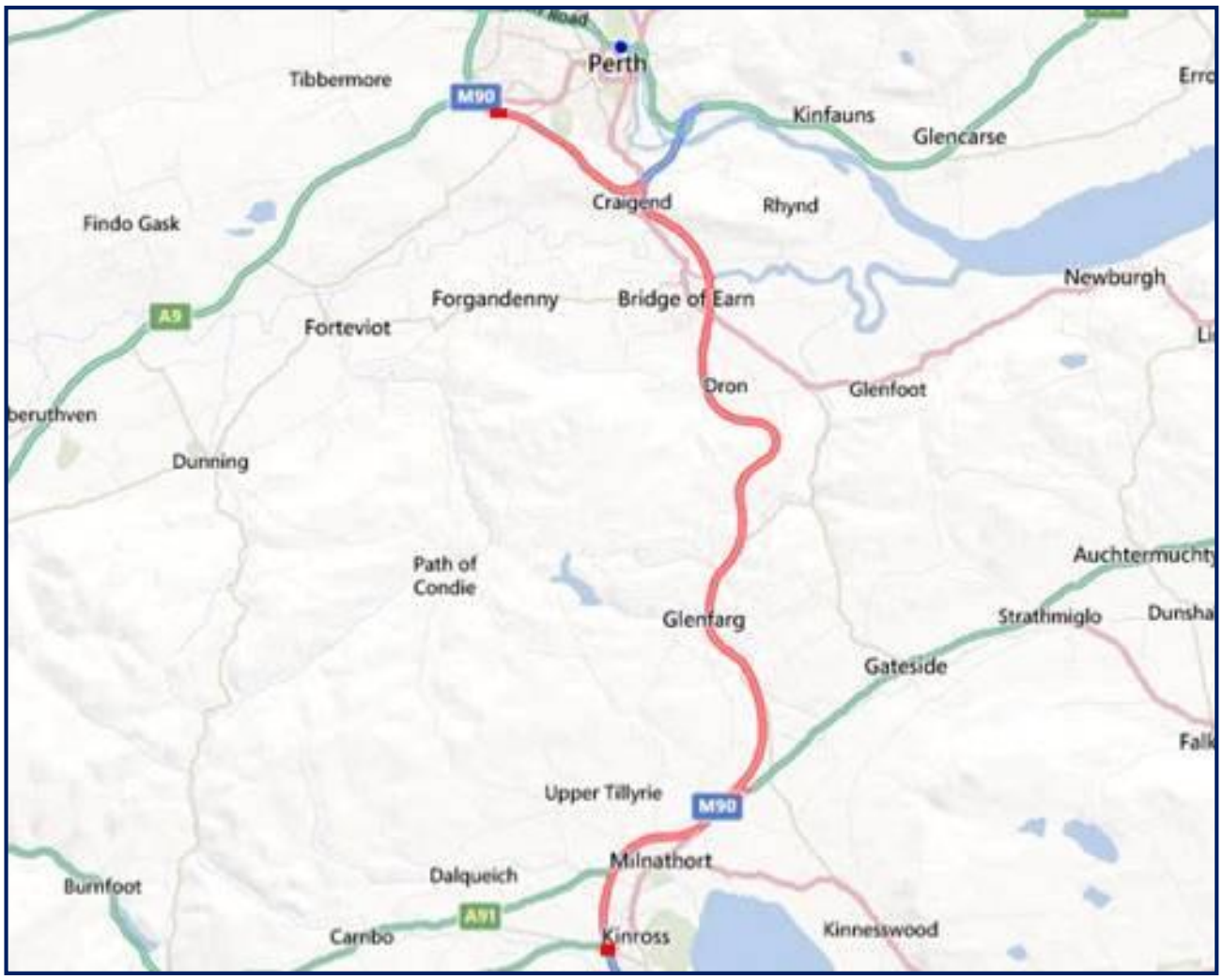
Operation	Route	Direction	Route Description	Distance (km)
Salt	A9	South	Loaninghead SB offslip to Keir Roundabout	19
Salt	A9	North	Keir Roundabout to Auchterarder South Jcn	19.5
Turn	A9		Auchterarder South Jcn	
Travel	A9	South	Auchterarder South Jcn to start Loanighead SB onslip	1.5
Salt	A9	South	start Loanighead SB onslip to end Loanighead SB onslip	1.0
Travel	A9	South	end Loanighead SB onslip to Queen Vic SB offslip	15
Salt	A9	South	Queen Vic SB offslip to Queen Vic SB onslip	0.5
Travel	A9	South	Queen Vic SB onslip to A820 SB offslip	2.5
Salt	A9	South	A820 SB offslip to A820 SB onslip	1.0
Travel	A9	South	A820 SB onslip to Keir Roundabout	2.0
Travel	A9	North	Keir Roundabout to A820 NB offslip	2.0
Salt	A9	North	A820 NB offslip to A820 NB onslip	1.0
Travel	A9	North	A820 NB onslip to Queen Vic NB offslip	2.5
Salt	A9	North	Queen Vic NB offslip to Queen Vic NB onslip	0.5
Travel	A9	North	Queen Vic NB onslip to Loaninghead NB offslip	15
Salt	A9	North	Loaninghead NB offslip to End Loaninghead NB offslip	0.5
			Totals	**86**

Depot:	Perth	**Route:**	40R16
Spread Rate:	40g/m²	**Route Length:**	59 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	48 km
Depot to Route:	1 km	**Route Time:**	60 mins
Depot to Route:	1 min	**Route Coverage:**	13.44 tonnes
Route to Depot:	1 km	**Route Average Width:**	7.0 m
Route to Depot:	1 mins	**Route Average Speed:**	60 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Lochgelly depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A9	South	Inveralmond Roundabout to End Loaninghead SB offslip	26
Salt	A9	North	End Loaninghead SB offslip to Inveralmond Roundabout	26
Turn	A9		Inveralmond Roundabout	
Travel	A9	South	Inveralmond Roundabout to A85 SB offslip	1.0
Salt	A9	South	A85 SB offslip to A85 SB onslip	1.0
Travel	A9	South	A85 SB onslip to Broxden Roundabout	2.0
Travel	A9	North	Broxden Roundabout to A85 NB offslip	2.0
Salt	A9	North	A85 NB offslip to A85 NB offslip	1.0
			Totals	**59**

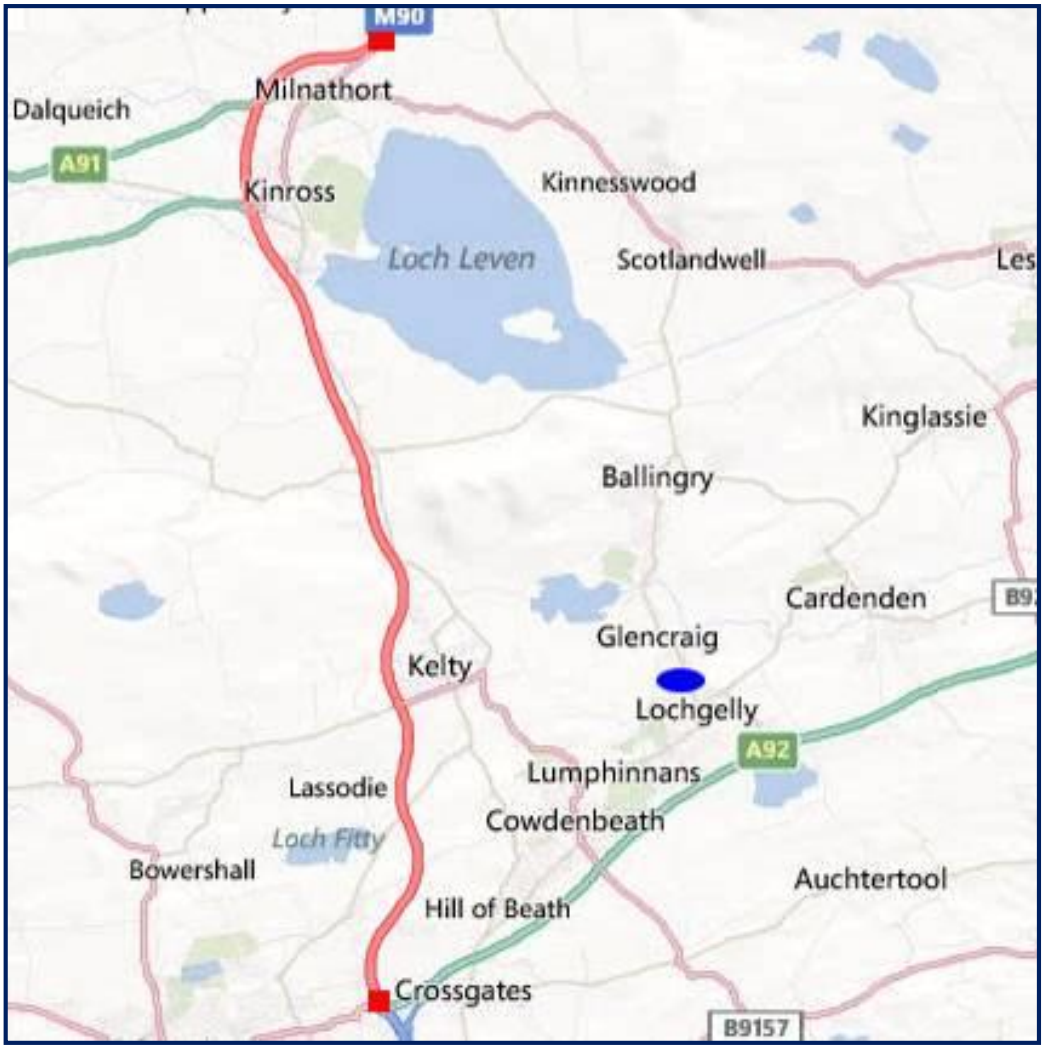
Depot:	Perth	**Route:**	40R17
Spread Rate:	40g/m²	**Route Length:**	77.5 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	40 km
Depot to Route:	5 km	**Route Time:**	72 mins
Depot to Route:	5 min	**Route Coverage:**	14.4 tonnes
Route to Depot:	28 km	**Route Average Width:**	9.0 m
Route to Depot:	28 mins	**Route Average Speed:**	64 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Lochgelly depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	M90	South	Broxden Roundabout to End Milnathort SB offslip	25.5
Salt	M90	North	End Milnathort SB offslip to End Milnathort NB onslip	1.0
Travel	M90	North	End Milnathort NB onslip to Br of Earn NB offslip	16.0
Salt	M90	North	Br of Earn NB offslip to Br of Earn NB onslip	1.0
Travel	M90	North	Br of Earn NB onslip to start NB offslip to Broxden	3.0
Salt	M90	North	start NB offslip to Broxden to North End Friarton Br offslip	2.0
Salt	M90	North	North End Friarton Br offslip around Barnhill	1.0
Salt	M90	South	Onslip SB to Friarton Br to offslip Craigend Mid-deck	2.0
Salt	M90	North	offslip Craigend Mid-deck to Broxden Roundabout	4.5
Travel	M90	South	Broxden Roundabout to Offslip to Friarton EB	4.0
Salt	M90	East	Offslip to Friarton EB to End offslip to Friarton EB	1.0
Travel	M90	East	End offslip to Friarton EB to A90 Kinfauns EB offslip	5.0
Salt	A90	East	A90 Kinfauns EB offslip to A90 Kinfauns EB onslip	0.5
Travel/Turn			A90 Kinfauns EB onslip to Glencarse I/C	3.5
Travel	A90	West	Glencarse I/C to Kinfauns WB offslip	3.5
Salt	A90	West	Kinfauns WB offslip to Kinfauns WB onslip	0.5
Travel	A90	West	Kinfauns WB onslip to Barnhill WB offslip	3.0
Salt	A90	West	Barnhill WB offslip to Toll house	1.0
			Totals	**77.5**

Depot:	Lochgelly	**Route:**	40R18
Spread Rate:	40g/m²	**Route Length:**	84.1 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	45 km
Depot to Route:	8 km	**Route Time:**	79 mins
Depot to Route:	8 min	**Route Coverage:**	12.6 tonnes
Route to Depot:	12 km	**Route Average Width:**	7.0 m
Route to Depot:	12 mins	**Route Average Speed:**	64 km/h



Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Perth depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A92	South	Start onslip J2 A to End onslip J2A	1.1
Travel/Turn	M90	South	End onslip J2A to Admiralty Roundabout	5.0
Travel	M90	North	Admiralty Roundabout to Halbeath NB offslip	5.0
Salt	M90	North	Halbeath NB offslip to Arlary NBoffslip	20
Salt	A91		Arlary NBoffslip to Arlary SB onslip	2.0
Salt	M90	South	Arlary SB onslip to Halbeath SB offslip	20
Salt	M90		Halbeath SB offslip to Halbeath NB onslip including roundabout	1.5
Travel	M90	North	Halbeath NB onslip to Kelty NB offslip	5.0
Salt	M90	North	Kelty NB offslip to Kelty NB onslip	1.0
Travel	M90	North	Kelty NB onslip to Gairneybridge NB offslip	4.0
Salt	M90	North	Gairneybridge NB offslip to Gairneybridge NB onslip	1.0
Travel	M90	North	Gairneybridge NB onslip to Kinross NB offslip	4.0
Salt	M90	North	Kinross NB offslip to Kinross NB onslip	1.0
Travel/Turn	M90	North	Kinross NB onslip to Arlary I/C	1.0
Travel	M90	South	Arlary I/C to Kinross SB offslip	1.5
Salt	M90	South	Kinross SB offslip to Kinross SB onslip	1.0
Travel	M90	South	Kinross SB onslip to Gairneybridge SB offslip	4.0
Salt	M90	South	Gairneybridge SB offslip to Gairneybridge SB onslip	1.0
Travel	M90	South	Gairneybridge SB onslip to Kelty SB offslip	4.0
Salt	M90	South	Kelty SB offslip to Kelty SB onslip	1.0
			Totals	**84.1**

Depot:	Lochgelly	**Route:**	40R19
Spread Rate:	40g/m²	**Route Length:**	73.5 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	42 km
Depot to Route:	5 km	**Route Time:**	69 mins
Depot to Route:	5 min	**Route Coverage:**	11.76 tonnes
Route to Depot:	14 km	**Route Average Width:**	7.5 m
Route to Depot:	14 mins	**Route Average Speed:**	60 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Perth depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	A92	West	Lochgelly WB onslip to A92 Halbeath Roundabout (include crossgates roundabout)	9.0
Salt	A92	East	A92 Halbeath Roundabout to Redhouse Roundabout	18.0
Salt	A92	West	Redhouse Roundabout to Lochgelly WB onslip	10
Travel	A92	West	Lochgelly WB onslip to Cowdenbeath WB offslip	3.0
Salt	A92	West	Cowdenbeath WB offslip to Cowdenbeath WB onslip	1.0
Travel/Turn			Cowdenbeath WB onslip to Crossgates I/C	3.5
Travel	A92	East	Crossgates I/C to Cowdenbeath EB offslip	3.5
Salt	A92	East	Cowdenbeath EB offslip to Cowdenbeath EB onslip	1.0
Travel	A92	East	Cowdenbeath EB onslip to Lochgelly EB offslip	3.0
Salt	A92	East	Lochgelly EB offslip to Lochgelly EB onslip	1.0
Travel	A92	East	Lochgelly EB onslip to Chapel EB offslip	5.0
Salt	A92	East	Chapel EB offslip to Chapel EB onslip	1.0
Travel	A92	East	Chapel EB onslip to redhouse Roundabout	4.0
Travel	A92	West	redhouse Roundabout to Chapel WB offslip	4.0
Salt	A92	West	Chapel WB offslip to Chapel WB onslip	1.0
Travel	A92	West	Chapel WB onslip to Lochgelly WB offslip	5.0
Salt	A92	West	Lochgelly WB offslip End lochgelly WB offslip	0.5
			Totals	**73.5**

Depot:	Perth	**Route:**	40R20
Spread Rate:	40g/m²	**Route Length:**	38 km
Treatment Type:	Pre-wetted salt	**Route Treated Length:**	22 km
Depot to Route:	10 km	**Route Time:**	36 mins
Depot to Route:	10 min	**Route Coverage:**	8.4 tonnes
Route to Depot:	28 km	**Route Average Width:**	9.5 m
Route to Depot:	28 mins	**Route Average Speed:**	64 km/h

Alternative Access: In the event of any blockage on the trunk road network that would require alternative access the frontline vehicle will treat to the point of the blockage and then use the local road network to reach the remainder of the route. A vehicle will be provided from the Lochgelly depot by utilising the trunk road and local road network should access be required from an alternative depot.

Operation	Route	Direction	Route Description	Distance (km)
Salt	M90	South	Br of Earn SB offslip to Br of Earn SB onslip	1.0
Travel/Turn	M90	South	Br of Earn SB onslip to Milnathort I/C	16.0
Salt	M90	North	Milnathort NB onslip to Craigend I/C	21.0

Operation	Route	Direction	Route Description	Distance (km)
			Total	38

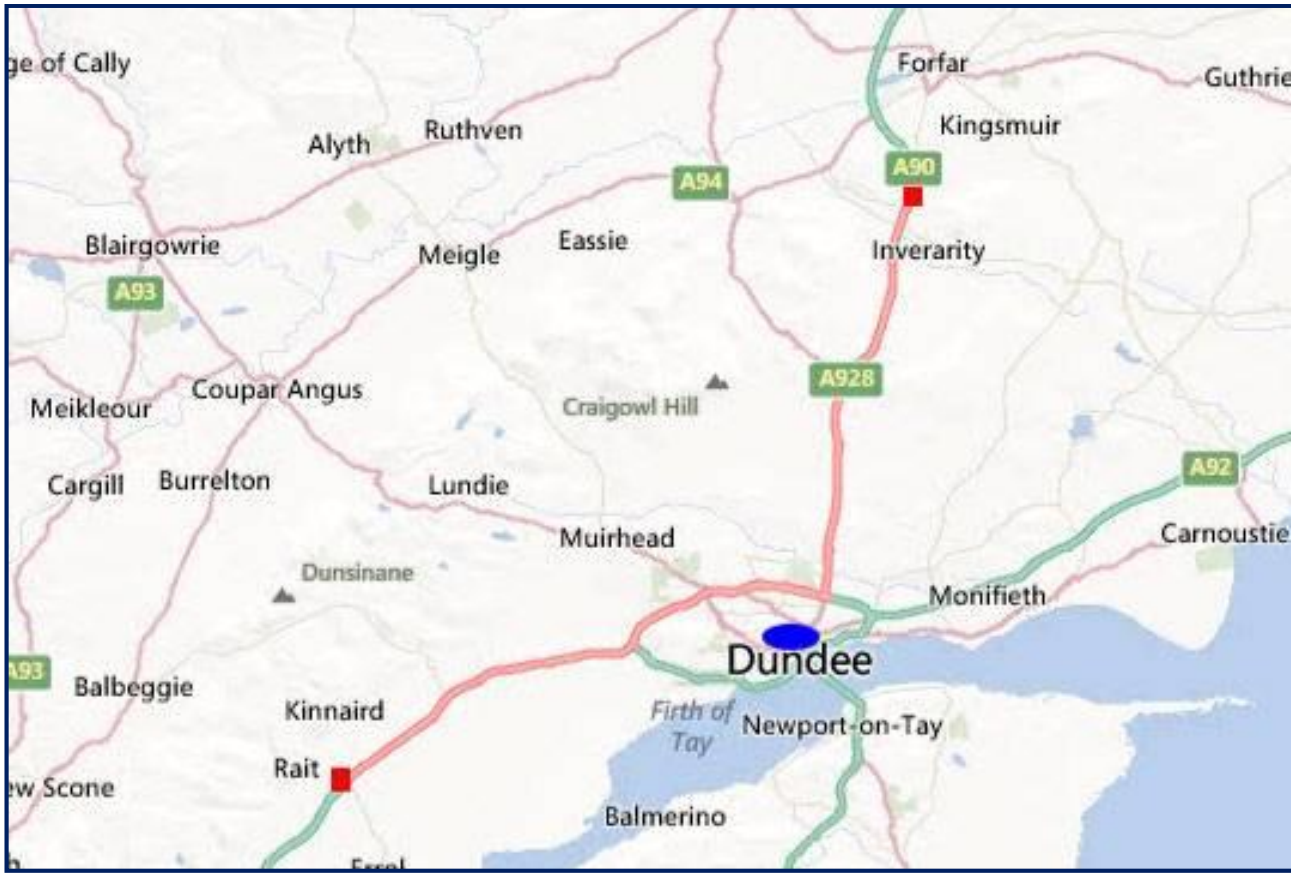
Table 7.2/J/3 - Winter Patrol Routes

Depot:	Lochgelly	**Route:**	A1
Route Length:	75.64	**Route Time:**	60 mins
Depot to Route:	10 Km	**Route Average Speed:**	75.64
Depot to Route:	8 mins		
Route to Depot:	10 Km		
Route to Depot:	8 mins		

Depot:	Perth	**Route:**	A2
Route Length:	70	**Route Time:**	60 mins
Depot to Route:	10 Km	**Route Average Speed:**	70
Depot to Route:	10 mins		
Route to Depot:	10 Km		
Route to Depot:	10 mins		

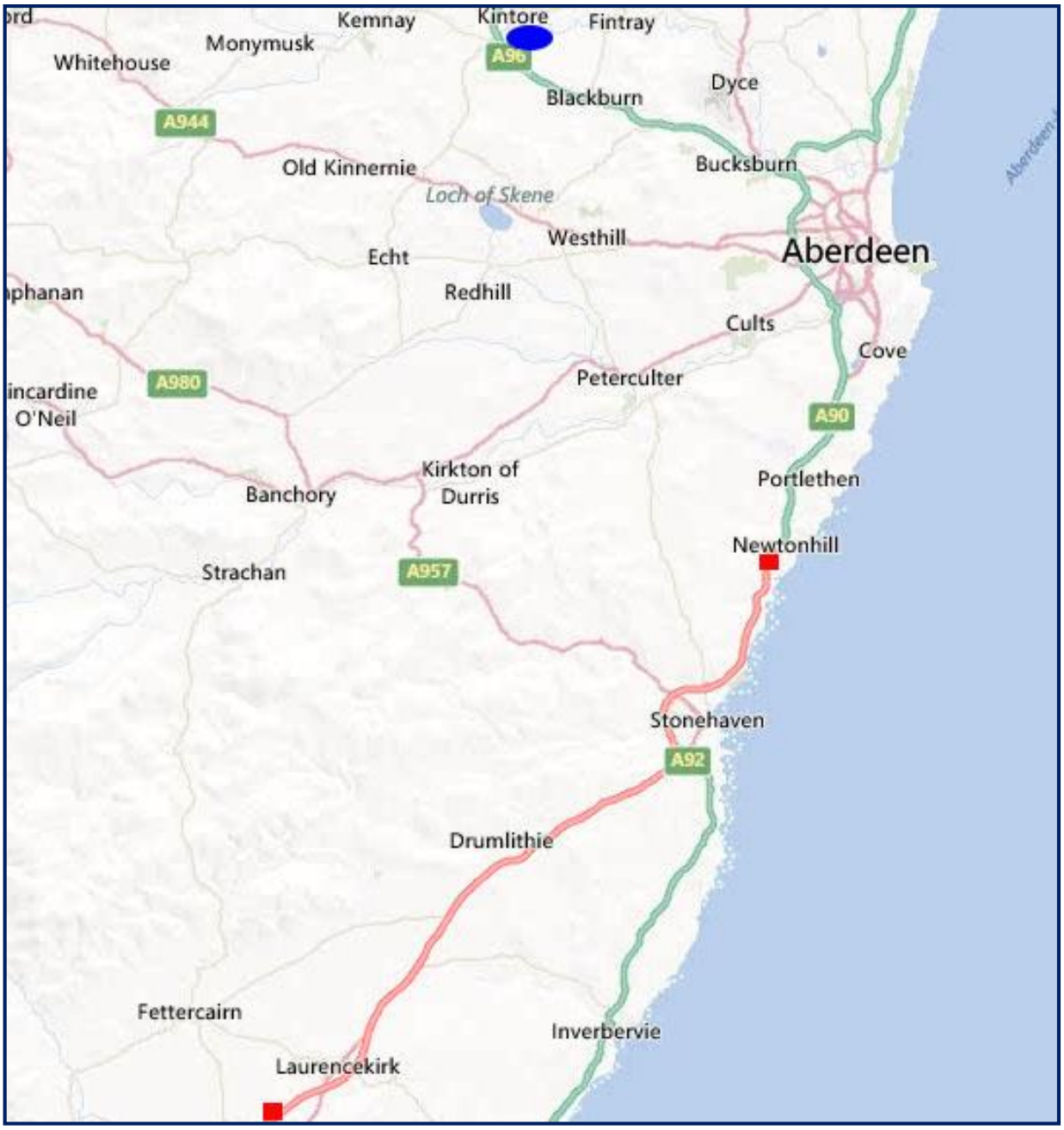
Depot:	Perth	**Route:**	A3
Route Length:	68	**Route Time:**	60 mins
Depot to Route:	10 Km	**Route Average Speed:**	68
Depot to Route:	10 mins		
Route to Depot:	10 Km		
Route to Depot:	10 mins		

