Glasgow
CITY COUNCIL

WINTER MAINTENANCE PLAN



2023-2024

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INTRODUCTION

Neighbourhoods, Regeneration and Sustainability (NRS) 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 2023 to incorporate operational and management improvements.

There is detailed information available for operational personnel in the Neighbourhoods, Regeneration 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 Asset Management.

1.2.2 Neighbourhoods, Regeneration 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 and 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 0˚C with no ice/hoar frost or freezing conditions present).

c) Patrol and blase recorded wet spots and areas of seepage (road surfrace temperature forecast below 0C 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 or c) Patrol 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 or c) Patrol 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 0˚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 3.5.1 contains the list of locations to be covered by post treatment of Priority 2 Carriageway and 2 Priority 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 Asset Management 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 Performance Information Management Unit within Neighbourhoods, Regeneration 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 available on line 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.

AUDIT AND UPDATING

2.5.1 **Performance measures**

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

Number of times precautionary gritting is instructed for priority 1 carriageways

Number of times precautionary gritting is instructed for priority 1 segregated cycle ways

% of precautionary gritting of priority 1 carriageways completed within 5hrs

% of precautionary gritting of priority 1 segregated cycle ways completed within 5hrs

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, Regeneration and Sustainability staff.

b) Independent auditing carried out by 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 and ISO14001.





3. Route planning for Footways, Cycle Routes and Carriageways.

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
- Patrol - A carriageway patrol may be instructed if it is forecast that road surface temperatures < 0C with no hazards. The patrol will 'blast' any recorded wet spots or areas of seepage. Winter drivers will notify the winter supervisor of any wet spots or areas of seepage so that they can be included in the patrol. Only relevant sections (those with recorded wet spots or areas of seepage) of Priority 1 Carriageway Routes will be included in the patrol. A database of recorded wet spots or areas of seepage will be maintained by the winter supervisor during the winter season.

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 FOOTWAY ROUTES FOR PRECAUTIONARY TREATMENT

3.2.1 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:

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

3.3 PRIORITY 1 CYCLE ROUTES FOR PRECAUTIONARY TREATMENT

3.3.1 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) that extends from Cambuslang Bridge/boundary with South Lanarkshire Council in the east to Riverside Museum in the west
- Designated routes in Queens Park, Pollok Country Park, cross paths in Glasgow Green and Kelvin Way.

3.4 ON ROAD MARKED CYCLE LANES FOR PRECAUTIONARY TREATMENT

3.4.1 On road marked cycle lanes will be treated at the same time as the carriageway on which they are located.

3.5 OFF ROAD CYCLE WAYS FOR POST TREATMENT

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

3.6 PRIORITY 1 CARRIAGEWAYS ROUTES FOR PRECAUTIONARY TREATMENT

3.6.1 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
- 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 car parks from the adjacent Priority 1 Carriageway Route
- Buchanan Street bus station
- A or B class roads
- Hills steeper than 1 in 10 gradients
- Industrial areas as appropriate

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

3.6.3 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.

3.6.4 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.

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

3.7.1 Post-treatment of Priority 2 Footways and Carriageways and Priority 3 Footways and Carriageways will be instructed should there be ice or snow and a forecast that these hazards will last for a period longer than 48 hours. The post-salting will take place between 0730hrs and 1830hrs the following day and depending on available resources. It should be noted that if, Priority 1 Footways, Cycle Ways and Carriageways require treatment during any extended period of ice or snow their treatment will take precedence over Priority 2 and Priority 3 Route treatment.

3.7.2 Priority 2 Footways include the following:

- Local Shopping
- Health Centres
- Daycare 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 route through city parks
- Priority 3 Footways - All remaining footways



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

3.8 SNOW ROUTES FOR CLEARANCE

3.8.1 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.

c) Where lying snow on carriageways requires to be ploughed, the ploughing will move the snow to the nearside of the road. Clearing of ploughed snow, where required, will

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 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 and Priority 1 Cycle Routes should be completed within 5 hours of the instructed start time. Reactive or non-planned treatment and ploughing of Priority 1, 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 and cycle routes is carried out from local Neighbourhoods, Regeneration and Sustainability operational depots.

