Winter Service Plan

2024/25

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Next Review: July 2025

Lincolnshire
COUNTY COUNCIL
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Registry of Amendments

Amendment Number	Date	Brief Description of Amendments made	Name and Job Title
1	April 2024	Information regarding budgets being based on an average winter has been removed	Clair Dixon, Policy and Strategic Asset Manager
2	April 2024	References to Fleet Services removed	Clair Dixon, Policy and Strategic Asset Manager
3	April 2024	Local Highways Team have been removed as a point of contact for Network Resilience as part of the update process from the Forecast Service Provider	Clair Dixon, Policy and Strategic Asset Manager
4	April 2024	Snow room amended to Incident Response Room	Clair Dixon, Policy and Strategic Asset Manager
5	April 2024	The incident plan report shall be agreed between Network Resilience and the contractor after each incident rather than at the end of each shift	Clair Dixon, Policy and Strategic Asset Manager
6	April 2024	Section 3.14 updated to show that the mutual aid arrangements form part of the Lincolnshire Resilience Forum as part of the multi-agency response.	Clair Dixon, Policy and Strategic Asset Manager

1. General

1.1. Key Points

Precautionary salting network

1.1.1. We prioritise 3,018 km of our road network in the form of a Precautionary Salting Network.

Triage

1.1.2. A Triage of Escalation as a response to Severe Weather. The Resilient Network (minimum winter network) will be our first priority to be made safe during a severe weather event. The Precautionary Salting Network is the subsequent priority and Severe Weather routes will be considered as a third priority.

Route based forecasting

1.1.3. The Winter Service has moved away from solely temperature–based forecasting to a Route Based Forecasting system which improves efficiency and achieves better value for money. Innovations in forecasting technology now allow the Forecast Service Provider to provide a "route-based forecast", which is effectively an individual forecast for each of the 43 precautionary salting routes, each of which is divided into multiple sections. Temperature, however, continues to form part of the decision-making process alongside Route Based Forecasting.

Salting stock

1.1.4. A minimum of 25,000 tonnes of salt should be in stock at the start of the winter season, with a minimum of 15,000 tonnes available at any time across the county. These salt stocks are kept under cover within our local highways depots.

Treated salt

1.1.5. Treated Salt will be utilised in all seven depots. This consists of brown salt that has been treated with a natural agricultural by product. Treated salt facilitates better gritting of the roads by helping the salt stick to the road making the salting process less dependent on weather conditions.

1.2. Introduction

1.2.1. A Highways Infrastructure Asset Management Plan is produced and updated annually. This plan sets out standards, policy and objectives for the highway network. The Winter Service Plan is a supplement to the Highways Infrastructure Asset Management Plan.

1.2.2. We carry out precautionary and snow clearance treatments on carriageways and footways in accordance with this approved policy across the County.

1.2.3. All Trunk Road treatment is carried out by National Highway's Contractors as part of the Area 7 agency, which is run by National Highways. The Trunk Road network includes the A1, A52 west of Grantham and A46 County Boundary to Carholme Road Roundabout Lincoln.

1.2.4. There are eight operational depots in the County. These are located at Sturton by Stow, Willingham Hall, Manby, Horncastle, Ancaster, Thurlby, Chainbridge and Pode Hole.

1.2.5. All operations are carried out taking regard of National Guidance and Best Practice contained within the following documents:

- Section 7 of Well Managed Highway Infrastructure – A Code of Practice.
- National Winter Service Research Group - Practical Guide for Winter Service.

1.2.6. Winter Service will operate and prioritise on the basis of Safety, Serviceability, Sustainability and Customer Service.

2. Policy

2.1. Resilient network

2.1.1. Within the 'Well-Managed Highway Infrastructure' Code of Practice it was highlighted and recommended that each Local Authority should have a Resilient Road Network.

2.1.2. The Code of Practice describes a resilient network as a road network which "receives priority through maintenance and other measures in order to maintain economic activity and access to key services during disruptive events." This road network includes crucial economic routes whilst taking into account repeat weather events and additional local factors.

2.1.3. Another element to generating a Resilient Network is defining a Minimum Winter Network linking into this road network. It is our policy to maintain a focus on the key parts of our road network when severe weather events arise by developing a Minimum Winter Network linked into the Resilient Network system.

2.1.4. Our Resilient Network identifies all the critical routes within the County which are classed as priority in severe weather incidents. This takes into account connectivity to major communities, access to emergency services, links to all critical infrastructure and transport hubs, repeat weather events and additional local factors.

2.1.5. Our Resilient Network consists of the statutory A and B Roads map layer and the drawn on routes within the main towns that consider the essential points which are included in the Code of Practice. The main elements to determine inclusion are:

- connectivity between major communities;
- links to the strategic highway network;
- connectivity across authority boundaries where appropriate;
- links to transport interchanges;
- access to emergency facilities including Fire and Rescue, Police, Ambulance Services and hospitals;
- links to critical infrastructure (ports, power stations, water treatment works etc);
- principal public transport routes, access to rail and bus stations, and to bus garages and other depots; and
- other locally important facilities.

2.1.6. Consultation on the Resilient Network has taken place between internal and external partners to determine the routes, with organisations such as Utility Companies and Emergency Services being consulted.

2.2. Precautionary salting network

2.2.1. Our Winter Service operations will give priority to a 3,018 km network of priority routes, as shown on our website, which have taken into account historical treatment and public awareness. This network is defined as:

- 1,200 km Lincolnshire Local Strategic Road Network which includes the A and B road network.
- Links to all the county's main villages, as defined in Appendix A.
- Where physically possible, treated links to within at least 500 m of all primary and secondary schools.
- Links between all main NHS hospital and the treated network.
- Links between all railway and bus stations and the treated network.
- That the incorporation of certain combined public service and school bus routes into the priority network be considered. However, their inclusion be based upon criteria taking into account historical accident data, pupil numbers and geographical risk factors. It should be noted that all public service and school bus drivers are professional PSV drivers trained to drive in winter weather conditions.

2.2.2. All treatments shall be carried out using appropriate action for the prevailing conditions in accordance with national guidance and best practice. Winter service operations comprise precautionary salting and snow clearance. It is not realistic to treat the entire county's circa 9,255 km road network and first call on resources is given to a 3,018 km network of priority routes.

2.2.3. All future requests for roads to be included into the Precautionary Salting Network will be evaluated against the above criteria. Wherever practicable there will be continuity with cross border routes. All requests for additions to the Precautionary Salting Network will be considered and rated against a set of objective criteria with the assistance of a Network Evaluation form. The findings will be summarised and a report presented to the Executive Councillor for Highways. This will be completed out of season as detailed in Appendix B.

2.2.4. Roads not on the Precautionary Salting Network and footways are not normally treated on a precautionary basis, the exception being at times of Severe or Extreme forecasts of snow as defined in Section 2.3.

2.3. Severe winter weather and extreme winter weather

2.3.1. Severe winter weather is defined as persistent widespread ice (rather than frost) or snow for more than 18 hours in a 24hour period and a forecast not to rise above zero for a further 18 hours in the next 24 hours. Or a forecast, with a high confidence of significant snowfall resulting in accumulations of 5 cm or more or where drifting is expected and conditions are forecast to persist for at least 24 hours.

2.3.2. Extreme winter weather is defined as a period of widespread prolonged snow, following a period of severe winter weather, of sufficient depth to cause disruption to both the treated and non-treated highway network. During periods of extreme winter weather, we may not have sufficient resources available to treat either the severe weather route network or the footway networks, in addition to keeping the Precautionary Salting Network open. In these circumstances additional resource will be considered. The Executive Director of Place, as a Category 1 Responder, will declare an emergency under the Civil Contingencies Act 2004 and call for the setting up of a Strategic Co-ordination Group (see Section 3.6).

2.3.3. The definition of severe and extreme weather in a winter service context seeks to ensure consistency and define a standard when the public can expect the treatment of severe weather routes and footways to commence.

2.4. Severe weather routes

2.4.1. The Severe Weather Network for winter service operations contains routes that enable accessibility to important local services and villages. It consists mainly of carriageways leading to communities not covered by the Precautionary Salting Network.

2.4.2. The Severe Weather Network will only be gritted in times of severe or extreme weather, and after the security and accessibility of the Minimum Winter Network and Precautionary Salting Network has been assured by the Network Resilience Team.

2.4.3. The Network Resilience team will prepare a network of severe weather highway routes reflecting the above policy and will treat in whole or in part according to prevailing conditions.

2.4.4. Using the expertise and local knowledge from our Local Highways Managers alongside effective Asset data regarding the County's road network, the Severe Weather routes will incorporate a set of defined carriageways leading to important local facilities.

2.4.5. For reasons of safety, normally roads on the Severe Weather Network will only be treated during the hours of daylight.

2.5. Treatment priorities: triage system

2.5.1. At times of severe or extreme winter Weather and, or prolonged Winter Weather, as defined in Section 2.3, Network Resilience will instigate a Triage System ensuring there is a robust approach in the way the road network is managed and the gritting routes are prioritised during severe winter weather. The treatment priorities will be as follows:

i. Minimum Winter Network, known as the Resilient Network defined in Section 2.1.

ii. Carriageways on the approved 3,018 km Precautionary Salting Network as defined in Section 2.2.

iii. Carriageways on the Severe Weather Network as Section 2.4.

iv. Footways in accordance with Section 2.6.