Depot:	Dundee	**Route:**	A4
Route Length:	68	**Route Time:**	60 mins
Depot to Route:	12 Km	**Route Average Speed:**	68
Depot to Route:	12 mins		
Route to Depot:	12 Km		
Route to Depot:	12 mins		

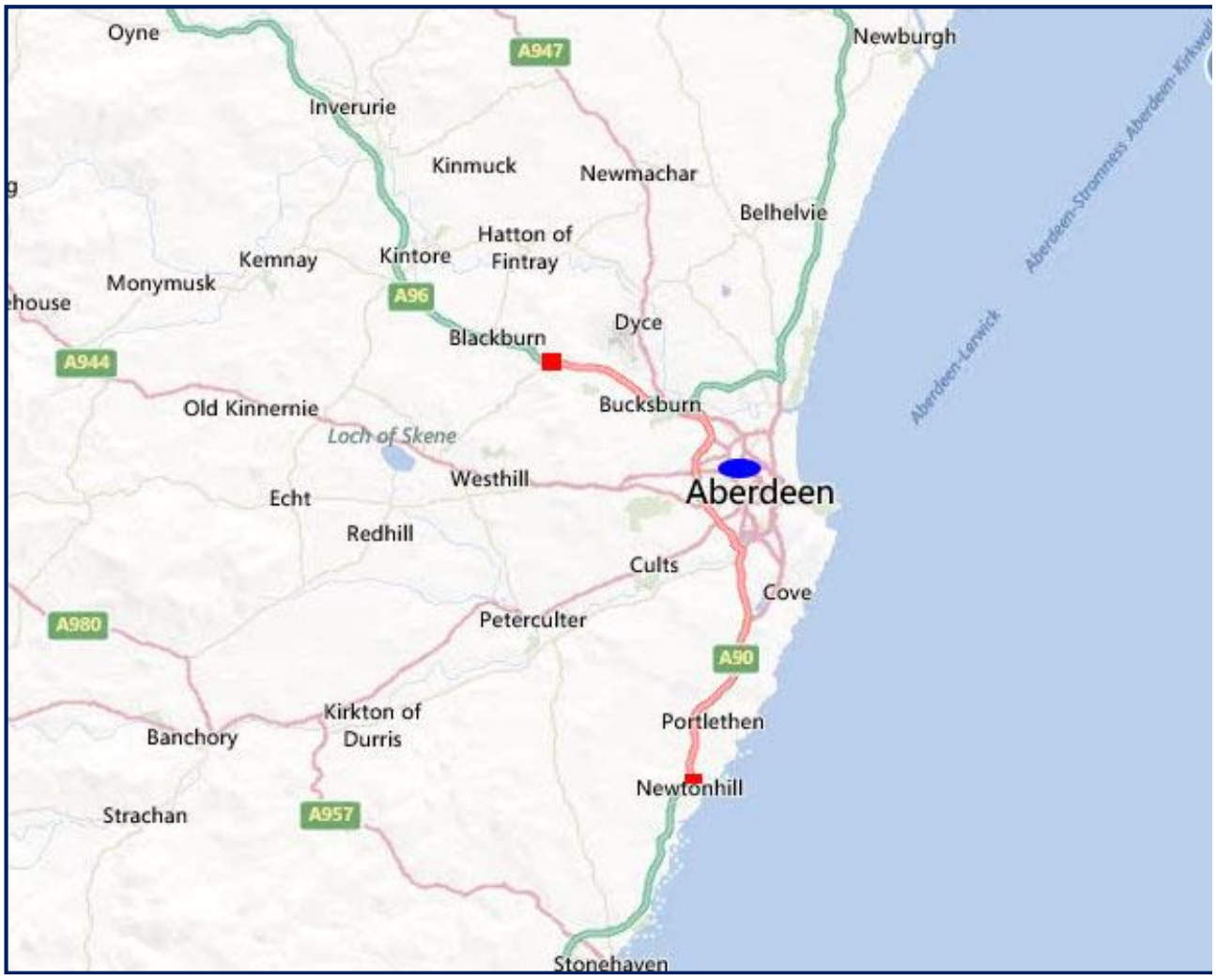


Depot:	Dundee	**Route:**	A5
Route Length:	72	**Route Time:**	60 mins
Depot to Route:	25 Km	**Route Average Speed:**	72
Depot to Route:	30 mins		
Route to Depot:	25 Km		
Route to Depot:	30 mins		

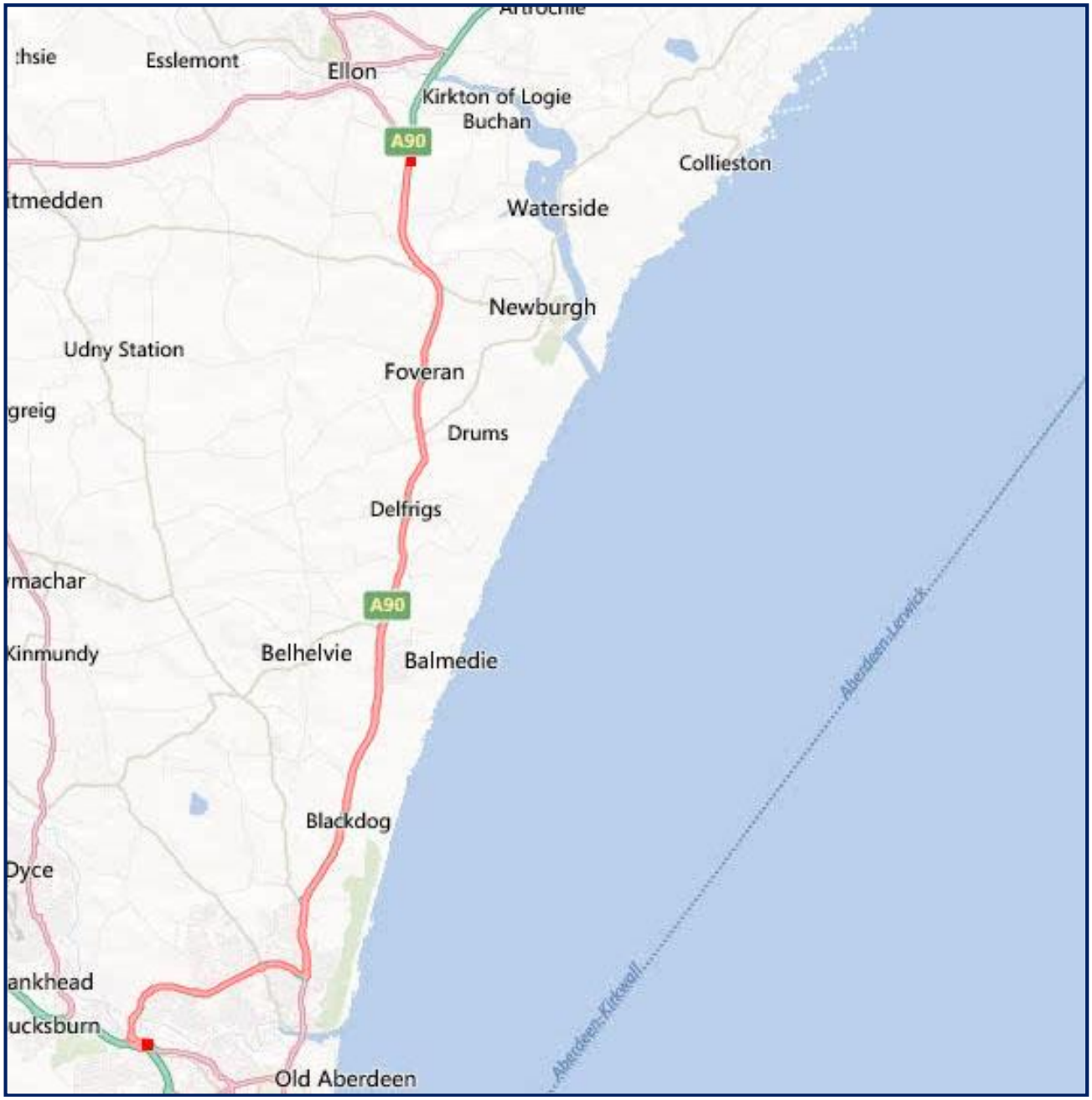
Depot:	Dundee	**Route:**	A6
Route Length:	72	**Route Time:**	60 mins
Depot to Route:	10 Km	**Route Average Speed:**	72
Depot to Route:	10 mins		
Route to Depot:	10 Km		
Route to Depot:	10 mins		



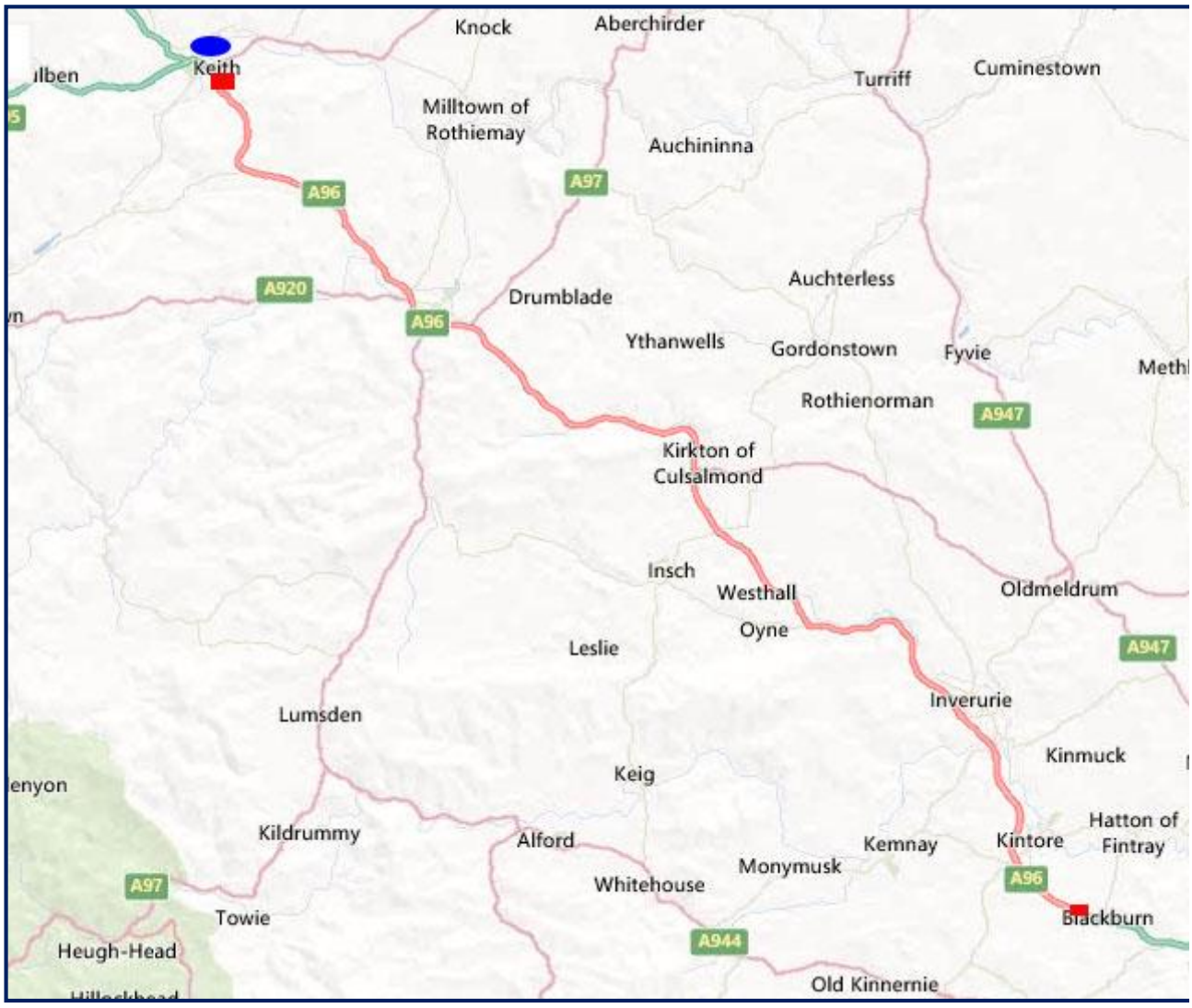
Depot:	Stirlinghill	**Route:**	A7
Route Length:	57	**Route Time:**	60 mins
Depot to Route:	50 Km	**Route Average Speed:**	60
Depot to Route:	50 mins		
Route to Depot:	50 Km		
Route to Depot:	50 mins		



