WINTER MAINTENANCE PLAN

2019-2020
### CONTENTS

1. **Statement of Policies and Responsibilities**  
   Page 2

2. **Quality and the Environment**  
   Page 7

3. **Route Plan for Carriageways, Footways and Cycle Routes**  
   Page 10

4. **Weather Prediction and Information**  
   Page 14

5. **Organisational Arrangements and Personnel**  
   Page 18

6. **Plant, Vehicles and Equipment**  
   Page 21

7. **De-icing materials and the environment**  
   Page 24

8. **Operational Communications**  
   Page 30

9. **Information and Publicity**  
   Page 32
INTRODUCTION

Neighbourhoods and Sustainability is responsible for providing the winter maintenance service for Glasgow, including:

- **ESTABLISHING STANDARDS.**
- **ESTABLISHING TREATMENT PRIORITIES.**
- **DAY TO DAY DIRECTION OF OPERATIONS.**
- **MONITORING PERFORMANCE.**
- **LIAISON WITH ADJOINING COUNCILS AND EMERGENCY SERVICES.**

The Winter Maintenance Plan has been revised during the summer of 2019 to incorporate operational and management improvements.

There is detailed information available for operational personnel in the Neighbourhoods and Sustainability Good Practice Guide to Winter Maintenance.
1. Statement of Policies and Responsibilities

Designing a service to cope with an average winter but having the capability to be extended or adapted when winters are more severe or of a longer duration than average.
1.1 STATUTORY OBLIGATIONS AND POLICY

1.1.1 Statutory Obligation

1.1.1.1 The Council has a statutory obligation under Section 34 of the Roads (Scotland) Act 1984 to take such steps as it considers reasonable, to prevent snow and ice endangering the safe passage of pedestrians and vehicles over public roads.

1.1.1.2 In terms of the above legislation a ‘Road’ includes carriageways, footways, footpaths and pedestrian areas.

1.1.1.3 The Winter Maintenance Plan aligns to the risk based assessment approach of Well-managed Highway Infrastructure which is based on local needs, priorities and affordability as well as the published NWSRG Practical Guidance.

1.1.1.4 The aim of the Winter Maintenance Plan is to set out how the winter maintenance service will be provided for Glasgow.

1.1.2 The Council’s aim is to provide an effective and efficient winter maintenance service:

• Minimise delays due to winter weather
• Ensure operations are undertaken safely

1.2 RESPONSIBILITIES

1.2.1 The enabling and service delivery of the winter maintenance service is the responsibility of the Head of Roads.

1.2.2 Neighbourhoods and Sustainability will be responsible for the work of winter maintenance on the carriageways, footways and cycle ways. These responsibilities include the following:

• Production and distribution of the Winter Maintenance Plan and Good Practice Guide
• Carrying out an annual review of all aspects of the service and updating the Winter Maintenance Plan
• Liaising with adjacent Roads Authorities in the preparation of the Winter Maintenance Plan to ensure continuity of service across boundaries
• Providing a list of roads designated for de-icing treatment
• Providing a list of footways, pedestrian areas and cycle ways for de-icing treatment
• Providing a list of roads that make up the strategic routes for snow clearing
• Providing decision making advice and guidance for those involved in winter maintenance
• Liaising with the winter supervisors to provide help and advice to ensure the service is delivered effectively, efficiently and economically. Including establishing operational priorities during extreme or prolonged severe weather conditions
• Arranging specialist road weather forecasts and information throughout the winter to facilitate decision making
• Arranging for the specialist vehicles and equipment to be available throughout the winter period
1.2.2 cont.

- Arranging supplies of de-icing materials to be available at the start of the winter season
- Monitoring the rock salt and brine liquid usage and ensuring supplies are replenished to maintain an appropriate levels in the stock
- Provision of contact details and liaison with emergency services and SPT/public transport operators
- Provision of factual road condition information to the Council’s Media Office and stakeholders as required
- Monitoring all aspects of the winter service and providing information on performance indicators for the service
- Maintaining full and comprehensive records of all winter service activities
- Directing all de-icing and snow clearing resources at their disposal
- Liaising when necessary with the Specialist Road Forecaster
- Monitoring the Specialist Road Forecasts, weather conditions and real time road surface state and temperatures
- Deciding when and arranging to undertake precautionary de-icing, post de-icing, patrolling or snow clearing. The decision will confirm the treatment start time, spread rate and routes

**In the event of major disruption to the road network due to severe winter weather contact will be made with:**

a) The Emergency Service Control Rooms Police, Ambulance, Fire.

b) The Council’s Senior Resilience Officer.

c) The Council’s Media Office.

d) City Convenors.

- Maintaining a list of contractors with suitable plant for snow clearing purposes and hiring in such plant when necessary to do so
- Providing accurate information to the Customer Care Centre
- Ensuring Transport workshops are notified of any vehicle faults and that they are repaired without delay
- Arranging with the Transport workshops for appropriate staff to be available on 24 hour call out to deal with any serious mechanical breakdowns
- Arranging for the calibration and certification of de-icing spreading equipment
- Ensuring all operatives receive adequate, appropriate training in winter operations and all drivers are issued with route navigation devices and as required route cards
1.3 DECISION MAKING PROCESS

1.3.1 The day to day routine operational decisions will be made by the Decision Maker using Specialist Road Weather Forecasts and the road and weather monitoring data.