2.5.2. The triage system will ensure the Minimum Winter Network routes; all included in the Resilient Network, are gritted and cleared as a first priority. The Precautionary Salting Routes will then be gritted as soon as the Resilient Network has been cleared and preserved. Following this, or if the severe weather prevails, Network Resilience will prompt the gritting on the Severe Weather Routes.

2.5.3. When dealing with snow bound or compacted ice on carriageways, treatments employing a mixture of salt and grit/sharp sand shall be first choice. In times of extremis and to aid traction, grit on its own should be considered for routes not on the Precautionary Salting Network and the Footway Network.

2.5.4. Variations in the above priorities may be necessary to suit local conditions and the efficient planning of treatment routes. Liaison between Districts will be undertaken prior to treatment of the Severe Weather Routes to ensure a consistent standard of service with adjacent areas when dealing with severe frost.

2.5.5. Remedial treatment decisions are based on the above priorities and knowledge of local conditions.

2.6. Footway treatment

2.6.1. During periods of severe or extreme winter weather the treatment of footways will be considered when resources permit. Footways to be treated will reflect their importance in the County's footway hierarchy as defined in the Highways Infrastructure Asset Management Plan. The footway priority network for winter service operations, in descending order of importance, consists of:

i. Hierarchy 1a. Each Area will keep a list of footways in and around Transport Interchanges, including footways to main car parks, designated Hierarchy 1a. The designation 1a will be for winter service purposes only.

ii. Hierarchy 1 and 2 footways.

iii. Hierarchy 3 footways with gradients greater than 1 in 10 longitudinally, for longer than 50 metres.

iv. Other Hierarchy 3 footways.

v. Hierarchy 4 footways.

2.6.2. When a period of severe or extreme winter weather, as defined in Section 2.3, is experienced or forecast consideration will be given to treating Hierarchy 1a footways prior to the onset of these conditions.

2.6.3. We have adopted the Midlands Service Improvement Group (Winter Maintenance) – Winter Service for Footways and Cycleways – Treatment Table as the winter service standard for footways and cycleways. See Appendix D.

2.7. Weather stations

2.7.1. A system of local weather stations will be operated and used both to feed into the weather forecast model and to monitor local conditions. A professional forecasting service will be used to guide treatment decisions.

2.7.2. We own and use 12 roadside weather stations around the County. These weather stations are positioned so that there are sufficient weather stations in each of Lincolnshire's 6 weather domains (Coastal, Wolds, Lincoln Edge, Trent Valley, Fenlands and Grantham) giving us data for accurate winter road forecasting for the gritter service as well as monitoring of actual data by our winter decision makers and Out of Hours staff.

We also have access to 10 other weather stations owned by National Highways and adjacent Authorities (with permission) that are in the County or close to our border. These are used to assist forecasters and decision makers in their gritting decisions, as well as being monitored by the Winter Team and Out of Hours staff (particularly in predicting severe weather events such as snow).

The data for these stations (actual and forecast) are displayed together in our weather station software package which is accessed by decision makers and the Winter Team.

2.7.3. Information from these sites is supplemented by information from adjacent sites in other Counties and fed into the weather forecast model. It is also used to check on temperature (air and road), humidity and wind speed. The sites enable both improved local forecasts to be obtained and actual conditions monitored. All the information can be accessed using a desktop or laptop PC, or on smartphones and tablets.

2.8. Decision making

2.8.1. During the winter service period of 1st October to 30th April, our trained staff (Duty Officers) will monitor weather forecasts and weather conditions on a 24-hour basis. This will enable treatment decisions to be tuned to changing winter weather conditions. The Duty Officer is authorised to make certain winter service treatment decisions as detailed below:

- During the normal working day there will be a Duty Officer on duty who is authorised to make precautionary salting treatment decisions.
- In addition, the Duty Officer will control all footway and Severe Weather Route treatment and during times of snow will liaise with Local Highway Managers and the Incident Control Rooms.
- The Duty Officer will also be available for consultation at all times.

2.8.2. At all other times winter service operations will be monitored and controlled by the Winter and Emergency Duty Officer on shift. These officers are authorised to make precautionary salting treatment decisions only. They will consult with the Duty Officer to maintain an input to all actions.

2.8.3. All Staff making winter service decisions shall be suitably trained. Competence is demonstrated by the following:

i. Completion of the MeteoGroup Road Weather Training Course

ii. Completion of the Vaisala Winter Weather Scenario Training

iii. Within a 5-year period, completion of one of the above courses as a refresher.

2.8.4. Guidance on the decision making process is contained within flowcharts at Appendix E, Appendix F and Appendix G.

2.9. Response times

2.9.1. The response required from the Term Contractor on the Precautionary Salting Network when an urgent precautionary salting call-out is notified is:

- Spreaders to be loaded and depart from operational bases within 1 hour.
- All routes to be treated within four hours of spreaders leaving the depot.

2.9.2. Initial decisions are to be notified to the Highway Works Term Contractor by 12:00 every day. Where possible, longer notice is given to the contractor of the time when treatment is to be started.

2.9.3. The winter service contract includes for a 1 hour response time. The treatment time for all routes is less than 3 hours.

2.10. Grit bins

2.10.1. Salt and grit bins will be provided and maintained on request if the location meets criteria set out in Appendix C and a responsible body undertakes to:

- Spread salt and, or grit when necessary; and
- Inform the Network Resilience Team when it needs refilling

2.10.2. Salt and grit bins shall only be filled with a 50/50 mixture of salt and grit or sharp sand.

2.10.3. These bins are provided on a self-help basis to local communities to treat known local trouble spots on the public highway not covered by the Priority Route Network.

2.10.4. A responsible body shall be defined as a parish or town council, community groups, residents association or educational establishments. We will only accept requests from those who would act as a responsible body.

2.10.5. Salt and grit bins will not be provided at sites which are prone to vandalism or other damage or where they have waste put in them.

2.10.6. Evaluation for additional Salt and grit bins requests will be carried out before each winter season. All requests will be considered and rated against a set of objective criteria with the assistance of grit bin evaluation form. This will be completed out of season as detailed in Appendix C.

2.10.7. A plan showing the location of existing grit bins can be found on our website.

2.10.8. We undertake to provide limited amounts of additional salt and, or grit in “one tonne sacks” to Parish Councils at agreed locations on request or during the summer following a severe winter.

2.11. Budget

2.11.1. Winter service expenditure in any single financial year is subject to the vagaries of the winter weather and annual fluctuations are catered for wherever possible within the highway service. Hence there can be large unpredictable fluctuations between years. The normal practice in a Severe or Extreme Winter has been for the excess expenditure over the budget to be financed from corporate contingency.

2.12. Plant

2.12.1. To ensure we have sufficient resources for our winter service operations we will provide as a minimum:

- 43 front line gritters
- four spare gritters
- 47 snow ploughs
- eight operational centres at which gritters and salt supplies will be based
- at the start of each winter season there will be a minimum of 25,000 tonnes of salt in stock.

2.12.2. The above resources will not always be needed but are the minimum deemed necessary to provide a reasonable level of service in all but the most severe conditions. At such times extra resources, including plant and labour, are hired in as necessary and as available.

2.12.3. Before the start of each winter season agreements are made with local farmers, hauliers and other contractors on such matters as plant and labour availability and hire rates.

2.13. Cross-boundary agreements

2.13.1. We will enter into cross border agreements to maximise efficiency and consistency of treatment with adjacent authorities on reciprocal treatment arrangements on certain roads. Where this occurs each authority will treat the section of road concerned in accordance with their authority's winter service policy and in agreement with an exchange of letters under Section 8 of the Highways Act 1980.

2.13.2. Section 3.11 contains a list of agreed cross boundary routes.

2.14. Road not gritted signs

2.14.1. We will not erect any additional permanent “road not gritted” signs on the network.

2.14.2. Existing signs on the network will continue to be maintained.

2.15. Mutual aid arrangements

2.15.1. Mutual aid arrangements shall be prepared, where possible, with all other Category 1 responders as defined under the Civil Contingencies Act 2004. These will come into operation during periods of Extreme Winter Weather as defined in Section 2.3.

2.15.2. An agreement in principle has been reached with the local NHS Trust to maintain access to all critical hospital sites within the county, which include:

- Lincoln County Hospital
- Grantham Hospital
- Pilgrim Hospital Boston
- John Coupland Hospital, Gainsborough
- Louth Hospital
- Skegness Hospital
- Johnson Hospital Spalding

2.15.3. The main access route into and through all of the above establishments will be maintained by a mainline gritter during this period if the local NHS Trust resources cannot cope. Salt may also be provided to enable the footways within the hospital grounds to be treated, with the NHS utilising its resources to maintain access on adjacent public highway footways. The above is subject to resource constraints at the time.