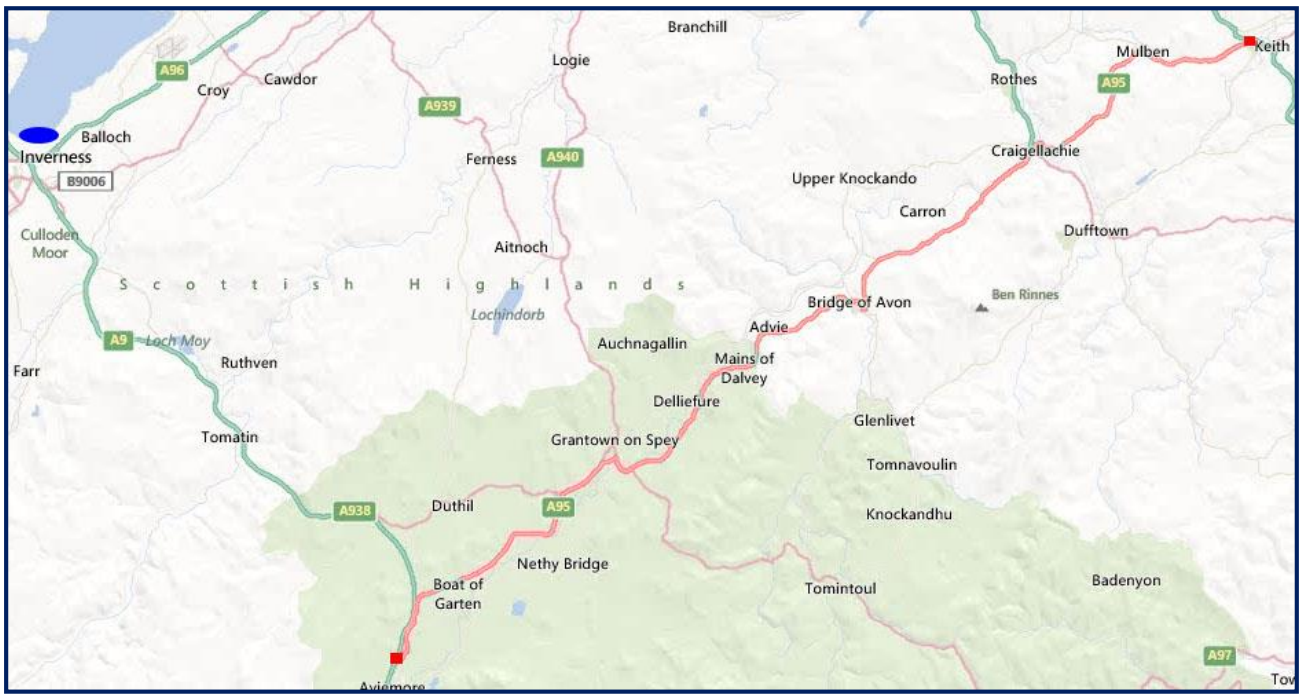
Depot:	Stirlinghill	**Route:**	A8
Route Length:	49	**Route Time:**	60 mins
Depot to Route:	20 Km	**Route Average Speed:**	49
Depot to Route:	25 mins		
Route to Depot:	20 Km		
Route to Depot:	25 mins		



Depot:	Keith	**Route:**	B1
Route Length:	72 Km	**Route Time:**	86 mins
Depot to Route:	1 Km	**Route Average Speed:**	50 km/hr
Depot to Route:	2 mins		
Route to Depot:	72 Km		
Route to Depot:	88 mins		



Depot:	Keith	**Route:**	B2
Route Length:	76 km	**Route Time:**	91 mins
Depot to Route:	3 Km	**Route Average Speed:**	50
Depot to Route:	5 mins		
Route to Depot:	79 Km		
Route to Depot:	95 mins		



Depot:	Inverness	**Route:**	B3
Route Length:	85 Km	**Route Time:**	102 mins
Depot to Route:	3 Km	**Route Average Speed:**	50
Depot to Route:	5 mins		
Route to Depot:	90 Km		
Route to Depot:	108 mins		

APPENDIX WSP 3

Table 7.2/J/7 – Operational Salt Stock Levels

Operating Company	Minimum stock level at start of season (tonnes)
BEAR Scotland – North East	24,000

Table 7.2.J/7 – Operational Salt Stock Levels

De-icing Material (i.e. Dry salt/ABP)	Location	Type (barn/open)	Min (tonnes) 1st Oct
Dry Salt	Perth	Barn	1800
Dry Salt	Lochgelly	Barn	1500
Dry Salt	Dundee	Barn	3000
Dry Salt	Edzell	Barn	600
Dry Salt	Stirlinghill	Barn	600
Dry Salt	Tullos	Barn	1000
Dry Salt	Keith	Barn	4000
Dry Salt	Inverness	Barn	600
Dry Salt	Errol	Covered Storage	12000
		Total	25100

De-icing Material (i.e. Dry salt/ABP)	Location	Type (barn/open)	Min (tonnes) 1st Oct
Dry Salt for Brine	Perth	Covered Storage	90
Dry Salt for Brine	Lochgelly	Covered Storage	60
Dry Salt for Brine	Dundee	Covered Storage	60
Dry Salt for Brine	Edzell	Covered Storage	30
Dry Salt for Brine	Stirlinghill	Covered Storage	30
Dry Salt for Brine	Tullos	Covered Storage	30
Dry Salt for Brine	Keith	Covered Storage	60
Dry Salt for Brine	Inverness	Covered Storage	30
		Total	390

Note – salt for brine will be stored within the same covered structures as the other salt or covered with a tarpaulin.

De-icing Material (i.e. Dry salt/ABP)	Location	Type (barn/open)	Min (tonnes) 1st Oct
Magnesium Chloride	Perth	Intermediate Bulk Containers	6000
Magnesium Chloride	Lochgelly	Intermediate Bulk Containers	4000
Magnesium Chloride	Dundee	Intermediate Bulk Containers	6000
Magnesium Chloride	Edzell	Intermediate Bulk Containers	2000
Magnesium Chloride	Stirlinghill	Intermediate Bulk Containers	2000
Magnesium Chloride	Tullos	Intermediate Bulk Containers	3000
Magnesium Chloride	Keith	Intermediate Bulk Containers	6000
Magnesium Chloride	Inverness	Intermediate Bulk Containers	2000
		Total	31000

NOTE: Alternative de-icer will be replenished when the stock level has fallen to under 15k litres.

Table 7.2/J/8 –Brine Production and Storage

Location	Type (saturator/storage only)	Capacity (L)	Min (L)
Perth	Storage	20,000	15840
	Saturator	2 x 6,800 litres/hour	
Lochgelly	Storage	20,000	10560
	Saturator	2 x 6,800 litres/hour	
Dundee	Storage	22,000	15840
	Saturator	2 x 6,800 litres/hour	
Edzell	Storage	10,000	6,849
	Saturator	3,700 litres/hour	
Keith	Storage	10,000	10560
	Saturator	2 x 6,800 litres/hour	
Inverness	Storage	10,000	5280
	Saturator	3,700 litres/hour	
Tullos	Storage	22000	10560
	Saturator	6,800 litres/hour	
Stirlinghill	Storage	22000	5280
	Saturator	3,700 litres/hour	

APPENDIX WSP4

Table 7.2.J.9 - Front line Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways

Registration number	Depot location	Description	Spreader Size	Type	Vehicle Type
SJ65 FVY	Dundee	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SJ65 FVU	Dundee	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
PJ64 DDN	Dundee	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DDL	Dundee	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 PPY	Dundee	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
SN57 FHZ	Dundee	Volvo 26 T Dedicated	9m^3	Econ	Patrol
PE64 BVJ	Inverness	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DCY	Inverness	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
SJ65 FVX	Inverness	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SJ65 FVW	Inverness	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
PJ64 DCX	Keith	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DCV	Keith	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PK64 PPZ	Lochgelly	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DDE	Lochgelly	Mercedes 32 T Dedicated	12m^3	Giletta	Frontline
PE64 BWL	Lochgelly	Mercedes 32 T Dedicated	12m^3	Giletta	Frontline
SJ65 FVR	Lochgelly	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SN57 AOU	Perth	Volvo 26 T Dedicated	9m^3	Econ	Patrol
PJ64 DDK	Perth	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
SJ65 FVP	Perth	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
PK64 PPX	Perth	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DDF	Perth	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PK64 PRX	Perth	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PE64 BXZ	Perth	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
SJ65 FVZ	Perth	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SV57 FGK	Perth	Volvo 26 T Dedicated	11m3	Econ	Sprayer
PJ64 PRV	Stirlinghill	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
SJ65 FVV	Stirlinghill	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SJ65 FWA	Stirlinghill	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
PJ64 DDA	Tullos	Mercedes 32 T Dedicated	12m^3	Econ	Frontline

Registration number	Depot location	Description	Spreader Size	Type	Vehicle Type
PJ64 DCU	Tullos	Mercedes 32 T Dedicated	12m^3	Econ	Frontline
PJ64 DCZ	Tullos	Mercedes 32 T Dedicated	12m^3	Econ	Frontline

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

Type of Winter Service Plant & registration number	Depot location	Vehicle capacity	Number of vehicles	Plant use* (i), (ii), (iii)
Footpath Tractor	Lochgelly	500 Kg	1	(iii)
Footpath Tractor	Dundee	500 Kg	1	(iii)
Footpath Tractor	Kintore	500 Kg	2	(iii)
Footpath Tractor	Stirlinghill	500 Kg	1	(iii)
Footpath Tractor	Keith	500 Kg	2	(iii)
Footpath Tractor	Inverness	500 Kg	1	(iii)
Footway snow blower	Keith	37 T/hr	1	(ii) and (iii)
Footway snow blower	Kintore	37 T/hr	1	(ii) and (iii)

Table 7.2.J.11 - Reserve Winter Service Plant permanently available and located in the Unit for Winter Service for carriageways footways footbridges and cycling facilities

Registration number	Depot location	Description	Spreader Size	Type	Vehicle Type
SN57 FJD	Dundee	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SN57 FJA	Dundee	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SN57 FGU	Dundee	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SJ65 FVO	Dundee	Mercedes 18 T Dedicated	6m^3	Econ	Backup
SN57 FHY	Inverness	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SN57 FGZ	Keith	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SN57 FHS	Keith	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SN57 FJC	Lochgelly	Volvo 26 T Dedicated	9m^3	Econ	Reserve
SJ65 FVT	Perth	Mercedes 18 T Dedicated	6m^3	Econ	Patrol
SN57 FHV	Stirlinghill	Volvo 26 T Dedicated	9m^3	Econ	Reserve

Table 7.2.J.12 - Additional Winter Service Plant

Type of Winter Service Plant & registration number	Depot Location or Third Party Operator and Location	Number of Vehicles	Mobilisation Time in Hours
Gully emptier – 9m³ QCB spreader and plough (SV57 FGK)	Keith	1	4
Gully emptier – 9m³ QCB spreader and plough	Perth	1	4
IPV – Plough only (SN57 AOJ & SN57 AOK)	Lochgelly	2	4
IPV – Plough only (SN57 ANP)	Perth	1	4
IPV – Plough only (SN57 ANX)	Dundee	1	4
Schmidt TS Snowblower (SV51 HXA)	Keith	1	4
Rolba 400 F Snowblower	Keith	1	4
Variable V plough	Perth	1	2
10,000 litres De-mount liquid sprayer	Corporate Resource	1	4
Tractors with ploughs	Ian Currie, Keith	2	4
Tractors with ploughs	Ellon / Balmedie	1	4
Tractors with ploughs	G.R. Johnstone, Stonehaven	1	4
Raiko Ice-breaker	Transport Scotland, Perth	1	2

Table 7.2.J.13 - Loading Winter Service Plant permanently available and located in the Unit at each loading point

Type of Winter Service Plant & registration number	Depot location	Vehicle capacity	Number of vehicles
Loadall (long term hire)	Lochgelly	2 tonne	1
Loadall (long term hire)	Perth	2 tonne	1
Loadall (long term hire)	Dundee	2 tonne	1
Loadall (long term hire)	Edzell	2 tonne	1
Loadall (long term hire)	Tullos	2 tonne	1
Loadall (long term hire)	Stirlinghill	2 tonne	1
Loadall (long term hire)	Inverness	2 tonne	1
Loadall (long term hire)	Keith	2 tonne	1