1.3.2 The winter period will be from the beginning of November to the end of March (this period can be extended should conditions warrant).

1.3.3 On receipt of a Specialist Road Weather Forecast the decision maker will reach a decision for the next 24 hours which will be verified by one of the other Decision Makers and the treatment options are noted below:

a) Action confirm start time, spread rate and routes.

b) No Action (minimum road surface temperature forecast at or above +1°C with no ice/hoar frost or freezing conditions present).

1.3.4 The Action for Weather will confirm the precautionary and post treatment spread rate and the routes to be treated/cleared of snow. The Action for Weather will be circulated as required.

1.3.5 All winter operational depots will manage and retain the gritting record sheets. These sheets will be used to compile the City Wide Winter Gritting Summary sheet.

1.3.6 If the decision is for a) Action and conditions improve so that de-icing is cancelled, an amended Action for Weather will be distributed as soon as possible.

1.3.7 If the decision is for b) No Action and treatment subsequently becomes necessary an amended Action for Weather will be distributed as soon as possible.

1.3.8 Precautionary treatment would be carried out under the following circumstances: On roads where the Specialist Road Weather Forecast indicated that ice, hoar frost, freezing or snow conditions may occur.

1.3.9 The Council will endeavour to ensure the appropriate amount of de-icer is spread prior to the formation of ice/hoar frost or snow settling on the Priority 1 network. When there is a forecast of ice/hoar frost or freezing conditions forming, Priority 1 precautionary treatment will take place unless:

• There is enough residual salt on the road to deal with the expected conditions, or
• The Specialist Road Weather Forecast indicates that the road surface temperature will rise above +1°C before the roads could be treated or there will be no risk from ice/hoar frost

1.3.10 Post treatment would be carried out under the following circumstances:

a) Given the presence of ice or snow on roads and footways and a forecast that these conditions will last for a period longer than 48 hours, appropriate treatment will take place between 07.30 and 18.30 hours the following day depending on available resources unless otherwise directed.

b) Section 3.3.1 contains the list of locations to be covered by post treatment of Priority 2 Carriageway and 2 Footway routes.

c) Priority 3 Carriageway and Footway routes may be treated based on the availability of resources, progress of the treatment of Priority 1 Carriageways, Footways and Cycle ways and Priority 2 Carriageway and Footways. Repeated treatments may be required due to conditions and the Specialist Winter Road Forecast.
1.3.11 Snow clearing operations will be carried out across the network as conditions dictate.

1.3.12 **Three stages of snow clearing can be considered:**
   
a) Light falls of undisturbed accumulation of snow reaching a depth of less than 30 mm.

b) Moderate falls of snow between 30 mm and 100 mm in depth, or light falls associated with drifting.

c) Falls over 100 mm or moderate falls associated with drifting. Stage a) will normally be dealt with by one or more repeated applications of rock salt.

   Stage b) or c) conditions may require the use of ploughs in addition to salting. As ploughing may block junctions and side roads, arrangements must be made to remove any resulting accumulations of snow.

1.3.13 The priority will be to clear snow from the City’s main arterial routes then the remaining sections of the Priority 1 Carriageway routes (repeated treatments may be required due to conditions) and Priority 1 Footway and Cycle way routes. This will be in advance of clearing snow from Priority 2 and 3 Carriageways and Footways.

1.3.14 Under Snow Conditions priority will be to clear and treat snow routes as detailed in Section 3.4.

1.3.15 During periods of prolonged severe, extreme winter conditions the Head of Roads may instruct that operations are managed from the Severe Weather Control Room at the Glasgow Operations Centre, Eastgate.
2. Quality and the environment
2.1 QUALITY MANAGEMENT REGIME

2.1.1 The Winter Maintenance Service is part of the Roads Operations Integrated Management System (IMS).

2.1.2 The Roads Operations IMS is maintained by the Policy and Development Section within Neighbourhoods and Sustainability and is externally audited and verified by SGS.

2.2 DOCUMENT CONTROL PROCEDURES

2.2.1 All quality/environmental documents are controlled and held on a computerised document management control system and are available for viewing by all members of Roads Operations staff.

2.2.2 The Winter Maintenance Plan will be maintained within IMS and will be distributed as detailed in section 2.3.

2.3 DISTRIBUTION

2.3.1 The Winter Maintenance Plan is distributed as below:
- Chief Executive
- Elected Members
- Head of Governance Resilience
- NS SMT
- NS Group and Assistant Group Managers
- MeteoGroup
- West of Scotland Local Authority Consortium
- Transport Scotland
- Police Scotland
- The Winter Maintenance Plan is also available online at: www.glasgow.gov.uk

2.4 INFORMATION RECORDING AND ANALYSIS

2.4.1 The process is shown on the right and fits into a higher level process, which incorporates feedback, allowing monitoring, auditing and improvement to be made.

