

Environment & Communities Department

HIGHWAY OPERATIONS

**WINTER MAINTENANCE PLAN
2023/2024**



EXECUTIVE SUMMARY

This Winter Maintenance Plan details the London Borough of Enfield's Winter Maintenance arrangements for 2023/2024

It has been developed in response to the Highway Authority's statutory duty under the Highways Act, Railways and Safety Transport Act and Traffic Management Act.

The strategy adopted for Enfield has been developed in accordance with the recommendations set out in the Well Managed Highway Infrastructure - "A Code of Practice" and guidance offered by the National Winter Service Research Group.

Winter maintenance involves treating the public highway to:

- Prevent ice from forming (precautionary salting)
- Melt ice and snow already formed (post salting).
- To remove snow under extreme conditions

Precautionary and post salting activities are often referred to as gritting.

The plan has been developed from an understanding of local conditions and takes account of the current resource availability. It identifies the Council's policy on route prioritisation and outlines operational procedures.

WINTER MAINTENANCE PLAN 2023 - 2024

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1. POLICY STATEMENT

- 1.1 The Council has a duty under the Highways Act 1980 Section 41(1a) as a Highway Authority to ensure so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice.

The London Borough of Enfield has categorised the treatment for ice or snow under precautionary salting, post salting and snow clearance of public highways into two categories: carriageways and footways. The Council will pre-treat areas and then, if necessary, continue to treat using its available resources.

When assessing the carriageway priorities, consideration has been given to the Network Management Hierarchy that has been established for Highway Safety Inspections. This hierarchy has been developed by considering the usage and functionality of the highway.

Carriageways

- Priority 1-** Principal roads, main commuter routes, all bus routes, emergency services facilities, access to main industrial areas and access for Council critical service provision; total length 129 miles (207 km) (see map appendix 1.)
- Priority 2 -** Borough roads that are not included on the priority 1 gritting network but have a gradient of greater than 1 in 20 and serve more than 50 residential properties. total length 21 miles (34 km) (see map appendix 1a.)
- Priority 3 -** All other adopted borough roads that are not included on the priority 1 or 2 network.

When ice is predicted the Council will initially pre-treat all priority 1 carriageways. Depending on the weather forecast received and any subsequent updates, treatment of the priority 1 carriageways may continue using the available resources in an efficient manner to treat for ice and or snow.

There is no pre-treatment of priority 2 or 3 carriageways. The decision to commence treatment of these priority networks will be made by the Director of Environment & Street Scene and it will be made having considered existing salt stocks, available resource, and long-range weather forecasts continually being viewed.

Footways / Footpaths

There is no precautionary or post treatment of footways and footpaths following typical overnight frosty conditions.

In exceptional conditions, when there is a forecast for heavy snow fall with a prolonged cold spell to follow, resulting in snow sitting on footways for a few days, the salting of Strategic footways/footpaths will be undertaken by the Council's Street Cleansing team. The decision to commence footway salting will be made by the

Director of Environment & Street Scene and it will be made having considered the existing salt stocks and long-range weather forecasts.

- 1.2 The cost effectiveness of the winter maintenance service will be ensured by:
 - prioritising and optimising winter maintenance routes.
 - deploying salt or clearing snow on an assessment of need.
- 1.3 The 2023-2024 winter maintenance budget includes the base costs and sufficient operational expenditure to enable priority 1 salting/snow clearance work to be undertaken in an average year.
- 1.4 There is no identified funding for Priority 2 or Priority 3 carriageway salting work, or any footway treatments.
- 1.5 Ice prediction/weather forecasts will be obtained from Vaisala Bureau Services and the MetDesk weather service provider. Daily forecasts will be obtained and reviewed by Enfield Councils' dedicated decision makers in Highways Operations, between the 1st November and 31st March each winter season.
- 1.6 In the event of any National shortage of salt supplies, Enfield may introduce a reduced gritted carriageway network known as the "resilience network". This network includes all bus routes throughout the borough and some other main link roads into and across the borough and is shown in appendix 5.