APPENDIX WSP 5

Table 7.2/J/14 – Compounds, Depots and Facilities

Compound, Depot or Facility Name	Owner	Postal Address	Purpose	Access Arrangements	Contact Details	Facilities
Lochgelly	Purvis Group	Cartmore Industrial Estate, Lochgelly KY5 8LL	Office, Operational and Winter Depot	A92 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Perth	Morris Leslie Ltd	Inveralmond Road, Inveralmond Industrial Estate, PH1 3TW	Head Office, Operational and Winter Depot	A9 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Dundee	Breedon Aggregates	Cunmont Quarry, Kingennie, Newbigging, DD5 3PX	Office, Operational and Winter Depot	A92 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Edzell	Breedon Aggregates	Capo Quarry, Edzell, AB30 1RQ	Winter Depot	A90 24 hours	[redacted]	Mess, welfare, materials store, salt

Compound, Depot or Facility Name	Owner	Postal Address	Purpose	Access Arrangements	Contact Details	Facilities
						store and weighbridge
Kintore	Breedon Aggregates	Toms Forest Quarry, Kintore, Aberdeenshire	Office, Operational and Winter Depot	A96 24 hours	[redacted]	Office, mess, welfare and materials store.
Stirlinghill	Breedon Aggregates	Stirlinghill Quarry Boddam Peterhead, AB42 3PB	Office, Operational and Winter Depot	A90 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Inverness	Arc Estates Ltd	Longman Drive, Inverness	Office, Operational and Winter Depot	A96 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Keith	Limehillock Quarry Estates	Blackhillock Quarry, Keith, AB55 5PA	Office, Operational and Winter Depot	A96/A95 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge
Errol	Morris Leslie	Morris Leslie, Errol airfield, Errol	Salt Store	A90 24 hours	[redacted]	Salt Store
Tullos	Aberdeen City Council	West Tullos Ind Est Aberdeen	Operational and Winter Depot	A90 24 hours	[redacted]	Office, mess, welfare, materials store, salt store and weighbridge

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

The tables in this Annex 7.2/K set out the decision making process for winter service

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

<table>
<tr><th colspan="4">Decision Matrix</th></tr>
<tr><th colspan="4">Predicted Road Conditions</th></tr>
<tr><th>Road Surface Temperature</th><th>Wet</th><th>Wet Patches</th><th>Dry</th></tr>
<tr><td>May fall below 1ºC</td><td rowspan="2">Salt before frost</td><td>Salt before frost (see Note A)</td><td>No action likely, monitor weather (see Note A)</td></tr>
<tr><td rowspan="4">Expected to fall below 1ºC</td><td colspan="2">Salt before frost (see Note B)</td></tr>
<tr><td colspan="3">Salt after rain stops</td></tr>
<tr><td colspan="3">Salt before frost and after rain stops (see Note C)</td></tr>
<tr><td colspan="2">Salt before frost</td><td>Monitor weather conditions</td></tr>
<tr><td>Expected snow</td><td colspan="3">Salt before snow</td></tr>
<tr><td rowspan="3">Freezing rain</td><td colspan="3">Salt before rain (see Note C)</td></tr>
<tr><td colspan="3">Salt during rain (see Note C)</td></tr>
<tr><td colspan="3">Salt after rain (see Note C)</td></tr>
</table>

Figure 8/1 – Decision Matrix

The decision to undertake precautionary treatments may be adjusted to take account of residual salt or surface moisture.

Note A: Particular attention should be given the possibility of water running across carriageways. Such locations will be monitored and treated as required.

Note B: When a weather warning contains reference to expected hoarfrost close monitoring will be required, with particular attention given to timings of precautionary treatments as salt deposited on dry roads may be dispersed before it can become effective.

Note C: Under these circumstances rain will freeze on contact with running surfaces and full pre-treatment should be provided even on dry roads, with continuous monitoring throughout the danger period.

Table 7.2/K/2 – Spreading Rates for Precautionary Treatments Mix

	Forecast weather condition	Frost Susceptible/ surface water run-off area (g/m^2)	Road Surface Wet (g/m^2)
A	RST higher than plus 1°C	0	0
B	RST lower than or equal to plus 1°C but higher than minus 2°C	10 to 20	10 to 20
C	RST lower than or equal to minus 2°C but higher than minus 5°C	10 to 20	10 to 20
D	RST lower than or equal to minus 5°C	20	20
E	RST lower than or equal to plus 1°C but higher than minus 2°C following rain	20	30
F	RST lower than or equal to minus 2°C but higher than minus 5°C following rain	30	40
G	RST lower than or equal to minus 5°C following rain	40	40
H	Hoar Frost	20	20
I	Freezing Fog	10	20
J	Freezing Rain	40 (See decision matrix)	40 (See decision matrix)
K	Snow Accumulations up to 30mm	30	40
L	Snow Accumulations over 30mm	40	40
M	Hard Packed Snow/Ice	See clearance matrix	See clearance matrix

Note 1: Spread rate for pre-wetted salt is the combined weight of dry rock salt and brine combined at 70:30 proportions by weight, with maximum brine concentration of 23% salt.

Note 2: When ice is formed or snow is lying dry salting is the preferred treatment unless the road is closed to traffic when pre-wetted salting may be used. Pre-wetted salting is the preferred treatment in advance of such conditions.

Note 3: Treatments will be carried out, whenever possible, after traffic has dispersed standing water. Successive half rate treatments (for both pre-wetted and dry salt operations) should be considered for lightly trafficked roads at lower ends of temperature bands indicated.

Table 7.2/K/3 – Spreading Rates for Snow or Ice Clearance Matrix

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

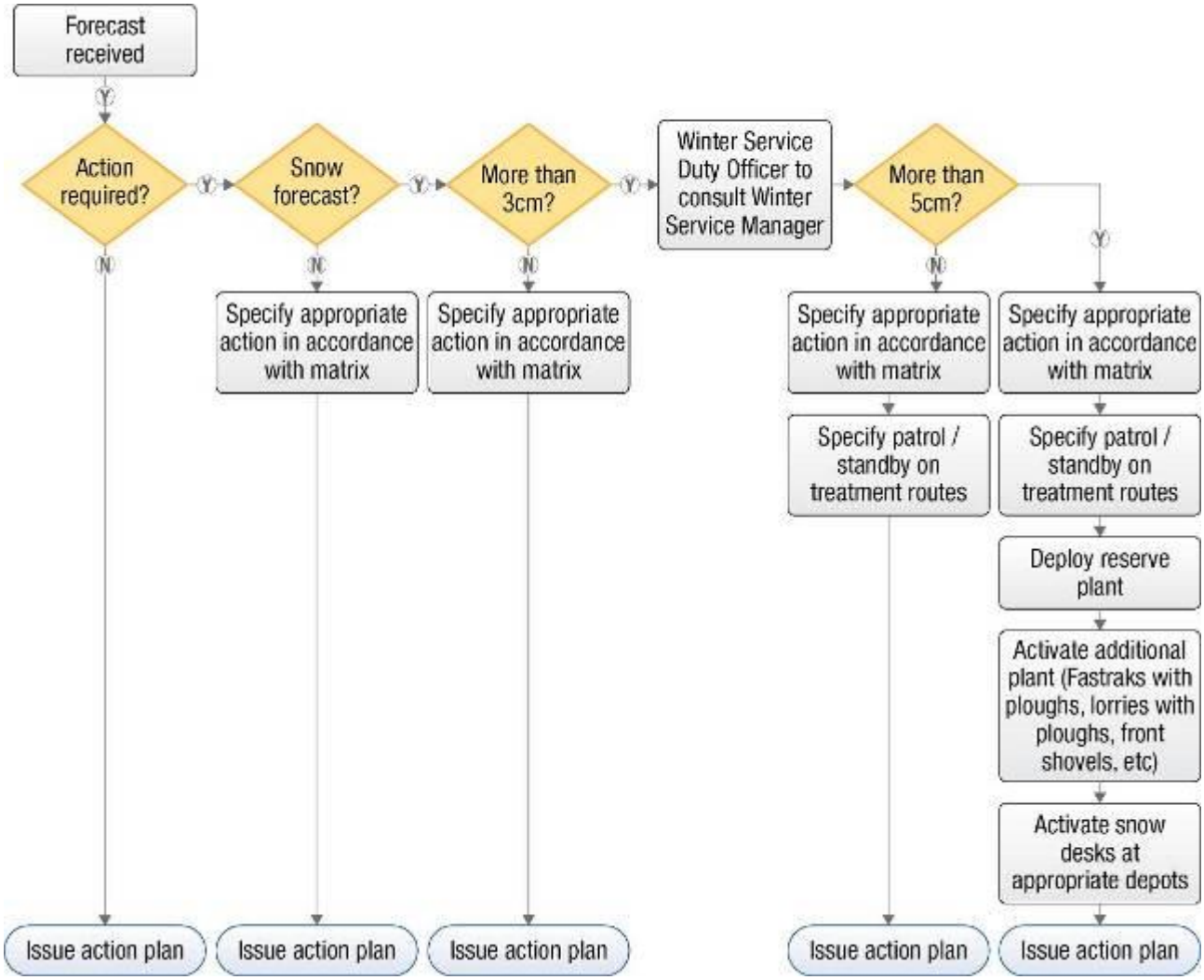
Note 1: Spread rate for pre-wetted salt is the combined weight of dry rock salt and brine combined at 70:30 proportions by weight, with maximum brine concentration of 23% salt.

Note 2: When ice is formed or snow is lying dry salting is the preferred treatment unless the road is closed to traffic when pre-wetted salting may be used. Pre-wetted salting is the preferred treatment in advance of such conditions.

Note 3: Treatments will be carried out, whenever possible, after traffic has dispersed standing water. Successive half rate treatments (for both pre-wetted and dry salt operations) should be considered for lightly trafficked roads at lower ends of temperature bands indicated

ANNEX 7.2/K/4 – SNOW FORECAST RESOURCE DEPLOYMENT MATRIX -

The following domain specific snow event escalation matrix will be used. Consultation will still need to take into account the forecast confidence level, altitude and timing.



ANNEX 7.2/L – Salt Stock Monitoring Report

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

Appendix WSP 6 - Daily Winter Action Plan – Planned

BEAR SCOTLAND DAILY WINTER ACTION PLAN
Contract: North East Unit & A92 DBFO
Covering : 01 November 2014 14:00 till 2 November 2014 13:59

Forecast Data

Domain	Min. RST °C	RST < 0°C	Hoar Frost	Ice	Heavy Rain	Fog	Freezing Rain	Snow	Snow Level	Drifting
1	1	-	-	-	-	-	-	-	-	-
2	1	-	-	-	-	-	-	-	-	-
3	1	-	-	-	-	-	-	-	-	-
4	1	-	-	-	-	-	-	-	-	-
5	1	-	-	-	-	-	-	-	-	-
6	1	-	-	-	-	-	-	-	-	-
7	1	-	-	-	-	-	-	-	-	-
8	1	-	-	-	-	-	-	-	-	-
9	1	-	-	-	-	-	-	-	-	-
10	1	-	-	-	-	-	-	-	-	-
11	1	-	-	-	-	-	-	-	-	-
12	1	-	-	-	-	-	-	-	-	-
13	1	-	-	-	-	-	-	-	-	-
14	1	-	-	-	-	-	-	-	-	-
92	1	-	-	-	-	-	-	-	-	-

Action Plan

Depot	Domain	Route		First Action & Time			Second Action & Time		
		No.	Description	Action	Start	End	Action	Start	End
Stirlinghill	1	20-1	A90 Newburgh - Fraserburgh	N/A					
Inverness	2	20-2	A9 Raigmore Roundabout - Fochabers	N/A					
Keith	3	20-3	A96 Fochabers - Blackburn	N/A					
Keith	4	20-4	A95 Keith - A95 Granish	N/A					
Tullos	5	20-5	A90 Queens Rd. - Newburgh - A96 Handigan to Blackburn	N/A					
Tullos	6	20-6	A90 Queens Rd. - Glasslaw	N/A					
Dundee	7	20-7	A90 Stracathro - Glasslaw	N/A					
Dundee	8	20-8	A90 Stracathro - Muiryfaulds	N/A					
Dundee	9	20-9	A90 Muiryfaulds - Inchture + Dundee Trunk Roads	N/A					
Perth	10	20-10	A9 Inveralmond - Loaninghead - M90 Craigend	N/A					
Perth	11	20-11	A9 Loaninghead - Keir	N/A					
Lochgelly	12	20-12	M90 Craigend - A92 Chapel	N/A					
Perth	13	20-13	A90 Inchture - Perth - M90 Slips	N/A					
Lochgelly	14	20-14	A92 Tay Bridge - Lochgelly	N/A					
Dundee		DBFO1	A92 Abroath (Elliot) - Claypotts	N/A					
A92 DBFO Footways		DBFOFW1	Elliot to Claypotts	N/A					
Aberdeen		CAT1	East Dock Street, Dundee + Auchmill Road, Aberdeen	N/A					
Keith		CAT2	All Other Urban Footways	N/A					
Lochgelly	12	NE-A1	M90 Halbeath - Craigend	N/A					
Perth	11	NE-A2	A9 Cairnie Braes - Keir R/A	N/A					
Perth	10	NE-A3	A9 Cairnie Braes - Inveralmond - Broxden - Barnhill - Inchmichael	N/A					
Dundee	9	NE-A4	A90 Lochlands - Inchmichael	N/A					
Dundee	8	NE-A5	A90 Lochlands - Drumnagair	N/A					
Edzell	7	NE-A6	A90 Drumnagair - Newtonhill	N/A					
Kintore	6	NE-A7	A96 Clinerty R/A - Haudagain R/A - Newtonhill	N/A					
Peterhead	5	NE-A8	A90 Ellon R/A - Haudagain R/A	N/A					
Keith	3	NE-B1	A96 Keith - Clinerty R/A	N/A					
Keith	4	NE-B2	A95 Keith - Granish	N/A					
Inverness	2	NE-B3	A96 Inverness - Keith	N/A					
Additional Comments									