2.4.2 The first procedure is Winter Preparation, which includes the following:
   a) Preparation and checking of different types of treatment routes.
   b) Training of personnel involved.
   c) Calibration of plant involved.
   d) Placing and maintaining of grit bins.
   e) Ordering sufficient de-icing materials for the next of the winter period to meet the requirements of 7.1.2 and 7.1.3.
   f) Allowing for additional resources should they be required for extreme circumstances.

2.4.3 The second procedure is Winter Action which includes the following:
   a) The decision making process.
   b) Issuing of instructions.
   c) Distribution of instructions.
   d) Procedures of de-icing and ploughing.
   e) Response times.
   f) Monitoring and reporting of actions completed.
   g) Maintaining an adequate supply of rock salt.
2.5.1 Performance measures

2.5.1.1 Neighbourhoods and Sustainability records and the following key performance measure for each winter period:

Percentage of precautionary treatments on Priority 1 Carriageways completed prior to the forecast onset of ice, hoar frost, freezing conditions.

2.5.1.2 The SCOTS Winter Service Roads Subgroup and the Scottish Salt Group regularly monitor salt stocks/days resilience and benchmark various performance measures.

2.5.2 Auditing

2.5.2.1 Auditing is carried out in two stages:

a) Internal auditing carried out by Neighbourhoods and Sustainability staff.
b) Check stills SGS.

2.5.3 Updating

2.5.3.1 The Winter Maintenance Plan and Winter Maintenance Good Practice Guide are reviewed annually and amended and updated before the onset of winter to include any revisions and changes to the service delivery.

2.3.5.2 The IMS has been updated to the standards specified in ISO9001:2008 and ISO14001:2004.
3. Route planning for carriageways, footways and cycle routes.
3.1 GENERAL

3.1.1 The precautionary and post treatment routes are reviewed on an annual basis taking into account any alterations to the roads which are treated under the specified gritting criteria.

3.1.2 The main treatment options are as follows:

- Precautionary
- Post
- Snow Routes

3.1.3 Routes have been devised to ensure efficient coverage within reasonable timescales.

3.1.4 The control version of the Precautionary Priority 1 and 2 Carriageway, Footway and Cycle Way routes cards are retained. These are distributed as required to operational depots.

3.2 PRIORITY 1 CARRIAGEWAYS ROUTES FOR PRECAUTIONARY TREATMENT

3.2.1 The following Priority 1 Roads will be treated if it is forecast that ice, hoar frost or snow are likely to be present on road surfaces:

- All main bus routes registered at the end of the summer in any year within the City
- A or B class roads
- The length of public road from the adjacent Priority 1 Carriageway Route to any designated school dropping off points on the public road for Assisted Support Learning buses and emergency vehicles
- The public road access to fire, ambulance and police stations and main bus garages from the adjacent Priority 1 Carriageway
- Public access roads to Park and Ride station car parks from the adjacent Priority 1 Carriageway
- Hills steeper than 1 in 10 gradients
- Industrial areas as appropriate

3.2.2 Arrangements are in place with SPT for the treatment of Buchanan St bus station main road way.

3.2.3 The Decision Maker will be responsible for deciding on the appropriate treatment and issuing instructions to Winter Supervisors. The Winter Supervisors will be responsible for ensuring the treatments are carried out.

3.2.4 The Decision Maker may amend the Action for Weather should the Specialist Road Weather Forecast or conditions require this. The Decision Maker will also contact the Winter Supervisor and issue a revision for record purposes.

3.3 PRIORITY 1 FOOTWAY ROUTES FOR PRECAUTIONARY TREATMENT

3.3.1 The following Priority 1 Footways will be treated if it is forecast that ice, hoar frost or snow are likely to be present on the surface:

- Pedestrian precincts
- Prioritised city centre footways with high pedestrian traffic
- Shopping centres out with the city centre
- Access routes to schools during term time
- Hills steeper than 1 in 10 with moderate pedestrian traffic
3.4 SNOW ROUTES FOR CLEARANCE

3.4.1 At any time the priority is as follows:
   a) While snow is still lying, only the designated snow routes will be ploughed and treated in order to target resources and to keep these routes open for traffic.
   b) After snow has stopped falling but is lying, the remaining Priority 1 Carriageway Routes will be ploughed/treated, then as resources and conditions permit plough/treat the Priority 2 and 3 Carriageway Routes (see 3.3).

3.5 PRIORITY 2 AND PRIORITY 3 CARRIAGEWAY AND FOOTWAY LOCATIONS FOR POST TREATMENT

3.5.1 Given the presence of ice or snow on roads and a forecast that these conditions will last for a period of longer than 48 hours post salting will take place between 0730 and 1830hrs the following day depending on available resources unless otherwise directed at the following locations/amenities:

**Priority 2 Carriageways include the following:**
- Health Centres
- Day Care Centres
- Community Sports Centres
- Libraries
- Places of worship and any other places of local significance
- Appropriate link routes to main Priority 1 Carriageways within each neighbourhood
- Industrial access roads not pre-treated
- Priority 3 Carriageways - All remaining carriageways

3.5.2 **Priority 2 Footways include the following:**
- Local Shopping
- Health Centres
- Day Care Centres
- Community Sports Centres
- Libraries
- Places of worship and any other places of local significance
- Appropriate link routes to main Priority 1 Footways within each neighbourhood
- A designated access through route through City Parks
- Priority 3 Footways - All remaining footways

3.6 PRIORITY 1 CYCLE ROUTES FOR PRECAUTIONARY TREATMENT

3.6.1 The following Priority 1 Cycle Routes will be treated if it is forecast that ice, hoar frost or snow are likely to be present on the surface:
- The operational length of the segregated Cycle Way network
- The National Cycle Network number 75 (NCN 75) from Cambuslang Bridge/Boundary with South Lanarkshire Council in the East and Bells Bridge in the West.