2. ENFIELD RESPONSIBILITIES (see organisational chart on page 7)

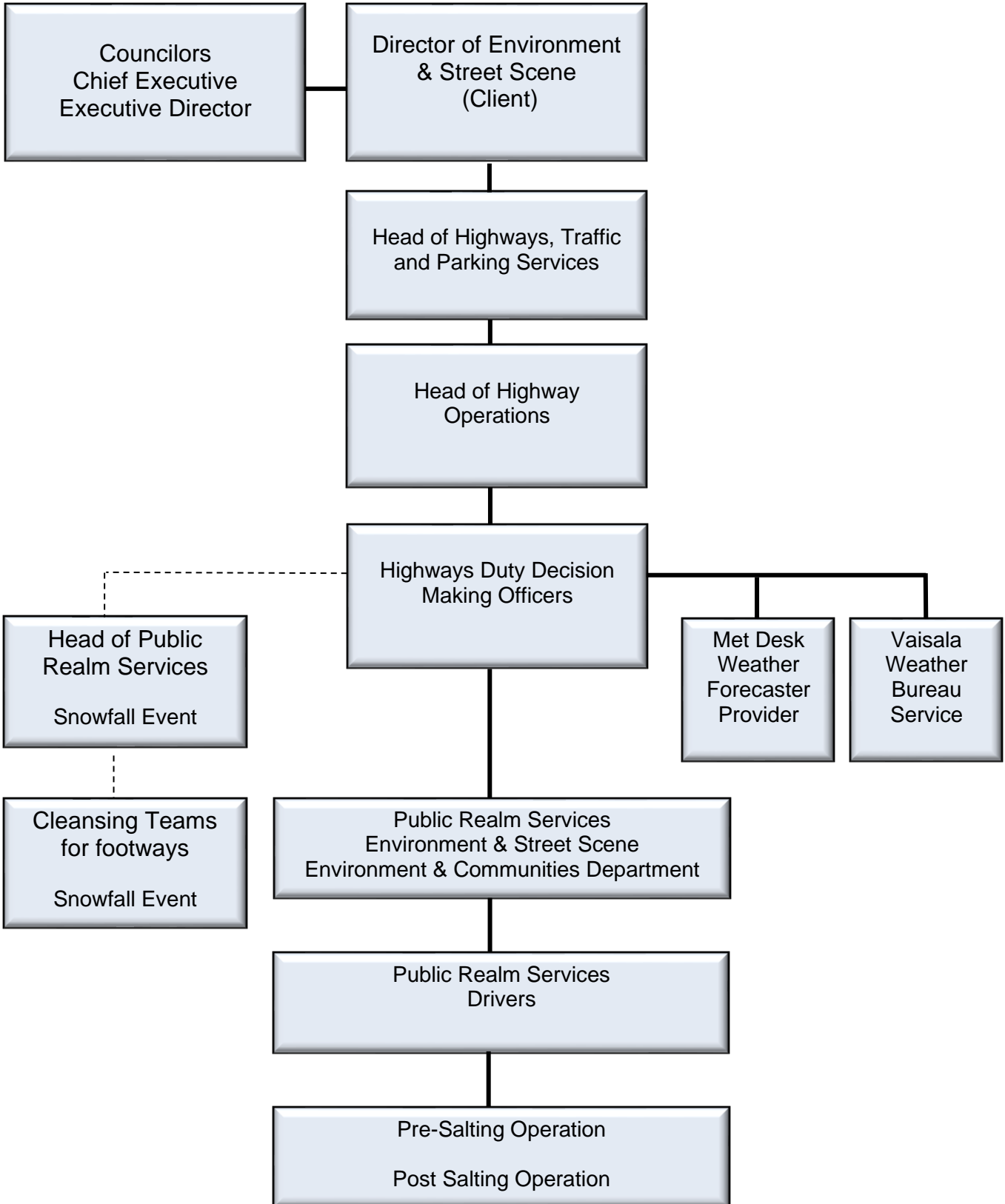
2.1 Highways, Traffic and Parking Services responsibilities (Client Role)

- Provision of adequate supervision (point of contact) and suitably trained decision makers during the winter maintenance period.
- Ensure the calibration and maintenance of the Councils Road Weather Stations.
- Provide MetDesk and Vaisala Bureau services with a list of the decision makers contact telephone numbers.
- Ensure MetDesk reports are submitted in the required format.
- Prepare, review, and update annually the winter maintenance plan.
- Identify, specify, and monitor standards of performance.
- Define road and footway priorities.
- Optimise routing efficiencies.
- Day to day winter decision making.

2.2 Public Realm Services responsibilities (Operational Role)

- Provision of adequate supervision (point of contact) and suitably trained driver/operatives during the winter maintenance period.
- Ensure communications are available and operational between drivers and supervisory staff.
- To provide, calibrate and maintain adequate gritting vehicles.
- To ensure that maintenance runs are regularly carried out on the gritting fleet for reliability.
- To provide a storage for salt and salt loading.
- To ensure a minimum quantity of 500 tonnes of salt is held throughout the winter season.
- To treat roads as specified within the Borough in accordance with the specification for Winter Maintenance as and when directed by a decision maker.
- Completion of daily gritting record sheets.
- To report any non-compliance on salting routes to the decision-making team as soon as practicable.

WINTER MAINTENANCE OPERATIONAL ORGANISATION CHART



3. CARRIAGEWAY & FOOTWAY HIERARCHY & ROUTE PLANNING

- 3.1 The Council's Road hierarchy and highway classifications are described in Enfield's Highway Asset Management Plan.