KEY TO PLANNED ACTION

T1 - Pre-treatment 10gms/sq.m
T2 - Pre-treatment 20gms/sq.m
T3 - Pre-treatment 30gms/sq.m
T4 - Pre-treatment 40gms/sq.m
TE - Pre-treatment Ethylene Glycol
T*P - Pre-treatment Part route, *=1,2,3,4 or E
S - Standby in Depot
NA - No Action
PO - Patrol
TP - Plough/Salt Whole Route
TP - Plough/Salt Part Route

Drafted By : Scott Paterson
Approved by : **for BEAR Scotland ©**

Appendix WSP 7 Daily Winter Action – Implemented

Contract: North East Unit & A92 DBFO
Covering : 01 November 2014 14:00 till 2 November 2014 13:59

Action Plan

Depot	Domain	Route		First Action & Time			Second Action & Time		
		No.	Description	Action	Start	End	Action	Start	End
Stirlinghill	1	20-1	A90 Newburgh - Fraserburgh	N/A					
Inverness	2	20-2	A9 Raigmore Roundabout - Fochabers	N/A					
Keith	3	20-3	A96 Fochabers - Blackburn	N/A					
Keith	4	20-4	A95 Keith - A95 Granish	N/A					
Tullos	5	20-5	A90 Queens Rd. - Newburgh - A96 Handigan to Blackburn	N/A					
Tullos	6	20-6	A90 Queens Rd. - Glasslaw	N/A					
Dundee	7	20-7	A90 Stracathro - Glasslaw	N/A					
Dundee	8	20-8	A90 Stracathro - Muiryfaulds	N/A					
Dundee	9	20-9	A90 Muiryfaulds - Inchture + Dundee Trunk Roads	N/A					
Perth	10	20-10	A9 Inveralmond - Loaninghead - M90 Craigend	N/A					
Perth	11	20-11	A9 Loaninghead - Keir	N/A					
Lochgelly	12	20-12	M90 Craigend - A92 Chapel	N/A					
Perth	13	20-13	A90 Inchture - Perth - M90 Slips	N/A					
Lochgelly	14	20-14	A92 Tay Bridge - Lochgelly	N/A					
Dundee		DBFO1	A92 Abroath (Elliot) - Claypotts	N/A					
A92 DBFO Footways		DBFOFW1	Elliot to Claypotts	N/A					
Aberdeen		CAT1	East Dock Street, Dundee + Auchmill Road, Aberdeen	N/A					
Keith		CAT2	All Other Urban Footways	N/A					
Lochgelly	12	NE-A1	M90 Halbeath - Craigend	N/A					
Perth	11	NE-A2	A9 Cairnie Braes - Keir R/A	N/A					
Perth	10	NE-A3	A9 Cairnie Braes - Inveralmond - Broxden - Barnhill - Inchmichael	N/A					
Dundee	9	NE-A4	A90 Lochlands - Inchmichael	N/A					
Dundee	8	NE-A5	A90 Lochlands - Drumnagair	N/A					
Edzell	7	NE-A6	A90 Drumnagair - Newtonhill	N/A					
Kintore	6	NE-A7	A96 Clinerty R/A - Haudagain R/A - Newtonhill	N/A					
Peterhead	5	NE-A8	A90 Ellon R/A - Haudagain R/A	N/A					
Keith	3	NE-B1	A96 Keith - Clinerty R/A	N/A					
Keith	4	NE-B2	A95 Keith - Granish	N/A					
Inverness	2	NE-B3	A96 Inverness - Keith	N/A					
Additional Comments									

KEY TO PLANNED ACTION

T1 - Pre-treatment 10gms/sq.m
T2 - Pre-treatment 20gms/sq.m
T3 - Pre-treatment 30gms/sq.m
T4 - Pre-treatment 40gms/sq.m
TE - Pre-treatment Ethylene Glycol
T*P - Pre-treatment Part route, *=1,2,3,4 or 5
S - Standby in Depot
NA - No Action
PO - Patrol
TF - Plough/Salt Whole Route
TP - Plough/Salt Part Route

Compiled by :

Approved by : **for BEARScotland Ltd**

Appendix WSP 8/1 Winter Drivers Record

WINTER DRIVERS RECORD

DEPOT: **ROUTE:** **VEHICLE REG.:**

Weight when loaded **Call Out Time** (Unplanned action)

Note:

Time Left Depot

Start of Action **Date** **Time**

End of Action **Date** **Time**

Time returned to Depot

Weight on Return

Rate of Spread (gms/sq m)

Width of Spread (m)

Salt Grading: **Fine**

Action Taken	Planned	Reactive
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 Ethylene Glycol		
TF - Plough/salt whole route as necessary		
TP - Plough/salt part route as necessary		
T*P:		
Part from to		
from to		
from to		

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

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

FOR SUPERVISORS USE ONLY

Planned Action	Start	End

Unplanned Action	Called Out	Start	End

Supervisors Comments:

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

I have checked

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

WSP 8/2 - Example layout of form used by Cat A and Cat B drivers

Document: *Form 390*	Drivers Patrol Route A1 (Ex Lochgelly)	
Issue: ***1***		
Related to: **NE4G**		
Page No. ***159 of 191***		

1. **M90, Halbeath – Start of patrol**
2. **M90, Glenfarg**
3. **M90, Bridge of Earn**
4. **M90, Glenfarg**
5. **M90, Halbeath**

Note: Patrol Runs from M90 Halbeath to Craigend and the tables below show where the temperatures should be recorded.

Print Drivers Name- ……. **Sign Drivers Name- …….**

Start Weight ……..…… **End Weight ……..……..**

Date: ……..…… **Vehicle Reg ……..……..**

Patrol 1- start 02:00 **Start Time..... End Time…….....**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Halbeath					
Glenfarg					
Bridge of Earn					
Glenfarg					
Halbeath					

Patrol 2- start 04:00 **Start Time..... End Time……..**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Halbeath					
Glenfarg					
Bridge of Earn					
Glenfarg					
Halbeath					

Patrol 3- start 06:00 **Start Time..... End Time……..**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Halbeath					
Glenfarg					
Bridge of Earn					
Glenfarg					
Halbeath					

Patrol 4- start 08:00 **Start Time..... End Time……..**

Location	Time	RST	Air Temp	Road/ Weather Conditions	Comments
Halbeath					
Glenfarg					
Bridge of Earn					
Glenfarg					
Halbeath					

Information must be returned to Control Room for every patrol.
When not Patrolling wait at ***Kinross Overbridge*** unless otherwise instructed.

WSP 8/3 – Patrol Actions – Control Room Records

Patrol Actions for : 1 November 2013

Add/Edit Patrol Action

FW4 | PA-1 | PA-2 | PA-3 | PA-4 | PA-5 | PB-1 | PB-2 | PB-3 | PB-4 | PB-5 | PB-6 | PB-7 | PB-8

Time Of Call	Vehicle Air Temp. °C	Location	Information from RWIS (from nearest sensor)					Assessed road condition	Assessed residual salt	Proposed action				Route salted prior to patrol	
			Air Temp. °C	Surface Temp. °C	Wind Speed (mph)	Relative Humidity (%)	Road State			Action Code	Spread Rate (g/m2)	No. of Lanes	Cum. gritted length (m)	Spread Rate (g/m2)	Time of Salting

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

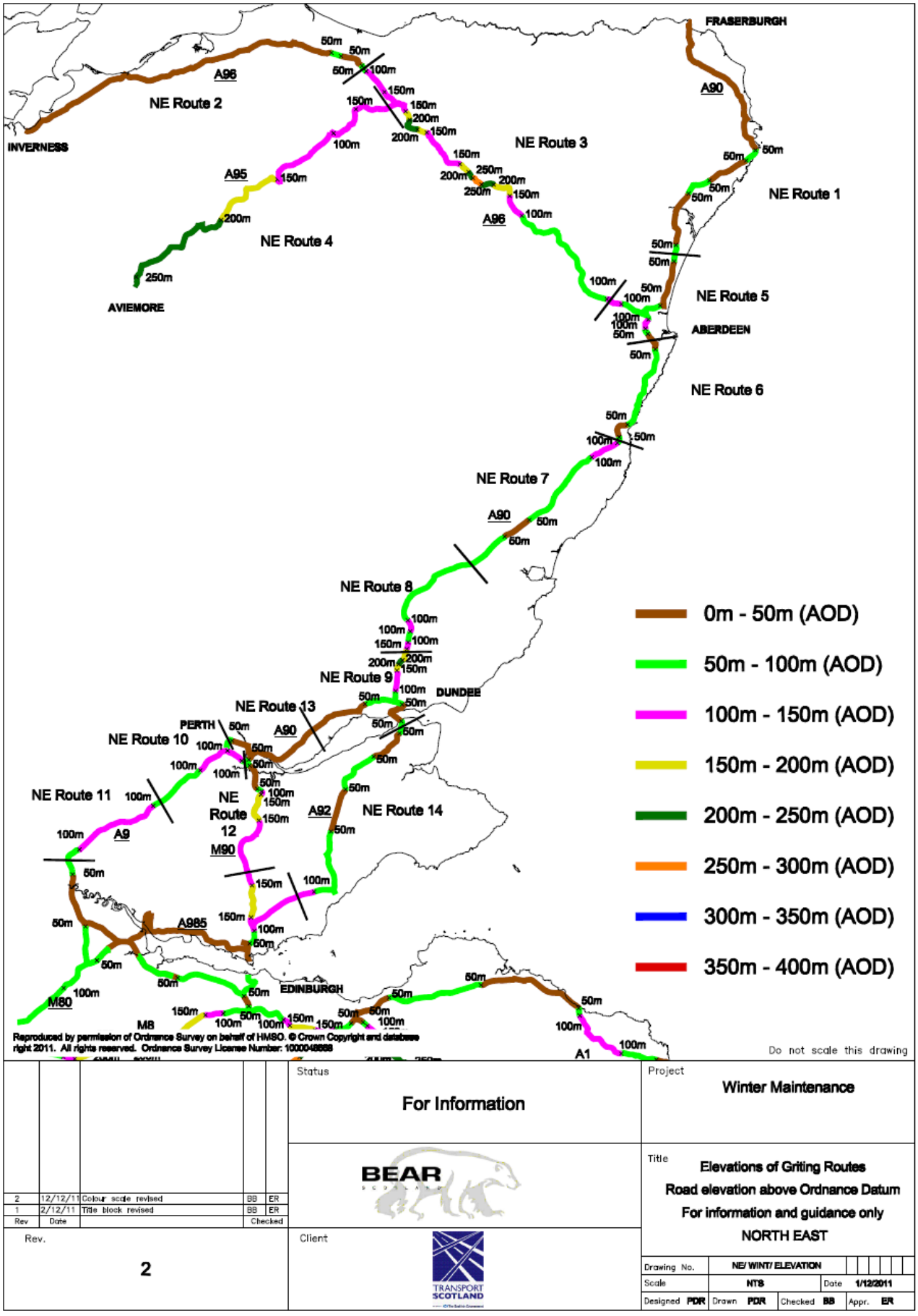
Patrol Route..... Date..... Information checked by.....

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

*Action symbols:

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

Appendix WSP9 – Route Elevations



Appendix WSP 10 Winter Patrol Map

Patrol Route Map North East Unit

A1
A2
A3
A4
A5
A6
A7
A8
B1
B2
B3

Appendix WSP 11 Alternative De-Icer Method Statement

Risk Assessment & Resources	
RA 007	Winter Maintenance: winter maintenance
Resources For Activity	Loading Shovel and Operative; Winter Maintenance Vehicle and Operative; Salt; Brine, Alternative De-Icer.

