



Glasgow City Council

**Environment Sustainability & Carbon Reduction City
Policy Committee**

**Report by Executive Director of Neighbourhoods,
Regeneration and Sustainability**

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Item 4

5th October 2021

WINTER MAINTENANCE 2021-2022

Purpose of Report:

The purpose of this report is to advise and update Committee on the winter maintenance policy and how winter maintenance will be undertaken during this forthcoming winter period November 2021 to April 2022.

Recommendations:

It is recommended that Committee notes the terms of the report and the updated Winter Maintenance Plan attached at Appendix 1.

Ward No(s):

Citywide: ✓

Local member(s) advised: Yes No ✓

consulted: Yes No ✓

1. Introduction

- 1.1 The purpose of this report is to outline the policy and management procedures for the Winter Maintenance Service.
- 1.2 **Winter 2020/21** - Last year, winter gritting operations commenced on 18 November 2020 and continued until 5 May 2021. 91 carriageway, 41 cycle way and 42 footway treatments were instructed, using a total of 14,993 tonnes of rock salt and 7,000 litres of liquid brine. The volume of rock salt used was substantially less than in a prolonged severe winter when 24,000 tonnes of rock salt could be used.
- 1.3 Early in 2021, Glasgow experienced its most severe snow event in the last 10 years and this was preceded by extremely low temperatures and freezing rain in late December 2020. This period of severe weather led to challenging gritting conditions due to the de-icer being frequently washed off, requiring repeated treatments during the periods of freezing rain and the extensive heavy snow falls required repeated ploughing and gritting.
- 1.4 This coming winter, a new fleet of 20 Hydrogen Dual Fuel Gritters will be deployed which will bring a significant improvement in exhaust emissions.

2. Legislation

- 2.1 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.
- 2.2 The Glasgow City Council Winter Maintenance Plan is based on the principles contained within the code of practice, 'Well-Managed Highway Infrastructure' and the National Winter Service Research Group's practical guidance and research and sets out how the winter maintenance service will be provided for Glasgow.
- 2.3 The Council's aim is to provide an effective and efficient winter maintenance service in accordance with Neighbourhoods, Regeneration and Sustainability's (NRS) Annual Service Plan and Improvement Report and within the resources available, to allow the safe passage of vehicles and pedestrians, minimise delays due to winter weather and ensure operations are undertaken safely.
- 2.4 The service is designed 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.

3. Resources

- 3.1 The gritting of the road network will be carried out mainly by night shift operatives based at NRS's Gartcraig Depot. Operating on a nightshift basis addresses driver hours' legislation and reduces disruption to normal day time work activities.

Gritting of the road network will also be undertaken during normal hours as and when required.

The gritting of the footway and cycle way network will be carried out by operatives during day shift but with the ability to start before 0500hrs when required.

- 3.2 Arrangements are made each year to ensure the availability of sufficient specialist plant and vehicles, trained operatives and supervisors. A full description of these resources is available within the Winter Maintenance Plan. All of the main carriageway gritting fleet has global positioning satellite and automated gritting technology. This technology has improved the level of service provided in terms of accuracy, health and safety, monitoring and recording, resulting in a more cost effective service.
- 3.3 This winter, 18 drivers can be on duty on any given night and when necessary this resource can be increased. Their primary duty is driving gritting vehicles but when carriageway gritting is not required the drivers can be used for cleansing, lighting, emergency response and any other duties directed by management.
- 3.4 Mechanised carriageway & footway plant deployed in winter maintenance operations are -
- 7 permanently mounted 9m³ carriageway gritting vehicles
 - 13 demountable 6m³ carriageway gritting vehicles
 - 2 mini 3m³ carriageway gritting vehicle
 - 12 trailer carriageway gritters
 - 23 carriageway snow ploughs
 - 1 narrow gauge brine spraying vehicle for segregated cycle ways
 - 6 large and mid-size tractor units with mounted gritters and ploughs
 - 22 utility vehicles/small tractors with mounted gritters and ploughs
 - 18 pedestrian gritters
 - 30 powered footway ploughs

4. Treatment Priorities

- 4.1 The following criteria have been applied to determine the Priority 1, 2 and 3 categories for carriageways, footways, cycle ways and Spaces for People:

Carriageways -

Priority 1 Carriageway Routes -

- All main bus routes registered at the end of 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 Route;
- 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;

Priority 2 Carriageway Routes -

- Locations which include the following amenities - 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 carriageways within each neighbourhood and industrial access roads.

Priority 3 Carriageway Routes -

- All remaining carriageways.

Footways

Priority 1 Footway Routes -

- Access routes to schools;
- Pedestrian precincts;
- Prioritised city centre footways with high pedestrian traffic;
- Shopping centres out with the city centre;
- Hills steeper than 1 in 10 gradient with moderate pedestrian traffic;
- Carriageway areas that have been allocated to Spaces for People for walking and wheeling which are adjacent to an existing Priority 1 Footway route.

Priority 2 Footway Routes -

- Locations which include the following amenities - 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. Also a designated access through route has been determined for each Park;
- Carriageway areas that have been allocated to Spaces for People for walking and wheeling which are adjacent to an existing Priority 2 Footway location.