3. Procedures

3.1. Decision making process

3.1.1. The Duty Officer is in receipt of winter weather forecasts by approximately 11:00 daily and an instruction relating to precautionary salting normally will be passed to the Term Contractor by 12:00 on the same day. The instruction will be passed using the Bureau Service Provider's winter maintenance management software.

3.1.2. The Winter and Emergency Duty Officers will be responsible for decisions during any other time.

3.1.3. The decision relating to salting may take one of several forms:

- **Standby A**: Confirmed salting of all or specified routes where drivers and operators are to be given details of timings, salt loads and rate of spread.
- **Standby B**: Confirmed stand-by for a possible requirement for salting of all or specified routes where drivers are to report to the operational centre and to be immediately available to perform duties as we require.
- **Standby C**: No action at present but drivers to remain available to go if required over the next 24 hours.
- **Standby D**: Precautionary salting is unlikely to be required over the next 24 hours.

3.1.4. Response times are defined as the period between issuing instructions to carry out salting and the vehicles are loaded, manned and ready to leave the depot. On all salting operations, the response time shall not exceed one hour unless approved by the Duty Officer regardless of the time of day or night that the instruction is given. The Highway Works Term Contractor shall ensure that all manpower engaged upon these operations can achieve this specified response time.

3.1.5. Standby is a requirement for drivers and operatives to report at a specified time to the depot in readiness to carry out winter service operations. This item will also apply in the event of a precautionary salting run abandoned before vehicles have left the depot.

3.1.6. Decisions will only be made by members of staff who comply with the requirements in Section 2.8.

3.1.7. Decisions will be made using the Precautionary Salting Flow Charts found at Appendix E, Appendix F and Appendix G and will take into account other factors including:

- Any expected residual salt level based on professional experience and utilising the grip factor readings from the roadside weather station system.

- Professional guidance from the Forecast Service Provider.
- Decision to treat only part of the priority network can be taken utilising Route Based Forecast.

3.1.8. It is acknowledged, that on occasions, part(s) of the Precautionary Salting Network may experience localised isolated or limited extents of ice or hoar frost, such as bridge decks. This is due to local meteorological conditions. In these circumstances no treatment will take place; it is the primary responsibility of the motorist to take care of their own safety.

3.2. Salt and salt storage

3.2.1. Where possible all salt stocks will be kept under cover in salt barns. Where this is not possible, all external salt stocks will be kept covered using waterproof sheeting systems.

3.2.2. All salt will be regularly tested for compliance with standards set out by Lincs Laboratory.

3.2.3. We utilise treated salt to grit its network.

3.2.4. Treated salt operates with brown salt that has been treated with a natural agricultural by product. Such treatment causes the salt to adhere to the carriageway, making it less susceptible to losses from wind and allowing for lower spread rates.

3.2.5. The treated salt will be managed using a stock management system which will allow for regular topping up of the salt stock. It is our policy to top up our treated salt stock after the use of 500 tonnes of salt per depot.

Ordinarily salt stocks shall be maintained to ensure a minimum of 15,000 tonnes is available at any one time across the county, with a minimum of 25,000 tonnes available at the start of the season. This has been altered recently in accordance with national standards and practices that have been developed for nationwide snow conditions.

3.3. Precautionary salting

3.3.1. Roads off the Precautionary Salting Network are not normally treated on a precautionary basis. They may only be treated due to localised factor such as a burst water main or standing water due to field runoff.

3.3.2. Precautionary salting may also be carried out on Severe Weather Routes when prolonged low temperatures, with attendant risk of icy roads, or persistent frosts occur in accordance with Section 2.3 and Section 2.15.

3.3.3. 43 dedicated front-line gritters shall be utilised for precautionary salting.

3.3.4. Four spare gritters shall be utilised as back-ups to front line gritters, located strategically at depots across the County.

3.3.5. Treatment time shall be a maximum of three hours.

3.3.6. Any Precautionary Salting Route not completed when road temperatures rise above 0.5 degrees Centigrade will be reviewed by the Winter and Emergency Duty Officer and a decision made whether or not to stop salting.

3.3.7. Network Resilience staff will have access to the Bureau Service Provider's Management system and the Forecast Service Provider's systems.

3.3.8. In the event of uncertain weather forecasts, decisions should be weighted in favour of salting.

3.3.9. The winter service season is divided into two periods:

- High risk - November to March.
- Low risk - October and April (instructions are only issued when salting is required).

3.3.10. We will not respond to requests for treatment off the gritted network by the Police, unless as detailed in 3.3.1.

3.3.11. Precautionary spreading operations are carried out utilising treated salt.

3.4. Treatments for snow, ice and freezing rain

3.4.1. We have a statutory duty under Section 150 of the Highways Act 1980 to remove obstructions. Snow is considered to be an obstruction when it impedes the use of the road network.

3.4.2. The Forecast Service Provider will provide national weather warnings if any sizeable accumulations of snow are expected.

3.4.3. The following are treatments timings for snow and ice:

Timing of Treatment	**Treatment Type**
Before snowfall and freezing rain	Salt spreading

Timing of Treatment	Treatment Type
During freezing rain, or where there are minor accumulations of ice	Salt spreading
After snowfall when there is slush on the road	Ploughing Salt spreading
After snowfall when there is compacted snow or ice on the road	Ploughing Salt spreading Salt and abrasive mixtures Abrasives only

3.4.4. When snow is forecast advanced salting at 20g per m² dry will take place on the Precautionary Salting Routes. Time permitting a further run may be carried out to increase salt coverage to 40g per m² dry. Pre-snow salting may be considered for Severe Weather Routes if time permits. This will provide a de-bonding layer and facilitate the breakup and dispersal of snow by subsequent treatments and traffic.

3.4.5. Depots which may be affected by the snow will be notified to the external contractor responsible for the maintenance of the vehicles, to inform them of the impending falls. They will be asked to ensure that fitters will be available to change plough blades etc. at these depots when required.

3.4.6. Snowfalls will be categorised into one of the following types:

- Heavy snowfall – Over 100mm or moderate snowfall is drifting. Normally dealt with by ploughing.
- Moderate snowfall – Over 25mm and up to 100mm. Normally will be dealt with by ploughing and salting.
- Light Snowfall - up to 25mm. normally will be dealt with by additional salting unless drifting occurs.

3.4.7. It is impractical to spread sufficient salt to melt more than very thin layers of snow and ice. Ploughing is the only economical, efficient, effective and environmentally acceptable way to deal with all but light snow. Therefore, when snowfalls are forecast that could create plough-able conditions (25mm or greater) the Highway Works Term Contractor will be contacted to fit ploughs to gritters and to arrange crews for clearing and salting footways.

3.4.8. Each vehicle will be given specific routes to plough.

3.4.9. The modern Schmidt Cirrion and equivalent snow ploughs with ceramic or steel blades fitted to the gritter fleet are designed to plough back to the carriageway surface (plough to black).

3.4.10. When heavy snowfall is forecast, the Network Resilience team will contact respective contractors and farmers to arrange additional resources.

3.4.11. When prolonged falls are forecast, continuous ploughing to prevent snow build-up should commence. The ploughing can be combined with simultaneous salting at 20 – 40g per m^2 Dry (Abrasive mixture 50/50 mixture of sand and salt to be considered) so that a wet base can be maintained. Once the snow depth has reached 100mm or the snow is drifting, or the gritter is salting on a gradient it may be desirable to plough without salt. (The salt should still be loaded as it will aid the traction of the gritter to the maximum legal weight limit of the vehicle. (i.e. (as a general rule) if the plough is fitted then the vehicle can carry a full hopper load of salt provided).

3.4.12. Roads with vertical speed humps will not be ploughed. Vertical speed humps must be detailed on all route cards for the driver, as their presence constitutes a driving hazard whilst carrying out ploughing operations.

3.4.13. As snow melts due to the action of salt, slush may build up on the road. Ploughing may have to continue to remove this slush build up.

3.4.14. If conditions deteriorate to an extent that resources cannot maintain the Precautionary Salting Network then certain roads will have to be abandoned.

3.4.15. Resources can be redeployed to maintain essential roads and when necessary be used to assist the emergency services in particularly urgent or life threatening situations. In these conditions the incident response room maybe set up in accordance with our Emergency Plan, at the Lincoln Emergency Planning Centre.

3.4.16. When conditions improve such that the Precautionary Salting Network is satisfactorily cleared then resources will then be directed to clearing firstly severe weather routes and then other routes in order of importance. Crews will be directed to clear other footways only after hierarchy 1a footways have been cleared and treated as set down in Section 2.6.

3.4.17. Snow Clearance Priority:

i. Minimum Winter Network.

ii. Precautionary Network (including access to emergency services buildings).

iii. Severe Weather Routes.

iv. Other important locations (including essential industrial and military establishments, mainline stations, bus garages, shopping centres, schools and pedestrian areas).

v. Other Commuter routes.

vi. Single accesses to villages, hamlets and rural communities.

vii. Residential roads and footways.

viii. Roads to single premises.

3.4.18. When snow clearing is in operation it is vitally important to liaise with neighbouring Districts and adjacent Authorities, particularly when moving from precautionary salting to snow clearing or vice versa, to avoid non-treatment of certain parts of the network. This is particularly important with reciprocal salting arrangements.