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

3.12 LOCATION AND MAINTENANCE OF GRIT BINS

3.12.1 1,611 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

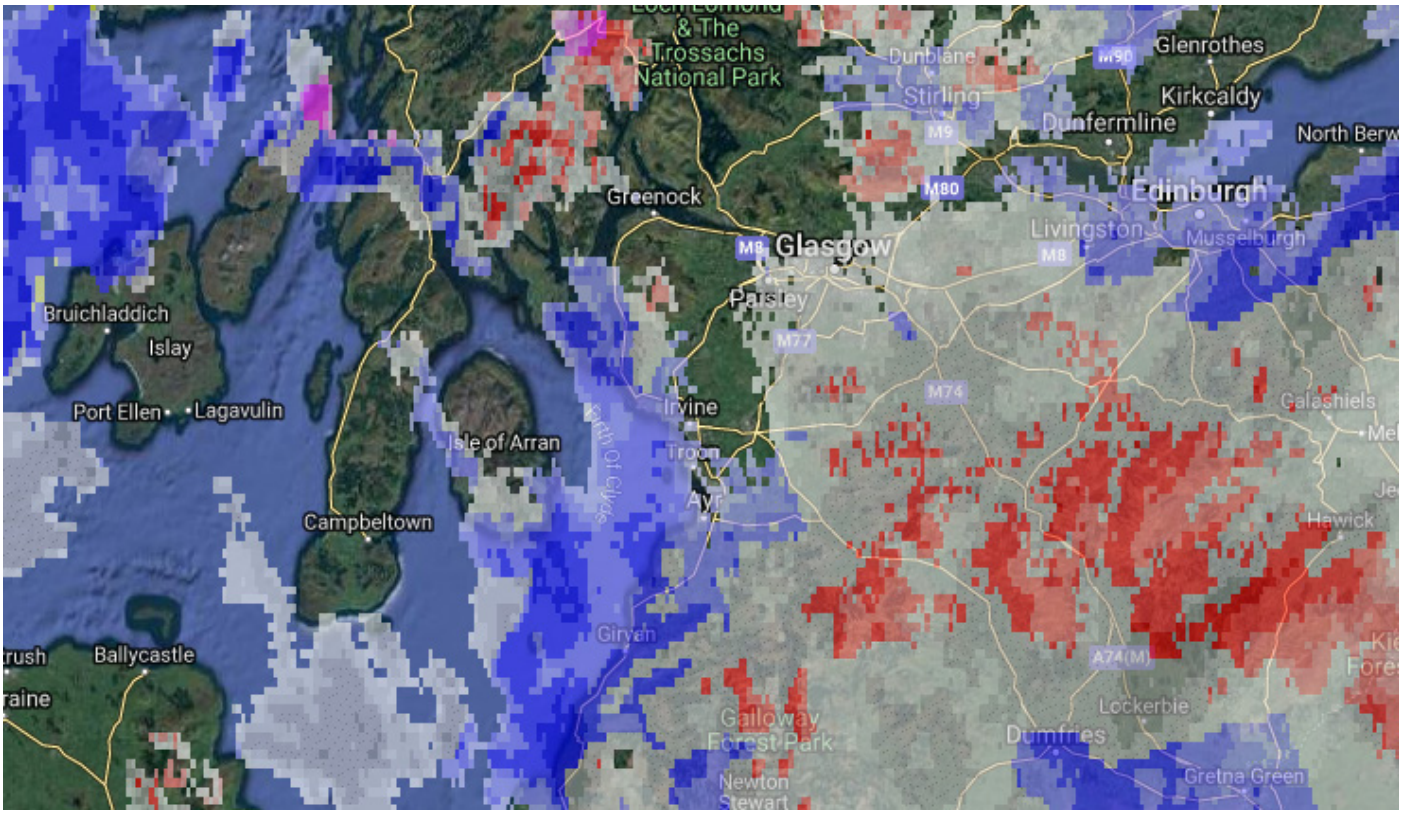








4. Weather prediction and information



4.1 FORECASTING, PATROLS AND OTHER DECISION SUPPORT INFORMATION

4.1.2 Neighbourhoods, Regeneration and Sustainability has contracted MetDesk to supply forecasts for Glasgow each day.

4.1.3 The MetDesk will email the daily Specialist Road Weather Forecast to the Neighbourhoods, Regeneration 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 MetDesk 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 0600hrs. This forecast is for the next 36 hours.

b) Main Lunchtime Forecast - available from around 1200hrs. 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 1800hrs. The forecast is for the next 36 hours.

4.2.2 MetDesk 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 MetDesk 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 1200hrs 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 1800hrs and 0600hrs, 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.