Appendix WSP11

Work Sequence	
1.	**Introduction** This Method Statement is designed to provide a system of work that is both safe and makes every effort to minimise any negative impact on the environment, demonstrating Best Environmental Practice. It is designed to be clearly understood by all parties involved in the activity and to ensure any deviations from this method are appropriately risk assessed and authorised before this method is applied.
2.	**Significant Hazards** **The main hazard/s associated with this system are follows**

Activity	Hazard	Controls
Driving in inclement weather	Losing control of vehicle	Only trained competent Operatives to undertake this task obeying the speed limits and ground conditions. Do not deviate from travel plan.
Driving in inclement weather	Vehicle breakdown	Ensure full vehicle defect check including wheel nut torque settings before setting off.

3. **Work Applications**

The Magnesium Chloride due to its exothermic reaction that brings the temperature of the ice up to 5° where salt starts to be reactive.

This must be applied after the ice breakers initial treatment to stipple the surface of the ice to allow ponding to occur resulting the temperature of the ice being raised.

Once the Magnesium Chloride is applied to the surface of the ice a further application of salt may be required.

A period of time may be required between each application. In turn this helps to break down the hard packed ice making it easier for the Ice Breaker to follow behind breaking up the ice for more efficient removal from the carriageway.

This may be followed through using a hard edged plough when the ice is beginning to break down. If this ice is particularly thick this treatment may need to be repeated.

The liquid treatment will be applied using a dribble bar mounted on a Fastrac or Gulley Motor, this must only be used, maintained and repaired by persons who are competent, trained, experienced and informed of the dangers.

Always refer to the COSHH Assessment for Magnesium Chloride or similar alternative de-icing products.

4. **General**

Ensure safe systems of work are implemented taking account of prevailing conditions, such as weather, traffic, overhead cables or restrictions, existing activities and environment.

All operatives involved in this operation must wear appropriate personal protective equipment e.g. Safety Boots, Hard Hat, Safety Glasses, Reflective Long Sleeved Clothing, Gloves, etc. Additional clothing such as using several layers or thermal clothing appropriate to the temperatures and weather conditions should be considered before setting out.

Site Specific Risk Assessment must address road conditions, vehicle appropriateness, operator competence, work methods, site access, supervision, pollution risks, overhead cables (ice loading) and obstructions such as kerb edges, bollards and street furniture, etc.

Ensure personnel selected are capable, fit and experienced.

Ensure rollover protection (ROPS) and seat belts are fitted and that seat belts are worn.

Ensure thorough inspection of plant and report any defects immediately to Line Manager.

Only trained, competent and qualified personnel trained for the use of plant should operate the machinery.

Where lifting equipment is being used the lifting certification for the lifting apparatus is present and current. All slings / webbing straps should be inspected for coloured tags, they should match the colour displayed on the lifting equipment sign board in the depot. Return to depot store person to be re-inspected and re-tagged if the colour tag doesn't match the colour displayed on the board. DO NOT USE ANY THAT APPEAR UNSAFE. Hand them over to the depot Store Person. NEVER attempt to use a frayed or damaged sling.

	Where ratchets straps used should ensure they are inspected before each and every use. DO NOT USE ANY THAT APPEAR UNSAFE. Report them and use another. NEVER attempt to use a frayed or damaged ratchet strap. Do not over tighten the strap or place it over any part of the equipment that could become damaged. Fix to dedicated anchor points on the vehicle or equipment. Always ensure safe lifting.
5.	**<u>Daily Maintenance</u>** Check Fasteners Check the pins for wear Check the hoses Check the rubber elements Check the dribble bar apertures are clear and not damaged For Periodic Maintenance requirements refer to Operators Manual or contact Fleet Manager. Alternative de-icers such as Magnesium Chloride, etc will be used as spot treatments in the event of hard packed ice. Magnesium Chloride will operate in extremely low temperatures where traditional Rock Salt is ineffective. With the appropriate tanks and mixing methods this can be used as both a de-icer and as a brine substitute. Each route will require 30% alternative de-icer per T2 treatment, Pre wetted treatment is 70% of brine and 30% alternative de-icer.
6.	**<u>Treatment of Hard Packed Snow and Ice for Dribble Bar Application</u>** Where required to apply the alternative de-icer of choice through a 'dribble' bar system from a 3000 litre tank on the back of a Fastrac or Gulley Motor on a spot treatment or preselected area basis. Using a Dribble Bar the alternative De-Icers can be applied accurately to the surfaces needing treatment without splashing or spraying on to other vehicles. The de-icer will be used in conjunction with the Raiko icebreaker mounted on the Fastrac fitted with the spray equipment on a separate Fastrac or Gulley Motor. The Fastrac with the Raiko icebreaker will travel directly in front of the de-icing Vehicle, this will break up the ice before the de-icing solution is applied. The alternative De-icer will then be applied and a further treatment using the ice breaker will follow if required. Finally if required salt will be applied before a plough is used without rubber pads to remove the ice. This treatment may have to repeated before the ice is in a condition where it can be removed efficiently by the plough. The icebreaker will continue to work during periods of replenishing the de-icer solution.

All broken ice will be removed from the carriageway by ploughing.

7. Precautionary Treatment with alternative De-Icer

Consideration should be given when road surface temperatures are forecast to be below MINUS 7 °**C** to consider substituting the brine with a blend of brine and alternative de-icer in certain climatic conditions as determined in table 2.

Table 2

Alternative De-Icer	Percentage Brine
Magnesium Chloride	30%

8. Environmental Aspects & Impacts

Aspect	Impact	Control
Noise	Engine noise in built up areas at night.	Noise levels unlikely to exceed normal traffic noise and cannot be avoided
Dust	N/A	
Vibration	N/A	
Pollution	Fuel spill from vehicle.	Spill kits to be available on all work vehicles.
Materials	Salt	Ensure the salt has been diluted to the correctly measured brine solution
Ecology, protected species and habitat	Alternative De-Icers cause less of an impact	Follow the instructions as per method statement
Waste	Water for cleaning, cleaning agents and fuel from plant	Interceptor tanks used to catch all water run-off
Water	Spillage of fuel to water course	Spill kits to be carried on all vehicles and emergency response plans to be briefed and available to Operatives.

Appendix WSP 12 – Areas Requiring Special Attention Schedule

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A9/SCH1 – Cairnie Braes	
Location	**A9 Cairnie Braes Findo Gask to Kinkell Bridge (see attached plan)**
Grid Reference	**(300130,717255) to (304892,721078)**
Problem	**Section of Dual Carriageway 2.5 miles in length with a gradient of approximately 10%**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to HGVs struggling to climb the steep incline, which has resulted in the vehicles losing traction & sliding across the carriageway blocking the road.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures]** **Additional 40g treatment on steep incline** **Consideration given to pre- treating carriageway (at inclines) with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Barrier removal crew deployed to site to assess if removing barrier would be safe at both top & bottom of Cairnie Brae. Liaise with Police Scotland re- traffic control if deemed safe to remove barrier & turn traffic, to be done under Police Scotland control.** **Plans put in place to move resources from less affected parts of the Unit potentially Lochgelly and Dundee this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]**

	The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence. **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather updates. Site information will be fed back through cameras, site supervisors and operative.** **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.** **Diversion identified as M9/M90 if long term closure predicted**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Perth if route blocked from Perth. Our Fastrac capability is based at Perth depot.** **frontline spreader/plough & reserve vehicle plough (Perth)**

	patrol spreader/plough (Perth) snowblower (Perth) Fastrac with plough(Perth)
Use of VMS	[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC] Liaise with Traffic Scotland regarding closure and messages Use of the following VMS to relay messages of closure, conditions or delays (subject to availability) M9 North Approaching Junction 10 M9 North Approaching Junction 7 M80 North east of Junction 6 Old Inns A9 Approaching Broxden A9 Approaching Inveralmond M90 Approaching Craigend
Other measures put in place	[Detail any further mitigation measures not mentioned above] Consideration would be given to asking for mutual aid from Councils and other Operating Companies Tayside Contracts, Perth & Kinross Council Spreader based at Inveralmond Depot
Assistance from additional Transport Scotland resources	[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]] Assistance from Transport Scotland Communications to agree message for media
Assistance from External Sources	[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc] Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract. If road is closed : Farmer with JCB to assist with snow clearance

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/M90/SCH1 – Balmanno Hill	
Location	**M90 Balmanno Hill**
Grid Reference	**(313979,711671) to (313635,717081)**
Problem	**Section of Motorway 2.5 miles in length with a gradient of approximately 10%**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to HGVs struggling to climb the steep incline, which has resulted in the vehicles losing traction & sliding across the carriageway blocking the road.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures .]** **Additional 40g treatment on steep incline** **Consideration given to pre- treating carriageway (at inclines) with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Barrier removal crew deployed to site to assess if removing barrier would be safe at both top & bottom of Balmanno Hill. Liaise with Police Scotland re- traffic control if deemed safe to remove barrier & turn traffic, to be done under Police Scotland control.** **Plans put in place to move resources from less affected parts of the Unit potentially Lochgelly or Dundee this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]**

	The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence. **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather updates. Site information will be fed back through cameras, site supervisors and operative.** **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.** **Diversion identified as A9/M9 if long term closure predicted**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Perth if route blocked from Perth. Our Fastrac capability is based at Perth depot.** **frontline spreader/plough & reserve vehicle plough (Perth)** **patrol spreader/plough (Perth)**

	snowblower (Perth) **Fastrac with plough(Perth)**
Use of VMS	**[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC]** **Liaise with Traffic Scotland regarding closure and messages** **Use of the following VMS to relay messages of closure, conditions or delays (subject to availability)** **M90 Halbeath Northbound** **A9 Approaching Broxden** **A9 Approaching Inveralmond** **M90 Approaching Craigend**
Other measures put in place	**[Detail any further mitigation measures not mentioned above]** **Consideration would be given to asking for mutual aid from Councils and other Operating Companies** **Tayside Contracts, Perth & Kinross Council Spreader based at Inveralmond Depot**
Assistance from additional Transport Scotland resources	**[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]]** **Assistance from Transport Scotland Communications to agree message for media**
Assistance from External Sources	**[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc]** **Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract.** **If road is closed :** **Farmer with JCB to assist with snow clearance**

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A96/SCH1 – Glens of Foudland	
Location	**A96 Glens of Foudland**
Grid Reference	**(358330,835191) to (363780,834530)**
Problem	**Section of Single Carriageway road appox 2 miles in length with history of snow issues due to high altitude**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to snow drifting over road due to lack of shelter & high altitude.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures]** **Consideration to be given to increasing the spread rate to 30 or 40 g/m^2.** **Consideration given to pre- treating carriageway with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site. Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Plans put in place to move resources from less affected parts of the Unit potentially Inverness, Aberdeen or Stirlinghill this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon (Elgin) which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]** **The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence.** **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**

Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather updates. Site information will be fed back through cameras, site supervisors and operative.** **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Aberdeen, Stirlinghill or Dundee if route blocked from Keith.**
Use of VMS	**[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC]** **Liaise with Traffic Scotland regarding closure, messages and** **Use of the VMS to relay messages of closure, conditions or delays (subject to availability)**

Other measures put in place	**[Detail any further mitigation measures not mentioned above]** **Consideration would be given to asking for mutual aid from Councils and other Operating Companies** **Moray Council, Aberdeenshire and Aberdeen City Councils.**
Assistance from additional Transport Scotland resources	**[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]]** **Assistance from Transport Scotland Communications to agree message for media**
Assistance from External Sources	**[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc]** **Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract.** **If road is closed :** **Agricultural contractors with Fas-Tracs & ploughs to be deployed.** **Farmer with JCB to assist with snow clearance**

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A95/SCH1 – Ballindalloch	
Location	**A95 Ballindalloch**
Grid Reference	**(318509,837224) to (319276,838315)**
Problem	**Section of Single Carriageway road appox 1 mile in length with history of snow issues due to high altitude**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to snow on the steep incline & high altitude.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures]**

	Consideration to be given to increasing the spread rate to 30 or 40 g/m^2. **Consideration given to pre- treating carriageway with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Plans put in place to move resources from less affected parts of the Unit potentially Inverness, Aberdeen or Stirlinghill this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon (Elgin) which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]** **The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence.** **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather**

	updates. Site information will be fed back through cameras, site supervisors and operative. **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Inverness, Aberdeen, or Stirlinghill if route blocked from Keith.**
Use of VMS	**[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC]** **Liaise with Traffic Scotland regarding closure, messages and** **Use of the VMS to relay messages of closure, conditions or delays (subject to availability)**
Other measures put in place	**[Detail any further mitigation measures not mentioned above]** **Consideration would be given to asking for mutual aid from Councils and other Operating Companies** **Moray Council, Aberdeenshire and Highland Councils.**
Assistance from additional Transport Scotland resources	**[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]]** **Assistance from Transport Scotland Communications to agree message for media**
Assistance from External Sources	**[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc]** **Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract.** **If road is closed :**