3.7 ON ROAD MARKED CYCLE LANES FOR PRECAUTIONARY TREATMENT
3.7.1 On road marked cycle lanes will be treated at the same time as the carriageway on which they are located.

3.8 OFF ROAD CYCLE WAYS FOR POST TREATMENT

3.8.1 Off road cycle ways will be treated as per Priority 3 Footways.

3.9 RESPONSE AND TREATMENT TIMES FOR CARRIAGEWAY AND CYCLE WAY TREATMENTS

3.9.1 Precautionary treatment of Priority 1 Carriageways and Priority 1 Segregated Cycle Way routes are designed to be completed within 5 hours of the instructed treatment start time.

3.9.2 Precautionary treatment of Priority 1 Carriageway and Priority 1 Segregated Cycle Way routes should be completed before the onset of forecast ice, hoar frost or snow when possible.

3.9.3 Reactive or non-planned treatment and ploughing of Priority 2 and 3 Carriageways and any associated on road cycle lanes should commence 1 hour after the decision is taken, when possible.

3.10 RESPONSE AND TREATMENT TIMES FOR FOOTWAY, FOOTPATHS AND OTHER CYCLE WAY TREATMENTS

3.10.1 Precautionary treatment of Priority 1 Footways should be completed within 5 hours of the instructed start time. Reactive or non-planned treatment and ploughing of Priority 2 and 3 Footways and Footpaths and other cycle ways (not segregated or on road) will only be treated between 0730hrs and 1830hrs depending on the availability of resources and as conditions permit.

3.11 ALLOCATION OF PLANT, VEHICLES, EQUIPMENT AND MATERIALS TO ROUTE

3.11.1 The road network within the city boundary is serviced by the Gartcraig Roads Depot.

3.11.2 The treatment of footway routes is carried out from local Neighbourhoods and Sustainability operational depots.

3.11.3 Salt supplies are replenished at local Neighbourhoods and Sustainability depots as required.

3.12 LOCATION AND MAINTENANCE OF GRIT BINS

3.12.1 1,525 grit bins are sited locally for self- help by the public and are refilled as required. These are supplemented by temporary 1 tonne grit sacks placed strategically throughout the City during severe conditions.

3.12.2 Grit bins will be placed at various agreed locations throughout the City:

· Grit bins should not be sited within 200 metres of another or on a footway which is on a priority footway gritting route, to a nominal number of 20 per neighbourhood

· Grit bins should not obstruct the passage of pedestrians

· Grit bins should not be sited on a footway outside an individual’s house without their specific agreement

· Grit bins will not be provided in private areas
4. Weather prediction and information
4.1 FORECASTING, PATROLS AND OTHER DECISION SUPPORT INFORMATION

4.1.2 Neighbourhoods and Sustainability has contracted MeteoGroup to supply forecasts for Glasgow each day.

4.1.3 The MeteoGroup will email the daily Specialist Road Weather Forecast to the Neighbourhoods and Sustainability distribution list.

4.1.4 Should any problems exist with the computer systems for obtaining the weather forecast, alternative arrangements are in place.

4.1.5 Weather stations are installed at 4 representative locations within the city and the Council has access to a further 6 in the Greater Glasgow area. Decision makers can access the 4 weather stations’ data remotely.

4.1.6 The weather station data can be presented in both graphic and tabular format and includes:
   a) Road surface temperature
   b) Deep road temperature
   c) Air temperature
   d) Wind speed and direction
   e) Relative humidity
   f) Precipitation
   g) Surface state (including level of salt present on road surface)

4.1.7 MeteoGroup also has direct access to the data.
4.2 INFORMATION TO BE PROVIDED

4.2.1 Specialist Road Weather Forecasts

a) Monitoring Summary - available from around 0500hrs. This forecast is for the next 36 hours.

b) Main Lunchtime Forecast - available from around 1100hrs. This forecast contains a 36 hour text forecasting giving
   i) Details and confidence of hazards from Ice, Hoar Frost, Snow, Fog, Strong Wind and Rain.
   ii) Wind speed and direction, road state and snow depth accumulations.
   iii) A 2-8 day forecast of expected hazards of Ice, Hoar Frost, Snow, Fog, Strong Wind and Rain with comments on the outlook.

c) Evening Update - available from around 1700hrs. The forecast is for the next 36 hours.

4.2.2 MeteoGroup carries out 24 hour monitoring of conditions and if these vary significantly they will contact the Decision Maker to advise of the change and, when appropriate, will issue an updated forecast.