Neighbourhoods, Regeneration and Sustainability
Action for Weather

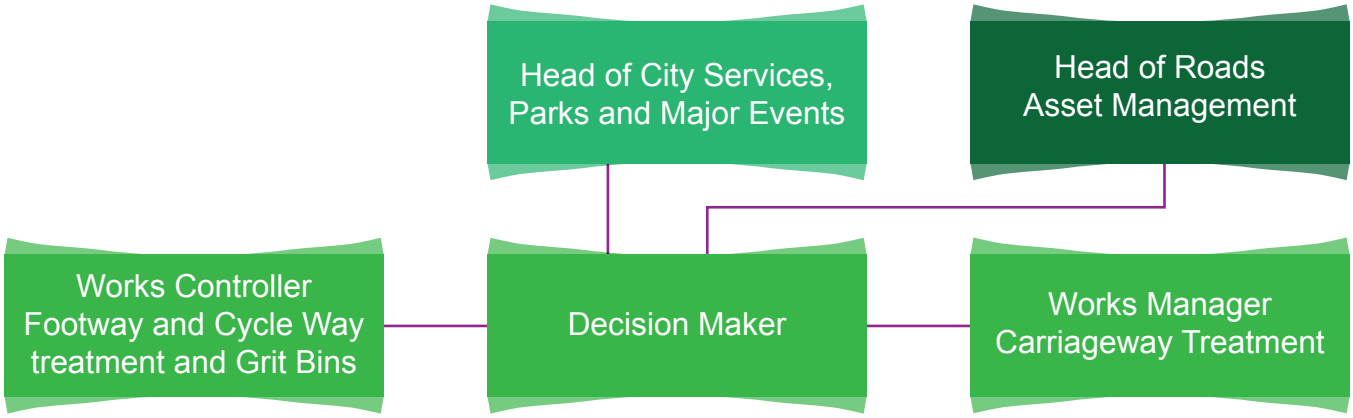
Action Report Issued on		**Decision Maker**	
Time of Weather Forecast		**Phone Number:**	
	Y/N	**Verifier**	
Action	N		Comments
Treat Outer priority 1 c/way routes and integrated cycle lanes		g/m² & hours	
Treat Inner/City Centre priority 1 c/ways and integrated cycle lanes		g/m² & hours	
George Square, treat c/ways		ml/m² & hours	
George Square, treat footways and cross paths		g/m² & hours	
Treat priority 1 segregated cycle ways		g/m² & hours	
Treat priority 1 National Cycle Network 75 & the Green X paths		g/m² & hours	
Treat Outer priority 1 f/ways, SfP & footbridges		g/m² & hours	
Treat Inner/City Centre priority 1 f/ways & SfP		g/m² & hours	
Snow Routes		g/m² & hours	
Vaccination Centres: internal road ways, car parks & paths		g/m² & hours	Vaccination Centres: Partick Burgh Hall; Easterhouse Sports Centre; Barmulloch Community Centre; Drumchapel Community Centre, Glasgow Central Mosque. Medicine Distribution Centre: Weardale Lane
Drivers to report by		Hours	
Gritting to commence		Hours	
Gritting to commence		Hours	
Fit blades to vehicles			
Weather Warnings & Comments			

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 Manager 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 Asset Management 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 MetDesk 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 Asset Management 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:

- Winter Maintenance Good Practice Guide
- 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



6.1 PLANT, VEHICLES AND EQUIPMENT

The availability of vehicles and ancillary is detailed below.

Description	Capacity	Quantity
Permanently Mounted Gritters Demountable Gritters Demountable Mini Gritters	9 cu metre 6 cu metre 3 cu metre	7 11 2
Trailed Gritters	3 cu metre	12
Snow Ploughs	-	23
Multi-functional narrow gauge vehicle and plough	500L	1
Large and mid-size tractor units with mounted gritters and ploughs Utility vehicles/small tractors with mounted gritters and ploughs Pedestrian gritters		6 20 22
Pedestrian mowers with 1.3m footway ploughs		22

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, Regeneration 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 GARAGING, SERVICING AND MAINTENANCE ARRANGEMENTS

6.3.1 Neighbourhoods, Regeneration 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, Regeneration 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 Asset Management 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, Regeneration 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 Re-fuelling of the winter fleet is provided at some NRS depots and other GCC 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.

6.7 Fleet Strategy 2020-2030

6.7.1 With Glasgow City Council (GCC) having comitted to becoming a Net Zero city, it is incumbment to lead by example and embrace the technologies that are now emerging to support around 2,000 vehicle and plant items.

6.7.2 The GCC short term fleet replacement will be Euro 6 for heavy fleet and Electric Battery for light fleet. Initially, Hydrogen will be used in a dual fuel solution for the carriageway gritting fleet.

6.7.3 With funding from the Scottish Government this winter, NRS will be deploying 20 Hydrogen Dual Fuel Gritters which will have a significant imporvement in exhaust emissions. Also, 13 of the Hydrogen Dual Fuel Gritters will have interchangable bodies. These will allow for the seasonality of winter gritting and summer roads maintenance, halving the number of vehicles required.