	Agricultural contractors with Fas-Tracs & ploughs to be deployed. **Farmer with JCB to assist with snow clearance**

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A95/SCH2 – Cromdale – A9 Junction	
Location	**A95 Cromdale – A9 Junction**
Grid Reference	**(307500,828560) to (289989,815299)**
Problem	**Section of Single Carriageway road appox 12 miles in length with history of snow issues due to high altitude**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to snow at high altitude.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures]** **Consideration to be given to increasing the spread rate to 30 or 40 g/m^2.** **Consideration given to pre- treating carriageway with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Plans put in place to move resources from less affected parts of the Unit potentially Inverness, Aberdeen or Stirlinghill this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon (Elgin) which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]**

	The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence. **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather updates. Site information will be fed back through cameras, site supervisors and operative.** **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Inverness, Aberdeen, or Stirlinghill if route blocked from Keith.**
Use of VMS	**[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC]** **Liaise with Traffic Scotland regarding closure, messages and**

	Use of the VMS to relay messages of closure, conditions or delays (subject to availability)
Other measures put in place	**[Detail any further mitigation measures not mentioned above]** **Consideration would be given to asking for mutual aid from Councils and other Operating Companies** **Moray Council, Aberdeenshire and Highland Councils.**
Assistance from additional Transport Scotland resources	**[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]]** **Assistance from Transport Scotland Communications to agree message for media**
Assistance from External Sources	**[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc]** **Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract.** **If road is closed :** **Agricultural contractors with Fas-Tracs & ploughs to be deployed.** **Farmer with JCB to assist with snow clearance**

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A90/SCH1 – Temple of Fiddes	
Location	**A90 Temple Fiddes**
Grid Reference	**(380838,781143) to (384171,782889)**
Problem	**Section of Dual Carriageway 2 miles in length very little shelter from elements**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to drifting snow.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures]**

	Consideration to be given to increasing the spread rate to 30 or 40 g/m^2. **Consideration given to pre- treating carriageway with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Plans put in place to move resources from less affected parts of the Unit potentially Aberdeen, Dundee or Keith this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.** **Additional plant and resource could potentially be obtained from our shareholders Breedon which would include lorries with ploughs manned with operatives deployed to the area dependent upon severity of conditions.**
When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]** **The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence.** **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather**

	updates. Site information will be fed back through cameras, site supervisors and operative. **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **Yes, A92 coastal route.**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Dundee and Aberdeen if route blocked. Our Fastrac capability is based at Perth depot.** **frontline spreader/plough & reserve vehicle plough (Dundee)** **patrol spreader/plough (Dundee)** **snowblower (Perth)** **Fastrac with plough(Perth)**
Use of VMS	**[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC]** **Liaise with Traffic Scotland regarding closure and messages** **Use of the following VMS to relay messages of closure, conditions or delays (subject to availability)**
Other measures put in place	**[Detail any further mitigation measures not mentioned above]** **Consideration would be given to asking for mutual aid from Councils and other Operating Companies** **Aberdeen City & Aberdeenshire Councils.**

Assistance from additional Transport Scotland resources	**[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]]** **Assistance from Transport Scotland Communications to agree message for media**
Assistance from External Sources	**[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc]** **Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract.** **If road is closed :** **Farmer with JCB to assist with snow clearance**

AREAS REQUIRING SPECIAL ATTENTION SCHEDULE

Reference Number: ARSA/NE/A96/SCH1 – Tyrebagger Hill	
Location	**A96 Tyrebagger Hill**
Grid Reference	**(300130,717255) to (304892,721078)**
Problem	**Section of Dual Carriageway 2.5 miles in length with a gradient of approximately 10%**
Has this site experienced problems before or is it an identified risk?	**Yes. The road has been closed at various times due to high volumes of traffic at peak periods and HGVs struggling to climb the steep incline, which has resulted in the vehicles losing traction & sliding across the carriageway blocking the road.**
Detailed Mitigation Measures	
Optional Mitigation Measures	**[Details of primary mitigation measures .]** **Additional 40g treatment on steep incline** **Consideration given to pre- treating carriageway (at inclines) with alternative de-icers** **Patrolling of 7.5t tippers with salt for salting under the wheels of struggling motorists** **Fastrac deployed to site** **Deployment of vehicles with extra welfare equipment if vehicles become stuck at locus** **Plans put in place to move resources from less affected parts of the Unit potentially Keith, Stirlinghill or Dundee this could include frontline, reserve or additional spreaders with operatives to assist with snow clearance.**

When enacted	**[Details of when the mitigation measures will be put in place i.e. prior to the event/during the event]** **The measures detailed above will be in place prior to the event based on a forecast of significant snow fall in a short space of with a high degree of forecaster confidence.** **In cases of low or medium forecaster confidence dialogue will be opened with TS regarding extent of mitigation measures**
Who enacts	**[Detail who triggers instigation (and on what basis) of the mitigation measures]** **Winter Manager** **Based on the 24 hour and 2 – 5 Day forecast.**
Who will manage the response	**[Detail who will manage the response & how this will be carried out]** **Strategic deployment and decision making – Operating Company Representative and Winter Manager.** **This will be carried out in the control room and based on information from our forecaster i.e. Radar and Weather updates. Site information will be fed back through cameras, site supervisors and operative.** **Senior staff will liaise with the Police Scotland and Transport Scotland.** **Duty Managers will liaise with site staff, forecaster and our central control room.** **Site staff will liaise with Winter Manager and Duty Manager.**
Are diversion routes to be used?	**[If diversion routes are utilised, detail what they are and what measures are in place to ensure they remain serviceable during the severe weather event]** **No, unlikely to be used as roads in vicinity likely to be in poorer condition than Trunk Road and unsuitable for HGV traffic.**
Deployment of resources	**[Detail of what resources will be deployed and where from, where they will be deployed to & when]** **Frontline Resource and Reserve Resource from Aberdeen and Keith if route blocked from Aberdeen. Our Fastrac capability is based at Perth depot.** **frontline spreader/plough & reserve vehicle plough (Aberdeen)**

	patrol spreader/plough (Aberdeen) snowblower (Keith) Fastrac with plough(Keith)
Use of VMS	[If VMS is to be used confirm the arrangements and agreements, consultation with TSNCC] Liaise with Traffic Scotland regarding closure and messages Use of the following VMS to relay messages of closure, conditions or delays (subject to availability) A96 West Approaching Aberdeen A90 North Approaching Aberdeen A90 South Approaching Aberdeen
Other measures put in place	[Detail any further mitigation measures not mentioned above] Consideration would be given to asking for mutual aid from Councils and other Operating Companies Aberdeen City Council Spreader based at Tullos Depot
Assistance from additional Transport Scotland resources	[Details of what additional resources are required, has consultation been carried out and agreements in place, what is process for calling in these resources]] Assistance from Transport Scotland Communications to agree message for media
Assistance from External Sources	[Details of assistance required from such entities as TRISS, Police Scotland, TSNCC, Local Authorities, Recovery Vehicles, Sub-contractors, Farmers etc] Liaison with Police Scotland to potentially mobilise HGV recovery vehicles through existing HGV recovery contract. If road is closed : Farmer with JCB to assist with snow clearance

WSP 13 Footway Treatments and Maps

ANNEX 7.2/E – Footways, Footbridges and Category A, B, C and D Footways, Footbridges and Cycling Facilities

Table 7.2.E.1 – Footways, Footbridges and Cycle Facilities Categories A, B, C and D – Response Times and Clearance Requirements for Ice

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

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

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

Categories	Requirements			
C	Between the hours of 08.00 and 17.00, commence snow clearing as soon as practicable to prevent compaction by traffic. Ploughing should be continuous thereafter to prevent a build up of snow.		Clear all snow by 17.00 hours on the day the snow first fell excluding Saturdays and Sundays when the area shall be cleared on the Monday immediately following. On wide Routes, 1.2 metre minimum width shall be cleared initially.	Clear snow when required by the Director.
A,B and C		Following clearance of snow, spread anti-icing materials to prevent ice formation on cleared surfaces in accordance with paragraph 3.1.17 of this Part. Note brine shall not be used as the anti-icing agent where compacted snow or ice lenses remain on the surface of the Route.	Following clearance of snow, spread anti-icing materials to prevent ice formation on cleared surfaces in accordance with paragraph 3.1.17 of this Part. Note brine shall not be used as the anti-icing agent where compacted snow or ice lenses remain on the surface of the Route.	
D	These footways, footbridges and cycleways shall receive treatment when required by the Director.			

Table 7.2.E.3– Category A, B, and C Footways, Footbridges and Cycle Facilities within the Unit

Location Number	Route	Location	Name of street/side of street to be treated	Details of Footway		Route Centreline Length (m)		
				Start	Finish	Category A	Category B	Category C
1	A90	Aberdeen	The Parkway/ Northern Side	Scotstown Rd	Ellon Rd		970	
			The Parkway/ Southern Side	Lochside Rd	Scotstown Rd		200	
			Stonehaven Rd-South Anderson Dv- Anderson Dv-North Anderson Dv-A90/ Both Sides	Cairngorm Rd	Muglemoss Rd			7670
2	A90	Crimond	Logie Avenue East/ Both Sides	Crimond House (12430/56/1940)	Anvil Cottage (12430/58/390)			600
3	A90	Dundee	Forfar Rd/ Both Sides	Kings Rd	Jack Martin Way			1650
4	A90	Fraserburgh	Cross St – Maconochie Rd/ Both Sides	High St	Boothby Rd		1710	
5	A92	Dundee	East Dock St/ Both Sides	Trades Ln	East Whale Ln	200		
6	A92/ A972	Dundee	East Dock St-Broughty Ferry Rd-Greendykes Rd-Kingsway East/ Both Sides	East Marketgait	Forfar Rd			4770
7	A92	Glenrothes	A92/ Both Sides	Bridge south of B9130 (14855/05/550)	14865/05/460			1100

Location Number	Route	Location	Name of street/side of street to be treated	Details of Footway		Route Centreline Length (m)		
				Start	Finish	Category A	Category B	Category C
8	A92	Freuchie	A92/ Both Sides	Shiels Ave	Filling Station			580
9	A95	Aberlour	High St/ Both Sides	Dowan's Hotel (10950/25/2550)	West Lodge (10950/30/1540)		1760	
10	A95	Craigellachie	A95- Victoria St/ Both Sides	Bridge east of A941 on A95 (10960/05/145)	Spey Rd (10960/05/460)			330
11	A95	Cromdale	A95/ Both Sides	Cromdale Hall (10940/50/00)	The Old Inn (10940/50/810)			810
12	A96	Aberdeen	Auchmill Rd/ Both Sides	Old Meldrum Rd	Carinfield Pl	435		
			Auchmill Rd/ Both Sides	Greenburn Rd	Old Meldrum Rd			1740
			Auchmill Rd/ Both Sides	Cairnfield Pl	Intersection with A90			1200
13	A96	Keith	Moss St/ Both Sides	Church Rd	17665/00/00		745	
			Church Rd- Regent St/ Both Sides	Moss St	Westend Cottage (17670/46/420)			1300
			A96/ Southern Side	B9015	Tigh Geal (12670/00/1080)			630
			Lennox Cres/ East Side	Intersection between A96 and A98	17675/91/100			100
			Lennox Cres/ West Side	Intersection between A96 and A98	Burnside Cottage (17675/70/2040)			445

Location Number	Route	Location	Name of street/side of street to be treated	Details of Footway		Route Centreline Length (m)		
				Start	Finish	Category A	Category B	Category C
14	A96	Elgin	East Rd/ Northern Side	Newmill Rd	Reiket Ln		1300	
			South College St-Alexandra Rd-High St-West Rd/ Both Sides	Pansport Rd	Eight Acres Hotel (12625/00/580)			3100
15	A96	Nairn	King St/ Both Sides	Viewfield Dv	St Ninians Rd		265	
			St Ninian St-Bridge St-Forres Rd/ Both Sides	King St	A939		700	
			Inverness Rd-Academy St-King St/ Both Sides	Tradespark Rd	Viewfield Dv			1575
16	A96	Alves	Main Road/ Northern Side	Filling Station (12625/46/100)	12625/37/750)			1220