4.2.3 If there is an amendment made to the Action for Weather by the Decision Maker, contact will be made with the Winter Supervisor. Also a revised retrospective Action for Weather will be issued for record purposes.

4.2.4 MeteoGroup provides a 24 hour consultancy service for the Decision Maker for advice and clarification of forecasts.

4.3 TIMING AND CIRCULATION OF INFORMATION

4.3.1 The Decision Maker, on receipt of the 1100hrs Specialist Road Weather Forecast, will assess and consult with the second named Decision Maker (verifier) and agree the Action for Weather. This instruction will then be issued to the relevant staff and external bodies (see instruction sheet below). At 1700hrs and 0500hrs, Specialist Road Weather updates are received by the Decision Maker who may issue additional instructions accordingly to relevant staff who are available out of hours.

4.4 REPORTING PROCEDURES

4.4.1 Routine operating decisions will be reported as in section 4.3.

4.4.2 During extreme conditions such as heavy snowfalls when the treatment is limited only to Snow Clearing Routes regular operational and weather updates are provided to senior management.

4.5 MAINTENANCE OF ICE DETECTION OUTSTATIONS

4.5.1 Maintenance arrangements are in place for these outstations and the appropriate company carries out any essential maintenance.
### Network Management Action For Weather Report

<table>
<thead>
<tr>
<th>Action Report Issued on</th>
<th>Decision Maker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time of Weather Report</td>
<td>12:00</td>
</tr>
<tr>
<td>Y/N</td>
<td>Phone Number:</td>
</tr>
<tr>
<td>Action</td>
<td>Date:</td>
</tr>
<tr>
<td>Action</td>
<td>Comments</td>
</tr>
<tr>
<td>Treat Outer priority 1 c/way routes</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Treat Inner/City Centre priority 1 c/way (route D116)</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Treat Priority 1 Segregated Cycle Ways</td>
<td>ml/m² &amp; hours</td>
</tr>
<tr>
<td>NCN 75/Glasgow Green</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Treat Outer priority 1 f/ways &amp; footbridges</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Treat Inner/City Centre priority 1 f/ways</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Snow Routes</td>
<td>g/m² &amp; hours</td>
</tr>
<tr>
<td>Winter Supervisor to report by</td>
<td>Hours</td>
</tr>
<tr>
<td>Drivers to report by</td>
<td>Hours</td>
</tr>
<tr>
<td>Gritting to commence</td>
<td>Hours</td>
</tr>
<tr>
<td>Fit blades to vehicles</td>
<td>Hours</td>
</tr>
</tbody>
</table>
5. Organisational Arrangements and Personnel
5.1 ORGANISATION CHART AND EMPLOYEE RESPONSIBILITIES

5.1.1 The organisation of staff for Winter Maintenance is shown here.

5.1.2 Responsibilities

5.1.2.1 The Decision Maker is responsible for: monitoring the road and weather conditions; reaching an appropriate decision on treatment of the network and passing on the information to the Winter Supervisors who are responsible for overseeing the work.

5.1.2.2 The role of the Winter Supervisors is to utilise and manage effectively all resources under their control i.e. labour, plant and materials to effect swift treatment of the road network. They will also complete all relevant records timeously.

5.1.2.3 The Works Controller will ensure adequate resources are available for the supervisors to undertake their duties efficiently with regard to performance indicators.

5.1.2.4 It is the role of the Winter Maintenance Operatives to carry out gritting duties in a safe and efficient manner.

5.1.2.5 The role and responsibilities of the winter maintenance drivers and operatives are included in more detailed explanations of the roles of the winter maintenance operatives is included in the Winter Maintenance Good Practice Guide.
5.2 ADDITIONAL RESOURCES

5.2.1 During severe weather conditions the Head of Roads may augment resources from other Glasgow City Council Departments, ALEOs and/or private contractors.

5.2.2 There is a three year framework contract in place for the private contractors.

5.2.3 All private contractors must supply a list of contact numbers which must be available 24 hours a day and 7 days a week.

5.2.4 All private contractors are to be trained annually in all required aspects of winter maintenance. Prior to the commencement of the winter season all all contractors are to supply a list of trained operatives.

5.3 TRAINING

5.3.1 Decision Makers and Supervisors should have received MeteoGroup Open Road Forecast and Decision Making training every three years.

5.3.2 Winter Supervisors and Winter Maintenance Operatives will be trained in all aspects of their duties.

5.4 HEALTH AND SAFETY PROCEDURES

5.4.1 The Head of Roads is responsible for the Health and Safety procedures for operational staff and details are included in the Winter Maintenance Good Practice Guide.