3.4.19. Priority should be given to footways in shopping areas and where there is a high proportion of pedestrian traffic, in accordance with Section 2.6.

3.4.20. Level Crossings – Network Rail or the appropriate rail authority should be contacted when ploughing starts by Local Highways Officers. This is to ensure that railway tracks at level crossings are not blocked by snow.

3.4.21. Post-snow action – The following work shall be given consideration after snow operations:

i. Clear all gullies and drainage outlets of obstructions.

ii. Sweep significant accumulations of grit from the carriageway and footways as soon as possible.

iii. Thoroughly wash down all vehicles and lubricate gritting equipment.

iv. Check all equipment and repair or replace all worn parts on snow ploughs, and report on plant performance to the network manager.

v. Salt stocks level should be closely monitored and replenished as necessary.

vi. Inspect roads for frost damage and carry out any remedial work necessary to make the carriageway free of safety defects.

vii. Inspect bridges and culverts liable to flooding to ensure that they are clear of debris.

viii. Carry out a survey of badly affected locations reporting to network management including a generalised assessment of other frost, snow or flood damage.

ix. Sign defects where appropriate, ensuring “flood” boards and other relevant signs are available.

x. Network Resilience Team to evaluate overall performance in consultation with Local Highways Teams, Term Contract and Fleet Services Contract staff, and recommending changes to procedures to be incorporated into this document.

3.5. Snow clearance protocol

3.5.1. Between 5pm and 8am at weekends and at bank holidays the Network Resilience Manager will be contacted by the Winter and Emergency Duty Officer when snow begins to fall. At other times the Duty Officer is to maintain close contact with the Forecast Service Provider when snow is forecast.

3.5.2. Out of Hours, the Duty Officer will contact the following staff as soon as it has been determined that ploughs are to be fitted:

- Network Resilience Manager
- Local Highways Managers
- Term Maintenance Contractor

3.5.3. If it is considered before the event that ploughs may be needed during the night, the Network Resilience Manager and Local Highways Managers should be aware of such action.

3.5.4. Snow clearing operations based on the non-Precautionary Salting Network will be coordinated by the Network Resilience team in liaison with Local Highways Managers. Operational instructions will be passed to the Term Maintenance Contractor who will be based at the operational depots, plus other Contractors.

3.5.5. The Network Resilience Manager will normally be in overall control of decisions such as when the Precautionary Salting Network is satisfactory for moving to Severe Weather Routes.

3.5.6. The Network Resilience Team are to ensure that the details of plant in use are recorded on a daily basis during periods of snow.

3.5.7. In the event of a Network Operations Room being opened for snow conditions as part of a Level 1 Emergency (as defined in our Incident Response Plan as part of our Emergency contingency planning) a road condition report will be completed by the Network Operations Room staff and forwarded to the Network Resilience team as soon after 9am as possible daily.

3.5.8. As soon as possible after the incident the Network Resilience team will agree with the Highway Works Term Contractor the labour and plant used and finalise an incident plan

report. This will form the basis of an agreed measurement duly signed by both Client and Contractors. Note: All contract item numbers to be agreed at this stage.

3.5.9. The agreed report will also contain details of salt and grit used which should be used to update records of salt stocks.

3.5.10. During snow operations where Contractor Patrol Crews (a two-man team from the Contractor) are employed between the hours of 7pm and 6am, although allocated to predetermined routes, the Winter and Emergency Duty Officer may be required to direct these crews to other locations within the County. A detail log of action should be emailed by the Winter and Emergency Duty Officer to the relevant Local Highways Manager by 6am the following day.

3.6. Incident response room (multi – agency emergency)

3.6.1. The Executive Director of Place, as a Category 1 Responder, will declare an Emergency under the Civil Contingencies Act 2004 and call for the setting up a Strategic Coordination Group – see Section 2.3 for further details. This will be in accordance with the Lincolnshire Resilience Forum's Severe Weather Plan and our Incident Response Plan.

3.6.2. The following organisations may have representatives in the incident response room when it is in operation:

- Lincolnshire County Council Highways and Transportation
- Lincolnshire Police
- Lincolnshire Fire Brigade
- Health Authority Ambulance Service
- District Councils

3.6.3. The incident response room will be set up in the Lincoln Emergency Planning Centre at Lincolnshire Fire and Rescue Headquarters.

3.6.4. The Police will inform Highways and Transportation, when the actual, or expected levels of public calls become significantly greater than normal switchboard manning can handle or there is an increase in road traffic collisions.

3.6.5. The Winter and Emergency Duty Officer will transfer to and operate from the incident response room.

3.6.6. Once the decision is made to open the incident response room it should be activated as quickly as possible. This should be within four hours.

3.6.7. The main task of the Highways Representative once communications are established is to make contact with each Local Highways Manager to determine the initial status of the County's roads. This information is then plotted on the wall map in the incident response room.

3.6.8. Once sufficient information is available and the public phone lines are in operation through the Customer Service Centre, these phone numbers are broadcast by local radio thus enabling the public to make contact. The Executive Director of Place is then informed that the incident response room is "going public".

3.6.9. The primary task of the Highways Representative is to maintain a constant flow of up-to-date information to the other liaison officers and the public phone desks. Information is then circulated in the incident response room.

3.6.10. Local knowledge of villages and the road network should be passed by Local Highways Staff to the Highway Representative.

3.6.11. The Highways Representative has no dealings in the operational role of controlling snowploughs, other vehicles or the control of the labour force except in an emergency situation (in agreement with relevant District).

3.6.12. The police will trace owners of abandoned vehicles and contact them.

3.6.13. A supply of forms and copies of "Winter Maintenance Route" maps are kept for reference purposes.

3.6.14. Police emergencies are mainly missing person problems. This is usually dealt with at Police Divisional level, but where a significant problem occurs then this is transferred to Police Headquarters. In both situations the police may request that the snow clearing vehicles are asked to keep a look-out for people or bodies on the highway in certain specific locations. This request is passed initially to the Network Manager who may authorise direct contact between snow clearing vehicles and the incident response room for further updates.

3.6.15. Fire and medical emergencies usually concern blocked roads on the route to a life and death situation which require us to assist in clearing passage for vehicles to their destination and return. In this case it is the responsibility of the Network Manager to arrange reallocation of resources.

3.6.16. In an emergency situation, after the initial reaction has been dealt with, then the Executive Director of Place must be informed of any changes in the situation and the final outcome.

3.6.17. The callout of RAF or Army equipment (helicopters, ambulances, fire fighting and snow clearance equipment) is in the hand of relevant emergency services and Assistant Director (Highways) or Executive Director of Place. The Highways Representative in the incident response room has NO authority to call upon this equipment, but when such equipment has been called upon then liaison is the same as above.

3.6.18. This process forms part of a Level 3 Response as defined in our Incident Response Plan as a Highways and Flood Authority. For smaller scale severe weather events, the Level 0, 1 and 2 processes in this document will be followed.

3.7. Media

3.7.1. Coverage by the media of winter service and particularly snow clearance is important in making the public aware of the service provided and what roads are open or closed.

3.7.2. We will need to establish working arrangements with the local media to enable the presentation of timely and accurate information of which roads are open and which are closed. Local radio in particular considers this to be an important part of their broadcasting duties, and therefore provides an opportunity to build a good working relationship over wider issues.

3.7.3. It is important for us to clarify and agree respective services and specialist responsibilities with people dealing with the media.

3.7.4. It is important to define and agree key contacts with the press and broadcasting media and establish a clear understanding of the most effective timings for information to be provided in order to reach necessary audiences and broadcast schedules.

3.7.5. Information on costs, salt usage, plant usage, manpower etc. will be calculated by the Network Resilience Team.

3.7.6. In addition to supplying information to the press it is important to inform key stakeholders (these including emergency services, public transport operators, motoring organisations, key local organisations and County Councillors).

3.7.7. Our Media Service, Customer Service Centre staff and the Winter and Emergency Duty Officer will utilise Twitter to engage with and disseminate treatment actions and issues to the travelling public via Smartphone technology.

3.8. Weather forecast service

3.8.1. Routine forecasts and updates will be issued by the Forecast Service Provider via their own web-based service and displayed via the Bureau Service Provider's online management software in the following format:

11:00 Forecast

- A summary 24 hour forecast for the County.
- Detailed forecast for each of the 43 Precautionary Salting Routes.

17:00 Evening Update

- An update for the overnight period of each of the 43 Precautionary Salting Routes.

Amendments

- If significant changes take place, then the forecast is amended.

3.8.2. The Forecast Service Provider will amend the forecast at any time:

- If there is a change from "no frost" forecast to a "frost" or when the road minimum is between plus and minus three degrees Celsius and there is a sustained difference between the forecast and actual graphical curve of two degrees Centigrade or more.
- When there are significant changes to rainfall intensity and timing and road frost is expected or a significant change to snowfall is forecast.

3.8.3. As well as updating the Internet systems, the Forecast Service Provider will contact Network Resilience during working hours who will in turn contact the Winter and Emergency Duty Officer at all other times.