Priority 3 Footway Routes -

- All remaining footways.

Cycle Ways

Priority 1 Cycle Way Routes/busy commuter routes –

- The operational segregated cycle way network.
- This winter the following cycle way sections will be added:
North Canal Bank Street: Craighall Road to Borron Street;
Garscube Road: Garscube Road from Firhill Road to the underpass at Dobbies Loan;
Hinshaw Street from Maltbarns Street to Garscube Road;
Possil Road from Baird Brae to Garscube Road;
St George's Road from number 525 to Garscube Road;
North Woodside Road: Hopehill Road to Maryhill Road;
London Road: London Drive to Daldowie Road;
St Andrews Drive: Shields Road to Titwood Road &
Cambridge Street: Renfield St to Cowcaddens Rd.
- 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.
- Carriageway areas that have been allocated to Spaces for People cycle lanes which are adjacent to an existing Priority 1 Carriageway route.

Priority 2 Cycle Ways -

- All remaining cycle ways.

- 4.2 Pre-treatment of Priority 1 Carriageways, Footways, Cycle Ways and Spaces for People will be instructed should the domain based weather forecast predict that hoar frost, ice or snow is likely to be present on road surfaces.
- 4.3 Post-treatment of Priority 2 Carriageways, Footways, Cycle Ways, Spaces for People and Priority 3 Carriageways and Footways 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.
- 4.4 It should be noted that, if Priority 1 Carriageways, Footways, Cycle Ways and Spaces for People require treatment during any extended period of ice or snow, their treatment will take precedence over Priority 2 and Priority 3 Route treatment.
- 4.5 Where lying snow requires to be ploughed on a Priority 1 Carriageways, the ploughing will move the snow to the nearside of the road. Where the ploughed snow covers a Spaces for People cycle lane or additional space for walking/ wheeling, clearing of the ploughed snow and the re-establishment of any out of line barriers etc will take place between 0730hrs and 1830hrs the following day as resources allow.
- 4.6 During sustained periods of winter hazards, all available operational resources will be deployed to gritting and/or snow clearing operations. Also, arrangements are in place to call upon external contractors as and when winter weather conditions dictate.

5. Decision Making Process

- 5.1 Each day at 0500hrs, 1100hrs and 1700hrs a detailed hour by hour weather forecast highlighting expected hazards such as hoar frost, ice or snow for the next 36hrs is received as well as a 6hr interval forecast for the next 8 days. This alerts the decision maker, other appropriate managers and winter supervisors as to whether any gritting operations are likely. For the purposes of winter weather forecasting, the city has been divided into two 'climatic domains'– City Centre and Outer. The weather systems and temperatures affecting the climatic domains vary and may allow for no gritting to be undertaken in the City Centre when road temperatures are marginal. The forecasts are supplemented by road sensors situated throughout the city which provide real time information on road surface and weather conditions.
- 5.2 Following receipt of the 1100hrs daily forecast a minimum of 2 decision makers will agree the gritting treatment required. Wherever possible, pre-salting will be carried out in advance of any anticipated frost, ice or snow. The timing of any gritting treatment will take account of forecast precipitation due to the risk of wash off reducing the effectiveness of the gritting.

Any required repeat gritting (caused by rain washing off de-icer) will normally be restricted to Priority 1 Carriageways, Footways and Cycle Ways.

- 5.3 Once instructed, the treatment decision is confirmed to managers, supervisors and depots by email.
- 5.4 The instructed gritting treatment will be based upon the weather forecast conditions although the instruction may be changed or added to, should the later forecasts or actual conditions dictate. If marginal road surface temperatures are forecast over-night, vehicle patrols may be instructed and any hazards encountered reported to the on duty supervisor. The duty supervisor will then update the decision maker who may then issue a further treatment instruction.
- 5.5 The final daily weather forecast is received at around 1700hrs for review by the decision maker. Any subsequent changes to the predicted weather will be phoned to the decision maker by the forecast provider, DTN.

6. De-icing Materials and Grit Bins

- 6.1 The de-icer used for precautionary treatment of Priority 1 Carriageway Routes is a proprietary product called Safecote. Safecote has a molasses additive which enhances the performance of rock salt in terms of accuracy, placement and longevity. Safecote can be applied at lower spread rates than untreated rock salt. These qualities allow gritting vehicles to travel greater treatment distances and as such improves the efficiency of the gritting fleet.

In addition to Safecote, untreated rock salt is used for reactive gritting and as required during severe weather situations.