5.4.2 During winter maintenance operations, drivers/operatives must adhere to the following documentation:

- Glasgow City Council Health and Safety Policy
- Departmental Health and Safety Policy Statement
- Road Maintenance Safe Working Methods and Activity Work Instructions
- Roads/Lighting Safe Working Methods
- Risk/Assessments for Individual Activities

5.4.1 Winter Supervisors, Winter Maintenance Drivers and Operatives will be trained in all aspects of their duties, plant and equipment.
6. Plant, vehicles and equipment
### PLANT, VEHICLES AND EQUIPMENT

The availability of vehicles and ancillary is detailed below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Capacity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanently Mounted Gritters</td>
<td>9 cu metre</td>
<td>7</td>
</tr>
<tr>
<td>Demountable Gritters</td>
<td>6 cu metre</td>
<td>14</td>
</tr>
<tr>
<td>Demountable Mini Gritters</td>
<td>0.6 cu metre</td>
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</tr>
<tr>
<td>Trailed Gritters</td>
<td>3-6 cu metre</td>
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<tr>
<td>Trailed Gritters (Footway)</td>
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<td>10</td>
</tr>
<tr>
<td>Pedestrian Spreader</td>
<td>0.5 cu metre</td>
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</tr>
<tr>
<td>Snow Ploughs</td>
<td>-</td>
<td>24</td>
</tr>
<tr>
<td>Multi-functional narrow gauge vehicle and plough</td>
<td>500L</td>
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<tr>
<td>Large tractor units with mounted gritters and ploughs</td>
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<td>5</td>
</tr>
<tr>
<td>Mid-range tractor unit with mounted gritters and ploughs</td>
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<td>7</td>
</tr>
<tr>
<td>All terrain vehicles/small tractors with mounted gritters and ploughs</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Pedestrian mowers with 1.3m footway ploughs</td>
<td>-</td>
<td>31</td>
</tr>
</tbody>
</table>

6.1.1 Global Positioning System (GPS) tracking equipment is installed in the large carriageway gritting vehicles to establish accurate treatment records.

6.1.2 The large carriageway gritting vehicles are fitted with route navigation devices to assist drivers.
6.2 LOCATION OF PLANT, VEHICLES AND OTHER EQUIPMENT

6.2.1 Neighbourhoods and Sustainability will normally operate carriageway gritters from Gartcraig Roads depot.

6.2.2 Tractors/all-terrain vehicles will have mounted spreaders and street sweepers will have towed spreaders for the treatment of footways. This equipment will be operated from and stored at local depots.

6.2.3 The multi-functional vehicle for de-icing segregated cycle ways is based at Victoria Park Depot.

6.3 GARA GING, SERVICING AND MAINTENANCE ARRANGEMENTS

6.3.1 Neighbourhoods and Sustainability Transport will supply, hire, maintain and repair the winter fleet.

6.3.2 The winter fleet may be augmented as required by other sections of Neighbourhoods and Sustainability.

6.4 CONTACT AND HIRE ARRANGEMENTS FOR ADDITIONAL PLANT, VEHICLES AND EQUIPMENT

6.4.1 During severe weather conditions the Head of Roads may augment resources from other Glasgow Council Departments, ALEOs and private contractors.

6.5 CALIBRATION PROCEDURES

6.5.1 Before the start of winter operations Neighbourhoods and Sustainability Transport will ensure arrangements are in place to calibrate vehicles, plant and equipment. An additional in season calibration of gritting vehicles will also be undertaken and, as required, due to any spreader performance issues. Certification will be provided to relevant works controllers for record retention.

6.5.2 Calibration will comply with NWSRG Spreader Management

6.6 FUEL STOCKS AND LOCATIONS

6.6.1 Fuel stocks for the dedicated winter fleet and other vehicles being used for winter operations are provided at some Neighbourhoods and Sustainability depots and other Glasgow City Council depots located throughout the city.

6.6.2 Winter supervisors shall ensure the winter fleet is maintained with an adequate fuel level.

6.6.3 The standard fuelling procedures and arrangements apply.
7. De-icing materials and the environment
7.1 LOCATION AND CAPACITY OF STOCKS FOR SALT AND OTHER MATERIALS

7.1.1 Rock salt will be stored under cover at Gartcraig and Nitshill depots and if required at additional temporary covered storage facilities.

7.1.2 The quantity of rock salt held in stock at the start of November 2019 will be 24,000 Tonnes and 4,000 Tonnes grit stone.

7.1.3 The quantity of liquid brine at the start of November 2019 will be 22,000 litres.

7.1.4 Weighbridges will be used to manage carriageway gritter salt usage and to support stock control.

7.1.5 Operational depots will provide weekly salt usage data to the Gartcraig Works Controller. Salt orders will be authorised by the Head of Roads.

7.2 TESTING ARRANGEMENTS

7.2.1 Salt for use on roads during winter should be to the requirements of BS 3247 'Salt for Spreading - Fine Rock Salt'.

7.2.2 The original copies of road salt test certificates will be retained within the IMS for audit purposes.

7.2.3 Treated/ACP rock salt, untreated rock salt and liquid brine are the main de-icers used.

7.3 LOADING ARRANGEMENTS

7.3.1 The operational depot is responsible for ensuring a loading shovel is available for loading the gritting vehicles. A ‘backup vehicle’, in case of breakdown of the primary loading shovel must be available at the depot at all times during the winter period.
TABLE 1

Precautionary Treatment - Salt Spread Rates

Recommended spread rates for precautionary treatment for frost and ice medium traffic levels & good spreader capability.