3.8.4. A 24-hour consultancy service is provided by the Forecast Service Provider, available to all staff.

Note: In the event of the internet systems not operating, the above forecasts will be emailed to Network Resilience Staff by the Forecast Service Provider.

3.9. Route based forecasting

3.9.1. In the past, the forecast provided to Lincolnshire was domain based, covering large geographical areas. This led to treatment instructions for whole areas, meaning that some roads may have been treated despite not actually reaching a temperature where a hazard could form.

3.9.2. Innovations in forecasting technology now allow the Forecast Service Provider to provide a "route based forecast", which is effectively an individual forecast for each of the 43 precautionary salting routes, each of which is divided into multiple sections.

3.9.3. The worst-case scenario for each of the routes is used for precautionary salting routes. If one section of the route is forecast to experience a hazard, the whole route will be treated.

3.9.4. Route-based forecasting allows for a much more efficient precautionary salting service, as on marginal nights (generally at the start and end of the winter season) many of the 43 routes will not need to be treated. This saves not only on salt, but on labour costs and maintenance of vehicles.

3.9.5. Route-based forecasting does not provide benefits in prolonged periods of very cold weather, as it is likely that all of the precautionary salting routes will have hazards forecast at some point overnight. The benefits are realised in mild winters, where traditionally the technology has not been available to avoid over-treatment.

3.9.6. In future, it is possible that further granularity in treatment of the network will become available through emerging technology. We attend various national groups and monitors best practice and will continue to trial new options as they become available, to deliver the most efficient service possible.

3.10. Treatment flowcharts

3.10.1. Decision making flowcharts have been produced, which should be utilised during the winter service decision making process. The flowcharts provide operational guidance, and professional judgement by competent decision makers should always be applied when coming up with treatments.

Dry or Damp Roads – Please see Appendix E.

Wet Roads – Please see Appendix F.

Snow Clearance – Please see Appendix G.

3.11. Cross boundary agreements

3.11.1. Cross boundary agreements have been developed following liaison and communication with neighbouring authorities.

3.11.2. Liaison takes place with other local authorities responsible for winter service on roads within and adjacent to the county regarding their treated routes and treatment decisions. Additionally, there is an exchange of treatment action instructions.

3.11.3. Any road treated by an adjoining authority would be treated in accordance with that authority's policies for operational purposes and not the local highway authority's policies.

3.11.4. The current cross boundary agreements with neighbouring authorities are as follows:

- Cambridgeshire
- Leicestershire
- North Lincolnshire
- North East Lincolnshire
- Nottinghamshire
- Peterborough
- Rutland

Roads gritted by North Lincolnshire on behalf of Lincolnshire County Council:

- C227 from County Boundary to C228 High Street East in Scotter village.
- A159 from County Boundary to junction with C228 High Street East in Scotter village.
- B1211 from County Boundary to B1210 north for Brocklesby.
- B1210 from County Boundary to B1211 north for Brocklesby.
- B1400 from County Boundary south of Scallow Grove to County Boundary at Black Walk Nook.
- C221 from County Boundary to A159 junction in Scotter.

Roads gritted by Lincolnshire County Council on behalf of North Lincolnshire:

- A18 from County Boundary to junction with B1210.
- B1210 from County Boundary to junction with A18.
- A1084 from County Boundary to A18 roundabout in Brigg.
- B1434 from County Boundary to County Boundary.
- B1205 from County Boundary to County Boundary.

Roads gritted by Nottinghamshire on behalf of Lincolnshire County Council:

- A1133 length in Lincolnshire near Girton.
- A1133 from County Boundary to A57 at Newton-on-Trent.
- A57 from western junction with A1133 west to County Boundary.
- A631 from County Boundary over Gainsborough Bridge to A156.

Roads gritted by Lincolnshire County Council on behalf of Nottinghamshire:

- A17 from County Boundary west of Beckingham in Lincolnshire to the roundabout at the junction with C208 Beacon Hill Road and Stapleford Lane including the western side of the roundabout.
- C412 from County Boundary at Balderfield to B6326.
- Spalford Road from County Boundary through Spalford to A1133.
- In times of prolonged freezing:
  - C158 (C82) from Lincolnshire/Nottinghamshire boundary near North
  - Scarle to the A1133 at Besthorpe.
  - C163 (C128) from Lincolnshire/Nottinghamshire boundary near Swinderby to the A1133 at Collingham.
  - C123 (C44) from Lincolnshire/Nottinghamshire boundary near Stapleford to the A17 near Coddington.

Roads gritted by Peterborough CC on behalf of Lincolnshire County Council:

- B1081 from County Boundary to A43.
- B1443 from A43 junction east to County Boundary.
- A43 from junction with B1443 to County Boundary.
- New A16 from new roundabout at A16/A1073 junction, Crowland to County Boundary.
- Existing A1073 from new roundabout at A16/A1073 junction, Crowland to County Boundary.

Roads gritted by Lincolnshire County Council on behalf of Peterborough CC:

- A15 from A16/B1525 roundabout across County Boundary to A15/B1524 roundabout.

- B1524 from B1525 roundabout to A15 Maxey roundabout.

Roads gritted by Rutland on behalf of Lincolnshire County Council:

- A606 from County Boundary to the junction with B1081.
- B1081 from County Boundary to junction with A606.
- C432 from County Boundary to junction with C431 Station Road.

Roads gritted by Lincolnshire County Council on behalf of Rutland:

- B1176 from County Boundary to A6121 north of Ryhall.
- A6121 from County Boundary to County Boundary through Ryhall.

Roads gritted by Lincolnshire County Council on behalf of Cambridgeshire:

- Bythorne Bank from Chapel Gate at County Boundary to Cross Drove.
- B1166 from County Boundary at South Eau Bank crossing bridge to Marshall's Bank.

Roads gritted by Leicestershire on behalf of Lincolnshire County Council:

- C427 from County Boundary (north east of Normanton) to Long Bennington C418 Main Road.

Roads gritted by Lincolnshire County Council on behalf of Leicestershire:

- C440 from County Boundary to Harston village junction with Denton Lane.
- C492 from County Boundary to Harston village junction with Woolthorpe Lane.

Roads gritted by North East Lincolnshire on behalf of Lincolnshire County Council:

- A1173 from County Boundary to junction with A18.
- Hatcliffe Road from B1203 to County Boundary.
- C243 Stallingborough Road from South Street to County Boundary.

Roads gritted by Lincolnshire County Council on behalf of North East Lincolnshire:

- A46 from County Boundary going east to A46 roundabout.
- Old Main Road from A46 through Irby upon Humber to A46.
- A18 from County Boundary to C638 Whites Road.

- A16 from County Boundary to B1219 roundabout.
- A1031 from County Boundary to junction with B1219.

3.12. Public self-help guidance literature

3.12.1. Based on national guidance issued by the Department for Transport, Lincolnshire has produced two self-help documents. These are:

- Clearing Snow off the Carriageway (Appendix H).
- Clearing Snow from Footways (Appendix I).

3.12.2. These will continue to be distributed to the Parish and District Councils and the public via our website.

3.13. Use of rebated diesel oil (red diesel)

3.13.1. As of April 2022 the use of red diesel in a gritter is no longer permitted. Therefore, all gritters are to use normal white diesel and pay any duty accordingly on that fuel.

3.13.2. Agricultural vehicles are considered an excepted vehicle when undertaking gritting or snow ploughing activities for frost, snow or ice clearance on public roads and therefore are permitted to use red diesel.

3.14. Mutual aid and self-help arrangements with Parish and District Councils during a multi-agency response

3.14.1. As part of a cross cutting action to engage with all communities within the county concerning how all parties could work together in times of emergency and crisis the following actions will be undertaken.

3.14.2. Highways staff will engage with all District Councils concerning mutual aid in times of severe weather. A Lincolnshire Resilience Forum agreement has been developed with individual District Councils to outline mutual aid arrangements.

3.14.3. Highways staff will engage with Town or Parish Councils and other Community Groups to encourage participation in a programme of self-help and mutual aid. The aim being to provide a framework within which willing, locally based volunteers clear snow within key areas of their community.

3.14.4. Parish or Town Councils are encouraged to develop a snow and ice plan as part of their Community Emergency Plan.

Appendix A – Main villages in Lincolnshire

Main villages were defined in the County Structure Plan between 1981 and 1991 and updated on a later submission to the Secretary of State as the following villages:

Boston Borough

- Butterwick
- Kirton
- Old Leake
- Sutterton
- Swineshead

East Lindsey District

- Binbrook
- Burgh le Marsh
- Chapel St Leonards
- Grimoldby/Manby
- Holton le Clay
- Legbourne
- Mareham le Fen
- North Somercotes
- North Thoresby
- Sibsey
- Stickney
- Tetford
- Tetney
- Wainfleet
- Woodhall Spa
- Wragby

North Kesteven District

- Bassingham
- Billinghay
- Branston
- Eagle

- Heckington
- Heighington
- Helpringham
- Metheringham
- Navenby
- Ruskington
- Skellingthorpe
- Swinderby
- Waddington
- Washingborough

South Holland District

- Cowbit
- Deeping St Nicholas
- Donington
- The Droves (Gedney Hill, Holbeach Drove, Whaplode Drove, Shepeau Stow) *
- Gosberton
- Moulton
- Pinchbeck
- Weston
- Whaplode

South Kesteven District

- Ancaster
- Barrowby
- Baston
- Billingborough
- Caythorpe
- Claypole
- Colsterworth
- Corby Glen
- Great Gonerby
- Langtoft
- Long Bennington

- Morton
- Rippingale
- South Witham
- Thurlby

West Lindsey District

- Bardney
- Blyton
- Cherry Willingham
- Dunholme
- Ingham
- Keelby
- Nettleham
- North Kelsey
- Saxilby
- Scotter
- Sturton by Stow
- Sudbrooke
- Welton

These villages are considered as per section 2.1.1.