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 2023 will be 24,000 Tonnes and 4,000 Tonnes grit stone.

7.1.3 The quantity of liquid brine at the start of November 2023 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 Manager. Salt orders will be authorised by the Head of Roads Asset Management.

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.			
Rock Salt Type	RST	Spread Rate Dry Damp Road	Wet Road
Dry Salt	At or above -1.00C	10g/m²	10g/m²
Treated Salt		10g/m²	10g/m²
Dry Salt	-1.10C to -2.00C	10g/m²	10g/m²
Treated Salt		10g/m²	10g/m²
Dry Salt	-2.10C to -3.00C	10g/m²	15g/m²
Treated Salt		10g/m²	10g/m²
Dry Salt	-3.10C to -4.00C	10g/m²	20g/m²
Treated Salt		10g/m²	15g/m²
Dry Salt	-4.10C to -5.00C	15g/m²	25g/m²
Treated Salt		10g/m²	20g/m²
Dry Salt	-5.10C to -7.00C	15g/m²	30g/m²
Treated Salt		15g/m²	25g/m²
Dry Salt	-7.10C to -10.00C	20g/m²	40g/m²
Treated Salt		20g/m²	35g/m²
Dry Salt	-10.10C to -15.00C	30g/m²	60g/m²
Treated Salt		25g/m²	45g/m²

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			
Rock Salt Type	RST	Spread Rate Dry Damp Road	Wet Road
Brine	At or above -2.0C	10ml/m²	20ml/m²
Brine	-2.10C to -5.00C	20ml/m²	30ml/m²
Brine	-5.10C to -7.00C	30ml/m²	n/a

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

TABLE 3

Before Snow and Freezing Rain - Salt Spread Rates

Salt Type	Treatments Before Snow or Freezing Rain	
Dry Salt	Light Snow Forecast	20g/m²
Treated Salt		15g/m²
Dry salt	Moderate/Heavy Snow Forecast	40g/m2 or 2x20g/m2
Treated Salt		30g/m² or 2x15g/m2
Dry Salt	Freezing Rain Forecast	40g/m2 or 2x20g/m2
Treated Salt		30g/m2 or 2x15g/m2

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 Asset Management 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.

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.

The 18 large carriageway gritting vehicles have been converted to dual fuel/hydrogen and diesel.





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 laptop computers.

8.1.4 The Head of Roads Asset Management 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 on Objective Connect. 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 and automated gritting functionality.

8.1.8 The Head of Roads Asset Management 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 distribution 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 Asset Management. The report will be available 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 Severe Weather Control Room may be set up at the Glasgow Operations 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 through:

a) Press Releases.

b) Local Television and Radio Stations.

c) On the GCC web page.

d) Social Media.

9.1.3 The Head of Roads Asset Management 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 GCC 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 Asset Management will inform Police Scotland and TRAFFCOM of forecasts predicting extreme conditions.

9.3.2 Reports from Police Scotland 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 Asset Management is responsible for guidance of the information to be supplied.

9.6 Winter Maintenance Business Continuity - Covid 19

9.6.1 Should Covid 19, a lockdown or an unforeseen situation adversely impact the delivery of winter maintenance, the normal service levels may not be possible to achieve.

9.6.2 Winter maintenance business continuity will be delivered in the following ways:

• Carriageway, footway and cycle way gritting and the replenishment of grit bins may take longer to complete.

• The Severe Weather Control Room (Eastgate) may be set up to: co-ordinate resource deployment; have direct access to real time CCTV and provide regular situation reports to the NRS senior management team.

• Based on the detailed specialist roads weather forecasts, the Decision Maker may re-prioritise the deployment of the available reduced resources. Examples of this can be: deployment of resources to those routes with a greater risk from winter hazards eg main arterial routes due to higher speed limits; schools; accesses to emergency services and areas of higher ground (due to lower and longer lasting road surface temperatures) etc

• Deployment of external contractors.

• Engage with neighbouring Roads Authorities (Councils & Transport Scotland) to provide mutual aid resources to ensure that routes of strategic importance are treated.

• Timeous bespoke stakeholder communications to inform of any disruption to the normal winter maintenance service levels. Social media, press releases and web site notifications will be used.

• If Covid 19 public health guidance does not allow for more than one person in some of our gritting fleet. In certain circumstances, this will require a second vehicle to transport an operative. Also on limited occasions, day time and peak period carriageway treatments may be needed due to the weather conditions requiring a second vehicle to transport a reversing assistant. When additional support vehicles are needed, footway and carriageway treatments will take longer to complete. Public health guidance is kept under review and it is possible that guidance may be changed during the winter gritting season allowing additional vehicle occupancy.

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