<table>
<thead>
<tr>
<th>Rock Salt Type</th>
<th>RST</th>
<th>Spread Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dry Damp Road</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>At or above -1.00C</td>
<td>10g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>10g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-1.10C to -2.00C</td>
<td>10g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>10g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-2.10C to -3.00C</td>
<td>10g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>10g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-3.10C to -4.00C</td>
<td>15g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>10g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-4.10C to -5.00C</td>
<td>15g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>10g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-5.10C to -7.00C</td>
<td>15g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>15g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-7.10C to -10.00C</td>
<td>20g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>20g/m²</td>
</tr>
<tr>
<td>Dry Salt</td>
<td>-10.10C to -15.00C</td>
<td>30g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>25g/m²</td>
</tr>
</tbody>
</table>

Note: For spread rates greater than 20g/m2, the Decision Maker may instruct repeat treatments eg 1x20g/m2 + monitor, then consider instructing further treatments as required by forecast and road conditions.

TABLE 2

Precautionary Treatment – Brine Spread Rates

Recommended spread rates for precautionary treatment for frost and ice

<table>
<thead>
<tr>
<th>Rock Salt Type</th>
<th>RST</th>
<th>Spread Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Dry Damp Road</td>
</tr>
<tr>
<td>Brine</td>
<td>At or above -2.0C</td>
<td>10ml/m²</td>
</tr>
<tr>
<td>Brine</td>
<td>-2.10C to -5.00C</td>
<td>20ml/m²</td>
</tr>
<tr>
<td>Brine</td>
<td>-5.10C to -7.00C</td>
<td>30ml/m²</td>
</tr>
</tbody>
</table>

Note: Brine is not suitable for use during snow and freezing rain.
**TABLE 3**

Before Snow and Freezing Rain - Salt Spread Rates

<table>
<thead>
<tr>
<th>Salt Type</th>
<th>Treatments Before Snow or Freezing Rain</th>
<th>Light Snow Forecast</th>
<th>Moderate/Heavy Snow Forecast</th>
<th>Freezing Rain Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Salt</td>
<td>Treated Salt</td>
<td>20g/m²</td>
<td>40g/m² or 2x20g/m²</td>
<td>40g/m² or 2x20g/m²</td>
</tr>
<tr>
<td>Treated Salt</td>
<td></td>
<td>15g/m²</td>
<td>30g/m² or 2x15g/m²</td>
<td>30g/m² or 2x15g/m²</td>
</tr>
</tbody>
</table>

**Note:** In situations where time constraints dictate, one treatment of 15 or 20g/m² across the whole of the scheduled route before the commencement of snowfall or freezing rain will typically prove more advantageous that a treatment of 30 or 40g/m² on only part of the route.
### 7.4 TREATMENT REQUIREMENTS

#### 7.4.1 Pattern of Spreading.

- **7.4.1.1** The gritter spread widths are prescribed by the route design.
- **7.4.1.2** The gritter will generally travel in the left-hand lane and the spreading pattern will be set to cover single or multiple lanes in one or both directions.

#### 7.4.2 Salt Spread Rates

- **7.4.2.1** The variable nature of winter conditions makes it difficult to define exact treatments and de-icer applications. Guidance on appropriate spread rates is given in Tables 1, 2 and 3.
- **7.4.2.2** Sustained low temperatures occur rarely. In this event however, account will be taken of the need to increase the rate of spread of salt. Below -5°C the de-icing action of rock salt becomes less effective.

### 7.5 ROCK SALT PURCHASING ARRANGEMENTS AND SELF HELP

#### 7.5.1 Treated, untreated rock salt and liquid de-icer are delivered before the start of winter core winter season (1 November). As required, further deliveries of treated untreated rock salt and liquid de-icer can be made to replenish stock piles.

#### 7.5.2 Salt Conservation

- **7.5.2.1** During periods of extreme weather and potential restrictions on the supply chain, GCC will implement nationally agreed salt conservation measures. Additionally, GCC will liaise with neighbouring local authorities via the West of Scotland Regional Resilience Partnership concerning mutual aid and other assistance.

#### 7.5.3 Supply of rock salt to others

- **7.5.3.1** There will be a charge for this service, consisting of the cost of the rock salt plus any depot loading and/or delivery charges. Rock salt will only be released with authorisation from the Head of Roads upon receipt of an official order.

#### 7.5.4 Rock Salt for Self-help

- **7.5.4.1** The small quantities of rock salt can be uplifted between 10am to 4pm Monday to Sunday from the following locations:
  
  Victoria, Greenfield, Springburn and Kings Parks and Dawsholm, Easter Queenslie and Shieldhall Cleansing Complexes.

  Further advice and guidance on self-help issues can be found at www.glasgow.gov.uk/winter
7.5.5 Environment

Gritter bodies have been changed from diesel to hydraulically powered units, which when considered with the reduction in vehicles within the gritting fleet has resulted in a significant reduction of CO2 emissions.

To date with efficiencies made to the gritting fleet, the Council have reduced their emissions by approx. 21.58 tonnes of carbon.

ACP treated rock salt has improved residual effectiveness which can reduce the volume of rock salt spread.