Appendix B – Network Evaluation Form

Reference No.	

Requested by	
Location	
Road name and number	
Distance (m)	
Average width of road	
Obstructions to gritting observations (speed retarders, access for plough etc)	

Assessment	**Yes or No**	**Instruction**
1. Is the road suitable for gritters (width, ability to exit/turn without reversing etc)?		**If no - do not proceed**
2. Is a reasonable alternative treated route available?		**If yes - do not proceed**
3. Is sufficient capacity available on relevant route?		**If no - do not proceed**

Item	**Points**	**Occ.**	**Road Speed**	**Total**
Public Service Bus Route (daily) *Service provided at least 5 days/week*	20			
Public Service Bus Route (less than daily) *Service provided at least 5 days/week*	10			
School Bus Route - *Contract route (16+ seater PCV Licence required)*	20			
Injury Accident Record (last three years) *Ice and snow related – 15 points per reported accident*	15			
Health Centre on Route - *GP Practice*	15			
Railway / Bus Station on Route - *15 points awarded for each*	15			
Bends *5 points each*	5		< = 30	
			31 - 50	
			51 >	
Junctions *1 point each*	1		< = 30	
			31 - 50	
			51 >	
Steep Gradient *10 points if 1 or more gradients (>1 in 15 over 50m)*	10			
Deep Drains or Water Course Adjacent to Road *10 points / side (over 2m from C/Way level to bed level*	10			
Ditches *(5 points / side (within 1m of C/Way, less than 2m deep)*	5			
Only 1 public service or school bus scores to be used. Road Speed: up to 30mph = x1, 31mph to 50mph = x2, 51mph and above = x3			**Total Points Score**	

Total Points Score		Divided by Road Length		= Final Score	

Engineering Comments

Appendix C – Evaluation for additional grit bins

1. Initial Check

Q1. Requested by responsible body?

If yes then continue to the next question

If no then do not continue

Q2. Maintainable public highway?

If yes then continue to the next question

If no then do not continue

Q3. Suitable location?

If yes then continue to scoring

If no then do not continue

2. Scoring

Gradient	Number of points
More than 1 in 25	50 points
Less than 1 in 25	0 points

Proximity of existing grit bins	Number of points
Less than 50 metres	-150 points
51 to 100 metres	-50 points
101 to 200 metres	0 points
More than 200 metres	20 points

Number of premises (only access route)	Number of points
More than 50	20 points
20 to 50	10 points
Less than 20	0 points

Community facilities (less than 200 meters radius of proposed grit bin)	Number of points
School	20 points
Post Office or local shop	10 points
Local shopping centre	20 points
Community or medical centre	10 points

Winter network (location of proposed grit bin)	**Number of points**
Precautionary	-150 points
Severe	30 points
Not on winter network	0 points

Number of refills within the last 12 months	**Number of points**
0	-10 points
1	0 points
2 or more	5 points

Total score	**Number of points**
Pass	50 or more points
Fail	Less than 50 points

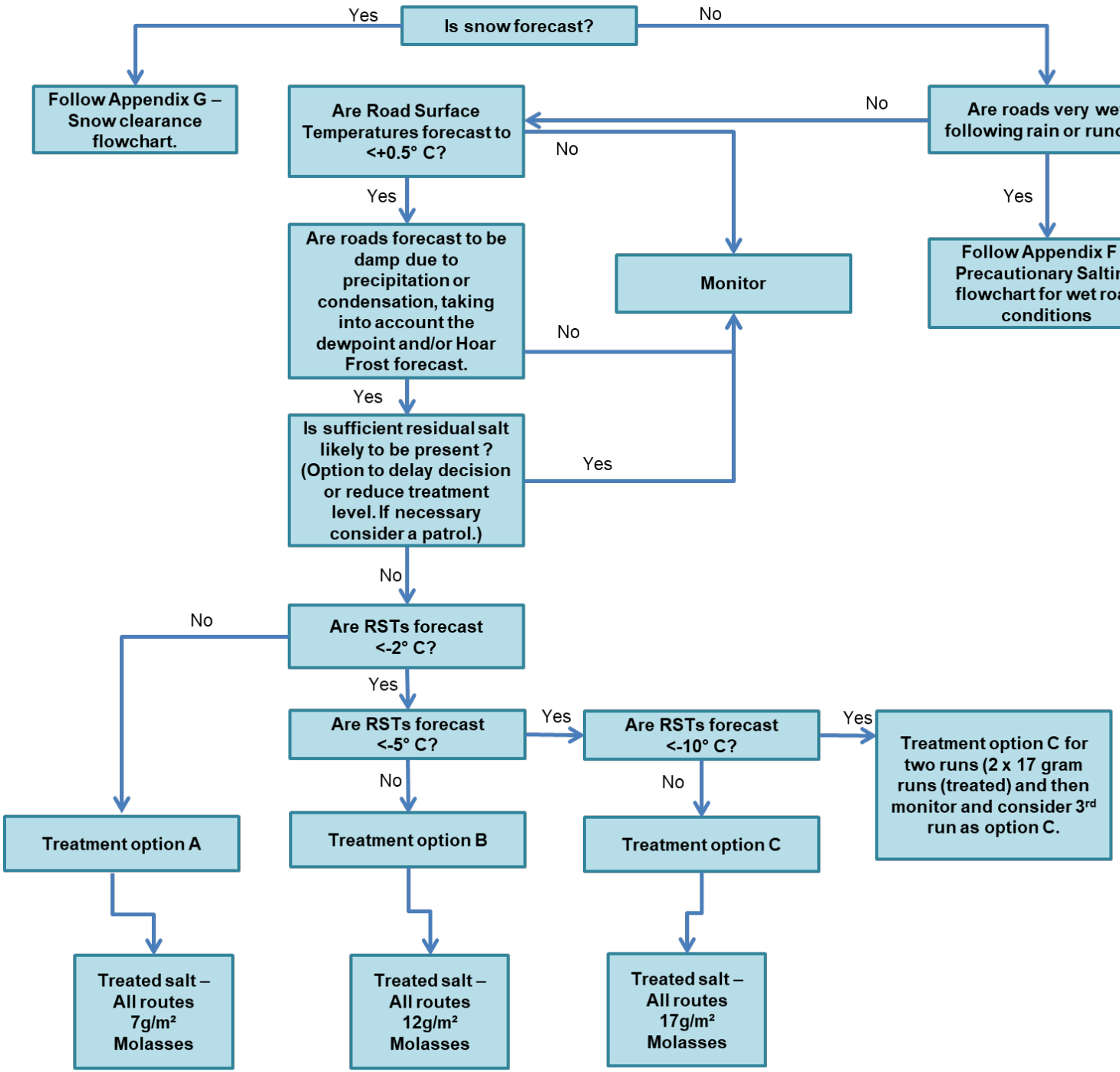
Appendix D – Midlands service improvement group – winter service for footways and cycleways

Category	Overnight Frost Conditions (Overnight forecast temperatures below zero but not extending beyond 8am)	Daytime Frost Conditions (Overnight forecast temperatures below zero extending beyond 8am)	Extended Ice Conditions (Persistent widespread ice (rather than frost) for more than 18 hours in a 24-hour period and a forecast not to rise above zero for a further 18 hours in the next 24 hours.)	Snow Events
1a	No treatment	Precautionary treatment	Monitor and further treatment as required when resources permit. Treatment only during normal working hours.	Snow removal will commence when resources come available from higher priority treatments. Endeavours will be made to complete clearance within 12 hours of cessation of snowfall, subject to availability of resources. Treatment only during normal working hours.
1	No treatment	No treatment	Monitor and treatment as required when resources permit. Treatment only during normal working hours.	Snow removal will commence when resources come available from higher priority treatments. Endeavours will be made to commence clearance within 24 hours of cessation of snowfall, subject to availability of resources. Treatment only during normal working hours.