- 6.2 As Safecote uses lower spread rates, it is less harmful to the environment. There is also the added benefit that Safecote is 82% less corrosive than untreated rock salt and so reduces damage to vehicles, plant and the roads infrastructure as shown in independent tests.
- 6.3 In designated city centre shopping pedestrian areas, white marine salt has been used successfully to minimise discolouration at shop frontages and entrances.
- 6.4 The de-icer used for precautionary treatment of Priority 1 Segregated Cycle Ways is a liquid brine solution applied by a low level rear mounted spray bar on a narrow gauge multi-purpose vehicle. The Priority 1 NCN 75 is shared by pedestrians and cyclists and is wider than the segregated cycle ways and is de-iced using rock salt spread by mechanised footway plant?.
- 6.5 The de-icer used for precautionary treatment of Spaces for People will be: untreated rock salt when adjacent to existing Priority 1 Footways and Safecote treated rock salt on pop up cycle lanes.
- 6.6 In addition to the gritting service and to promote 'self-help', 1578 grit bins will be sited in the city at the commencement of the winter season to allow members of the public to grit in areas out with the priority gritting routes. These bins will be filled with untreated rock salt prior to the start of winter. Their locations can be

viewed online via the Winter Gritting Story Map and it can also be used to request a refill.

- 6.7 Members of the public can also obtain small quantities of rock salt for their own use at strategically sited larger stock piles throughout the city. These addresses are included in various publications and can be viewed on the Council's winter maintenance page on the Connect website.
- 6.8 Also in any prolonged severe weather periods, large 1 tonne temporary grit sacks will be placed strategically within neighbourhoods to assist community resilience during severe weather.
- 6.9 Winter wardens from the Neighbourhood Improvement Volunteer (NIV) resource have been identified and further expressions of interest are currently being sought from the remaining registered NIVs. The aim is to have a winter warden available in each local neighbourhood area although this may be challenging due to Covid 19. The winter wardens are trained and equipped to undertake organised footway gritting within their neighbourhood.

7. Communication Strategy

The winter maintenance strategy provides adverse weather warnings, winter gritting operational and school closure information to residents and businesses. Twitter and My Glasgow App will be the primary means of communicating this information. In addition, an interactive online Winter Gritting Story Map is available and suitable for residents to use.

8. Fleet Strategy 2020- 2030

- 8.1 With Glasgow City Council (GCC) having committed to becoming a Net Zero city, it is incumbent to lead by example and embrace the technologies that are now emerging to support around 2,000 vehicle and plant items.
- 8.2 GCC has a two pronged strategy: either Battery Electric for light fleet or Hydrogen Fuel Cell powered heavy vehicles/gritting vehicles. Hydrogen will initially be used in a dual fuel solution and following that using Hydrogen Fuel Cells.
- 8.3 With funding support from the Scottish Government, this winter, NRS will be deploying 20 Hydrogen Dual Fuel Gritters which will have a significant improvement in exhaust emissions. Also, 13 of the Hydrogen Dual Fuel Gritters will have interchangeable bodies. These will allow for the seasonality of winter gritting and summer roads maintenance, halving the number of vehicles required.
- 8.4 A Hydrogen Refuelling Station will be installed at NRS Gartcraig Depot this winter.

9. Winter Maintenance Business Continuity – Covid 19

9.1 Should there be another wave of Covid 19 or local restrictions or lockdown, which severely impacts on the resources available for delivery of winter maintenance, the normal service levels may not be possible to achieve.

9.2 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 Hub (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 longer lasting road surface temperatures).
- Deployment of external contractors.
- Engage with neighbouring 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.

10. Review of Winter Maintenance Plan

The Winter Maintenance Plan 2021-22 takes account of the following areas –

- Elected member feedback.
- Additional lengths added to Priority 1 Cycle Ways (details in Section 4).
- Spaces for People: pop up cycle lanes and additional space for walking and wheeling.
- The deployment of two new small tractors with mounted gritters and ploughs on footways and cycle ways.
- Winter Maintenance Business Continuity – Covid 19.

11 Policy and Resource Implications

Resource Implications:

Financial: Delivered within the allocated budget of £1.395m.

Legal: To meet the requirements of Section 34 of the Roads (Scotland) Act 1984

Personnel: None

Procurement: None

Council Strategic Plan: This report is aligned to Council's Strategic Plan Priority No. 54 - Invest in roads and pavement maintenance, improving conditions, residents' satisfaction and contributing to active travel networks. Ensure community involvement in local decision making about this investment.

Equality and Socio-Economic Impacts:

Does the proposal support the Council's Equality Outcomes 2021-25? Please specify. Yes, outcome 8 – citizens with protected characteristics are provided with targeted, improved and more accessible information about the services provided by the Council Family.

What are the potential equality impacts as a result of this report? An EQIA screening has been undertaken. The provision of an effective and efficient winter maintenance service has a positive impact on all citizens.

Please highlight if the policy/proposal will help address socio-economic disadvantage. The winter maintenance service supports positive socio-economic impacts by taking reasonable steps to prevent snow and ice from endangering safe passage of pedestrians, cyclists and other road users.

Climate Impacts:

Does the proposal support any Climate Plan actions? Please specify: Yes - the increase in cycleway gritting supports Action No 56.

What are the potential climate impacts as a result of this proposal? Appropriate winter gritting enables the city to operate during winter, reducing the likelihood of vehicle congestion.

Will the proposal contribute to Glasgow's net zero carbon target? Yes detailed as detailed in Section 8 of this report.

**Privacy and Data
Protection Impacts:** None

12 Recommendations

It is recommended that Committee notes the terms of the report and the updated Winter Maintenance Plan attached at Appendix 1.