Research has shown that ACP treated rock salt reduces corrosion by 82% therefore reducing damage to roads infrastructure and vehicles. ACP treated rock salt can be spread at lower rates and de-ices at lower temperatures than untreated rock salt. All gritting vehicles and plant are calibrated so the correct amount of de-icer is used and to reduce the risk of over or under spreading.
8. Operational communications
8.1 TECHNICAL SYSTEMS INFORMATION

8.1.1 Good communications are essential to ensure speedy and effective response to winter conditions.

8.1.2 Appropriate contact details are available to the Weather Forecast Provider, GCC Media Office, GCC Resilience and Emergency Services.

8.1.3 The Decision Maker and Winter Supervisors will be issued with smart phones and where required tablet computers.

8.1.4 The Head of Roads will maintain a list of all telephone contact numbers for his operational personnel on Winter Maintenance Service standby duties. This list will be distributed to the Winter Supervisors and also included in the Councils Emergency Contacts Directory. It will be the responsibility of each officer to advise any change to their contact details.

8.1.5 During de-icing and snow clearance operations each vehicle is fitted with a radio or a mobile phone to maintain contact with the operations depot.

8.1.6 All large carriageway gritting vehicles are fitted with a GPS and tracking system which allows the sections of road which have been treated to be clearly identified along with a time of treatment.

8.1.7 The large carriageway gritting vehicles are fitted with route navigation devices.

8.1.8 The Head of Roads is responsible for operational communications equipment.

8.2 REPORTING ARRANGEMENTS AND PROTOCOLS

8.2.1 The Decision Maker will distribute the Action for Weather to the designated circulation list.

8.2.2 The Action for Weather will be distributed to: the GCC e-mail contact list; depot notice boards and social media.

8.2.3 During any period of severe weather the Decision Maker will prepare a daily report on the previous 24 hour road conditions and treatments for the Head of Roads. The report will be required by 09.45hrs.

8.2.4 The operations depots will record details of salt usage and of plant breakdown daily.

8.2.5 The operations depots will record details of all additional plant and labour hired from other Departments or Contractors as soon as practical.

8.2.6 In the event of a red or amber weather warning or a prolonged spell of severe weather a decision will be made on whether to set up the Severe Weather Control Room at the Glasgow Ops. Centre at Eastgate, 727 London Road.

8.2.7 Winter Supervisors will report progress with gritting and snow clearing operations during any red or amber weather warning or a prolonged spell of severe weather to the Decision Maker.

8.3 OPERATIONAL RECORDS

8.3.1 Operational records to be completed:

- Action for Weather Report
- Daily Winter Gritting Summary Record Sheet
- Daily Winter Gritting Work Record
- Non Conformance of Supplied Materials
9. Information and publicity
9.1 LOCAL PRESS AND BROADCAST INFORMATION

9.1.1 It is important that the general public is aware of and understands the Council’s approach to the Winter Maintenance Service. Publicity is to be given before the beginning of the winter period describing the level of service provision and operational contact points.

9.1.2 During the winter period and particularly during prolonged spells of snow and ice, information will be made available to the public via:
   a) Press Releases.
   b) Local Television and Radio Stations.
   c) GCC Connect Website.
   d) Social Media.

9.1.3 The Head of Roads is authorised to respond to the Press, Radio and Television on matters relating to local road conditions.

9.2 PUBLICITY

9.2.1 General advice and information for the public concerning the Winter Maintenance Service will be available via:
   a) On the Connect web page the Interactive Winter Gritting Story Map provides residents with: information on how plan journeys on the treated network; tips for winter driving and cycling and self-help information.
      The driver information advises how to plan and prepare for winter driving. The Snow Code advises members of the public how to self-help safely and legally. Snow Wardens are Neighbourhood Improvement Volunteers who assist with organised neighbourhood gritting.
   b) 5 Variable Message Signs which will display winter and severe weather forecasts

9.3 OTHER KEY LOCAL AND NATIONAL CONTACT INFORMATION

9.3.1 The Head of Roads will inform the Police Force Control and TRAFFCOM of forecasts predicting extreme conditions.

9.3.2 Reports from the Police or TRAFFCOM of dangerous road conditions will be Considered as soon as practicable and as resources permit.

9.3.3 The winter supervisors will inform Traffcom and the Decision Maker of any road closed due to winter weather and liaise with the Police as required.

9.3.4 RALF (0800 37 36 35 or 0141 276 7000) Customer Care Team is responsible for managing public telephone inquiries about the Winter Maintenance Service.

9.3.5 RALF is operational 24 hours a day 7 days a week.

9.4 RECORDS

9.4.1 Action for Weather and gritting record sheets will be retained by the Council for 3 years and retained in archives for a further 7 years.

9.5 RESPONSIBILITIES AND GUIDANCE FOR PROVIDING INFORMATION

9.5.1 The Head of Roads is responsible for guidance of the information to be supplied.
HOW TO CONTACT US:

Glasgow City Council
Neighbourhoods and Sustainability
Eastgate, 727 London Road
Glasgow G40 3AQ

Phone: (0141) 287 9000
Email: customercare@glasgow.gov.uk
Web: www.glasgow.gov.uk/roads

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