Category	**Overnight Frost Conditions** (Overnight forecast temperatures below zero but not extending beyond 8am)	**Daytime Frost Conditions** (Overnight forecast temperatures below zero extending beyond 8am)	**Extended Ice Conditions** (Persistent widespread ice (rather than frost) for more than 18 hours in a 24-hour period and a forecast not to rise above zero for a further 18 hours in the next 24 hours.)	**Snow Events**
2	No treatment	No treatment	Monitor and treatment as required when resources permit. Treatment only during normal working hours.	Snow removal will commence when resources come available from higher priority treatments. Endeavours will be made to commence clearance within 48 hours of cessation of snowfall, subject to availability of resources. Treatment only during normal working hours.
3 and 4	No treatment	No treatment	Reactive treatment not normally undertaken other than in response to specific circumstances. Treatment only during normal working hours.	Snow removal will commence when resources come available from higher priority treatments. Endeavours will be made to commence clearance within 5 days of cessation of snowfall, subject to availability of resources. Treatment only during normal working hours.

Note: At all times priority will be given to the Precautionary Salting Network. Combined footway and cycleways are treated in accordance with footway hierarchy. Segregated cycleways are not treated.

Appendix E – Precautionary salting for dry or damp road conditions flowchart



Notes:

General

1. The treatment time should allow for all routes to be treated prior to ice forming - subject to residual salt.
2. The latest callout time in the morning to ensure completion of precautionary route network prior to the rush hour is 0300hrs.
3. Runs may be times to avoid rush hour traffic. This is to prevent low speeds and stop/start manoeuvres where spread patterns become ineffective.
4. All routes to be completed after rainfall. If rainfall occurs during the run the treatment should be suspended and recommenced once rain ceases. If rainfall is heavy reconsider treating the whole route again.
5. Decision Matrix based on guidance contained within Winter Service section of Well-Managed Highways Code of Practice for Highway Maintenance Management Winter Section and the NWSRG guides Treatments for Ice and Snow.

Treatment Times

1. For situations of high or medium confidence forecast of a morning Hoar Frost, treatments can be made so that gritting runs are completed by 2330hrs the previous evening.

Treatment Rates

1. Dry salting – Note MAXIMUM spread rate 20g/m²
2. Treatment rates at specific depots may be altered to take account of moisture content of salt following laboratory tests. Maximum allowable moisture content is 4%.
3. Road temperatures for decision making to be based on domain text minimums and Route Based Forecast minimums. This is to take into account known frost hollows on the treated network.

Duration of Treatment

1. If period below freezing to exceed 8 hours then Grip Factor to be monitored and if necessary a second run to be considered.
2. Second runs carried out within 6 hours of initial treatment may be at 50% of the initial spread rates if no runoff water or ice present.

Prolonged Spells of Ice/Snow

1. Consideration to be given to running routes in reverse during prolonged periods of continuous operations.

Appendix E - Precautionary salting for dry or damp road conditions flowchart description

Step 1 – is snow forecast?

- If yes, follow Appendix G – Snow clearance
- If no, go to Step 2

Step 2 – are roads very wet following rain or runoff?

- If yes, follow Appendix F – Precautionary salting for wet road conditions
- If no, go to Step 3

Step 3 – are road surface temperatures forecast to <+0.5^{o}C?

- If yes, go to Step 4
- If no, monitor

Step 4 - are roads forecast to be damp due to precipitation or condensation, taking into account the dewpoint and or Hoar Frost forecast?

- If yes, go to Step 5
- If no, monitor

Step 5 – is sufficient residual salt like to be present? (Option to delay decision or reduce treatment level. If necessary, consider a patrol).

- If yes, monitor
- If no, go to Step 6

Step 6 – are RSTs forecast <-2^{o}C?

- If yes, go to Step 7
- If no, treatment option A – treated salt. All routes 7g per m^2 molasses

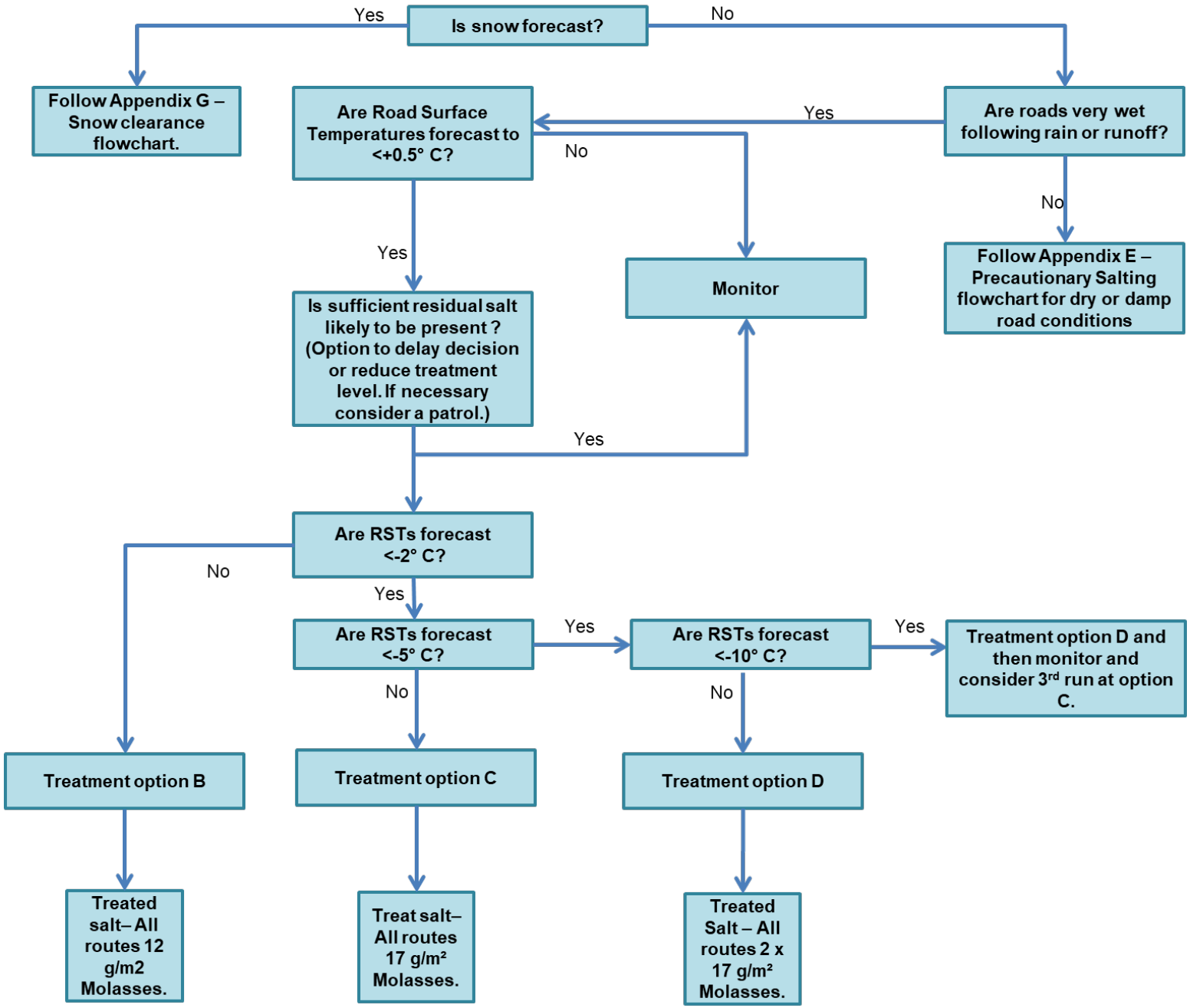
Step 7 – are RSTs forecast <-5^{o}C?

- If yes, go to Step 8
- If no, treatment option b – treated salt. All routes 12g per m^2 molasses

Step 8 - are RSTs forecast <-10^{o}C?

- If yes, treatment option C for two runs (2 x 17g runs (treated) and then monitor and consider third run as option C
- If no, treatment option C – treated salt. All routes 17g per m^2 molasses

Appendix F – Precautionary salting for wet road conditions flowchart



Notes:

General

1. The treatment time should allow for all routes to be treated prior to ice forming - subject to residual salt.
2. The latest callout time in the morning to ensure completion of precautionary route network prior to the rush hour is 0300hrs.
3. Runs may be times to avoid rush hour traffic. This is to prevent low speeds and stop/start manoeuvres where spread patterns become ineffective.
4. All routes to be completed after rainfall. If rainfall occurs during the run the treatment should be suspended and recommenced once rain ceases. If rainfall is heavy reconsider treating the whole route again.
5. Decision Matrix based on guidance contained within Winter Service section of Well-Managed Highways Code of Practice for Highway Maintenance Management and the NWSRG guides Treatments for Ice and Snow

Treatment Rates

1. Dry salting – Note MAXIMUM spread rate 20g/m² .
2. Treatment rates at specific depots may be altered to take account of moisture content of salt following laboratory tests. Maximum allowable moisture content is 4%.
3. Road temperatures for decision making to be based on domain text minimums and Route Based Forecast minimums. This is to take into account known frost hollows on the treated network.

Duration of Treatment

1. If period below freezing to exceed 8 hours then Grip Factor to be monitored and if necessary, a second run to be considered.
2. Second runs carried out within 6 hours of initial treatment may be at 50% of the initial spread rates if no runoff water or ice present.

Prolonged Spells of Ice/Snow

1. Consideration to be given to running routes in reverse during prolonged periods of continuous operations.

Appendix F - Chart 2 – Precautionary salting for wet road conditions flowchart description

Step 1 – is snow forecast?

- If yes, follow Appendix G – Snow clearance
- If no, go to Step 2

Step 2 – are roads very wet following rain or runoff?

- If yes, go to Step 3
- If no, follow Appendix E – Precautionary salting for dry or damp road conditions

Step 3 – are road surface temperatures forecast to <+0.5^{o}C?

- If yes, go to Step 4
- If no, monitor

Step 4 – is sufficient residual salt likely to be present? (Option to delay decision or reduce treatment level. If necessary, consider a patrol).

- If yes, monitor
- If no, go to Step 5

Step 5 – are RSTs forecast <-2^{o}C?

- If yes, go to Step 6
- If no, treatment option B, treated salt – all routes 12g per m^2 molasses

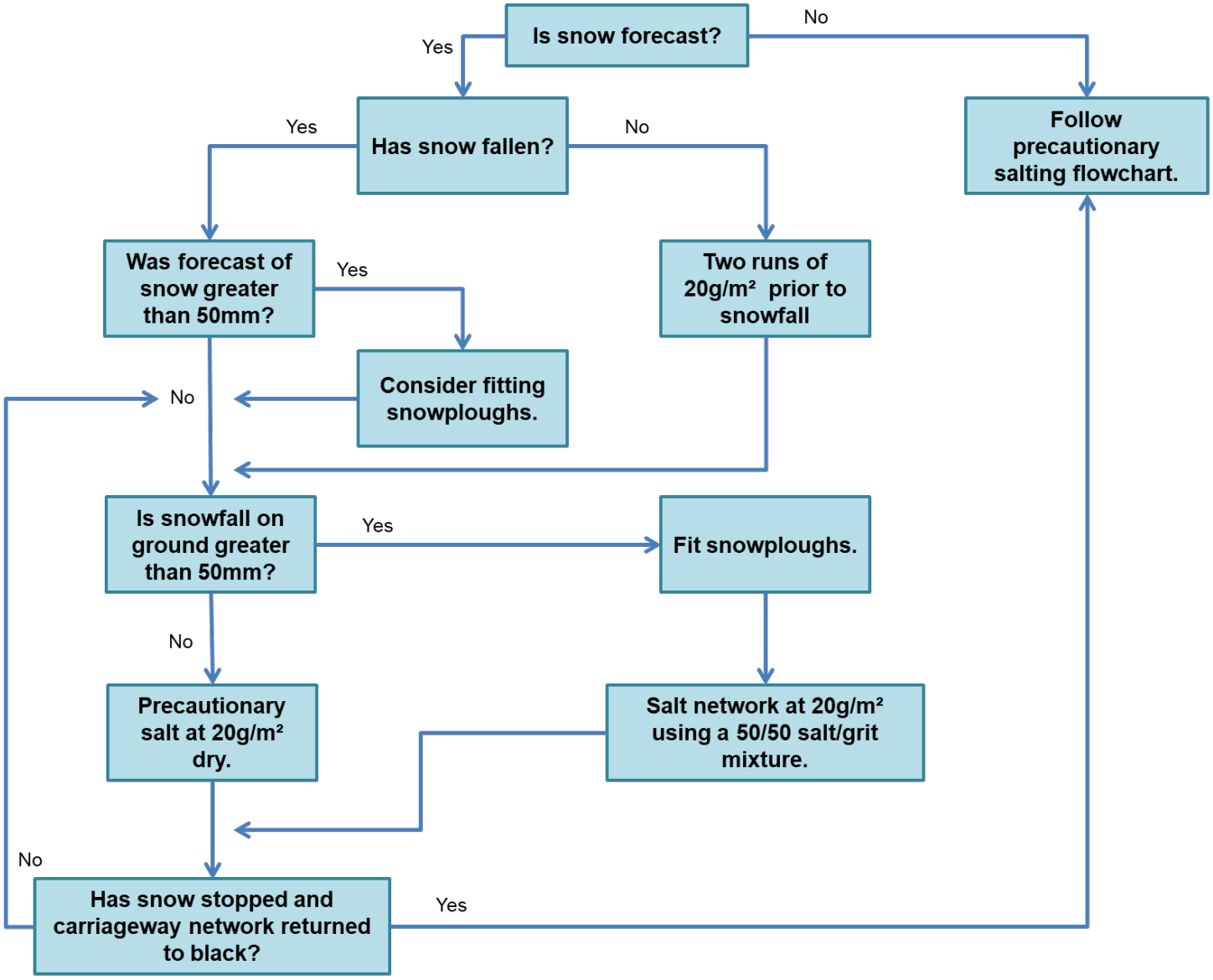
Step 6 - are RSTs forecast <-5^{o}C?

- If yes, go to Step 7
- If no, treatment option C, treated salt – all routes 17g per m^2 molasses

Step 7 - are RSTs forecast <-10^{o}C?

- If yes, treatment option D and then monitor and consider third run at option C
- If no, treatment option D, treated salt – all routes 2 x 17m per m^2 molasses

Appendix G – Snow clearance flowchart



Notes:

1. The treatment time should allow for all routes to be treated prior to ice forming – subject to residual salt.
2. The latest callout time in the morning to ensure completion of precautionary route network prior to the rush hour is 0300hrs.
3. Runs may be times to avoid rush hour traffic. This is to prevent low speeds and stop/start manoeuvres where spread patterns become ineffective.
4. If treatment is completed before 2200hrs and the forecast is for RST's -2 degrees Celsius or less, with moisture/hoar frost present and forecast is still below freezing for a further 10 hours or more, consider re-treatment to complete runs by 0700hrs.
5. Dry salting – If brine is not available then add 5g/m² to the above figures and dry salt. Note MAXIMUM spread rate 20 g/m² .
6. Treatment rates at specific Depots may be altered to take account of moisture content of salt following laboratory tests. Maximum allowable moisture content is 4%.
7. All routes to be completed after rainfall. If rain occurs during run the treatment should be suspended and recommenced once rain ceases. If rainfall is heavy, then reconsider treating whole route again.
8. Decision Matrix based on research carried out by TRL for Highways Agency and the NWSRG as well as guidance contained within Well-Managed Highways Code of Practice for Highway Maintenance Management.

Appendix G - Chart 3 – Snow clearance flowchart description

Step 1 – is snow forecast?

- If yes, go to Step 2
- If no, follow precautionary salting flowchart

Step 2 – has snow fallen?

- If yes, go to Step 3
- If no, two runs of 20g per m^2 prior to snowfall then go to Step 4

Step 3 – was forecast of snow greater than 50mm?

- If yes, consider fitting snowploughs and go to Step 4
- If no, go to Step 4

Step 4 – is snowfall on ground greater than 50mm?

- If yes, fit snowploughs and salt network at 20g per m^2 using a 50-50 salt and grit mixture, then go to Step 5
- If no, precautionary salt at 20g per m^2 and go to Step 5

Step 5 – has snow stopped and carriageway network return to black?

- If yes, follow precautionary salting flowchart
- If no, go back to Step 4

Appendix H - Self-help tips: Clearing snow off the carriageway

- **Do use purpose built snowploughs if available.**
- **Do skim the top of the snow off with a JCB/mechanical bucket to leave an inch of snow so you do not damage the road surface, remove "cat's eyes" or come into contact with ironwork.**
- **Do not scrape the road surface with a JCB/mechanical bucket.**
- **Do report any damage caused or found.**
- **Do operate with dipped beam headlights at all times.**
- **Do operate flashing/rotating amber beacons (where fitted) at all times.**
- **Do place the snow on the verge or grassed areas.**
- **Do not obstruct accesses or footpaths with the snow.**
- **Do keep in regular contact (minimum hourly) with operational base.**

Vehicle operators and drivers are to have available and use:

- reflective jacket
- emergency food and drink
- mobile telephone or radio system
- wear stout footwear
- wear snow and ice grippers when walking outside of vehicle

Appendix I - Self-help tips: Clearing snow from footways

- **Do work from the footway at all times – working towards oncoming traffic wherever possible.**
- **Do not lift too much snow or ice at one time. Compacted snow can be very heavy.**
- **Do not use hot water to melt snow or ice – it may refreeze to form "black ice".**
- **Do place snow at the edges of footways next to the road. This helps to form a barrier between cars and pedestrians.**
- **Do put sand or ash down on cleared areas as it will give grip to walkers.**
- **Do use grit/salt from grit bins sparingly.**
- **Do not use grit/salt from highways grit bins on private property – this is theft.**
- **You do not need to use a lot of salt – a teaspoon of salt per square metre will defrost ice patches.**
- **Do not work in blizzard conditions.**

When working outside:

- wrap up warm
- wear a reflective coat if available
- wear stout footwear
- wear snow and ice grippers when walking, especially when pushing snow
- beware of hypothermia and wind chill effects

There is no law stopping you from clearing snow and ice on the pavement outside your property, pathways to your property or public spaces. This includes both public carriageways and footways.

If an accident did happen, it is unlikely you would be sued as long as you:

- are careful
- use common sense to make sure that you do not make the pavement or pathway clearly more dangerous than before

People using areas affected by snow and ice have a responsibility to be careful themselves