For winter maintenance purposes:

Carriageway Priority 1 work includes Principal roads, main commuter routes, all bus routes, emergency services facilities, access to main industrial areas and access for Council critical service provision; total length 129 miles (207 km) (see map appendix 1.)

Carriageway Priority 2 work includes Borough roads that are not included on the priority 1 gritting network but have a gradient of greater than 1 in 20 and serve more than 50 residential properties; total length 21 miles (34 km) (see map appendix 1a.)

Carriageway Priority 3 work includes all other adopted borough roads that are not included on the priority 1 or 2 network.

Strategic footways/footpaths - (see appendix 2). There is no precautionary or post treatment of footways and footpaths following typical overnight frosty conditions. In exceptional conditions, when there is a forecast for heavy snow fall with a prolonged cold spell to follow, resulting in snow sitting on footways for a few days, the salting of Strategic footways/footpaths will be undertaken by the Council's Street Cleansing team.

- 3.2 Carriageway Priority 1 - The Priority 1 network of roads has been through a route optimisation process using specialised software programmes to produce 4 efficient gritting routes.

Carriageway Priority 2 - The Priority 2 network of roads have been evaluated following an assessment process, however, any treatment will require authorisation from the Director of Environment and Street Scene and will generally be on a case-by-case basis.

Carriageway Priority 3 - Treatment will require authorisation from the Director of Environment and Street Scene and will generally be on a case-by-case basis.

Strategic footways/footpaths - In exceptional conditions, when there is a forecast for heavy snow fall with a prolonged cold spell to follow, resulting in snow existing on footways for a few days, the salting of Strategic footways/footpaths will be undertaken by the Council's Street Cleansing team.

4. WEATHER FORECASTS

- 4.1 The availability of accurate weather forecasts at appropriate times in the decision-making process is essential for the delivery of a high-quality service and to ensure maximum efficiency. For this purpose, the Council has contracted Vaisala Ltd for their Weather Station Bureau Services and the MetDesk for weather forecasts. This will include the below for the duration of the Winter Maintenance period.
- 24-hour forecasts.
 - Web portal providing instant access to current weather forecasts.
 - Dedicated sensor monitoring.
 - 24-hour access to dedicated forecasters.
 - Updates as required via dedicated web portal.
 - Alerts from the duty forecasters of any forecast fluctuations/changes in weather conditions.
- 4.2 There is a weather monitoring station located at The Ridgeway, Enfield EN4 and a remote road condition and weather monitoring installation, located in Ridge Avenue N21. Information from these sites is fed into the decision-making procedure matrix and is used by the Highway Services' duty decision making officers to predict treatment needs. VAISALA TMI LTD carries out the calibration and maintenance of the ice prediction/weather monitoring station and associated software.
- 4.3 The Vaisala bureau database provides access to temperature and sensor data from our weather monitoring stations and records the sensor conditions throughout the winter maintenance period.
- 4.4 Highway Operations duty decision making officers, receive a minimum of two weather forecasts a day. Highway Operations duty decision making officers will also receive supplementary reports throughout the day, dependent on the severity of the weather.
- 4.5 The Highway Operations duty decision making officers use weather forecasts obtained from the MetDesk to decide if a treatment is required. If a treatment is necessary, the forecast is used to determine the appropriate salt spreading rate and treatment time along with any further treatments that maybe required.
- 4.6 Weather forecasts are received from the MetDesk from 1st November until 31st March each winter season.

5. SUPERVISORY AND OPERATIONAL PERSONNEL

5.1 Client Officers

To cover the client responsibilities identified in section 2, the Council will directly employ the following officers:

WINTER MAINTENANCE	
Director of Environment & Street Scene	
Head of Highways, Traffic and Parking Services (Client)	Head of Public Realm Services (Operational)
Head of Highway Operations	2 x Senior Operations Managers
Principal Highway Officer	Operational Staff
2 x Senior Highway Officers	

The percentage of time each officer will be required to allocate to winter maintenance activities will vary from year to year depending on the:

- Severity of weather conditions.
- Frequency and extent of salting/snow clearance activities.

5.2 Operational Personnel

The provision of labour for operational activities is the responsibility of Enfield Public Realm Services for carriageway and footway winter treatments.

Enfield's Public Realm Services will provide 24-hour cover during the winter maintenance season and during the operational periods:

1st November until 31st March.

6. PLANT & VEHICLES

- 6.1 Enfield's Public Realm Services will provide compliant gritting vehicles for each winter season.
- 6.2 Full fleet inventory. (See appendix 3 below)

7. OPERATIONAL COMMUNICATIONS SYSTEMS

- 7.1 All gritter drivers are provided with mobile phones to ensure communications are maintained with their supervisors.
- 7.2 All supervisory staff will be provided with mobile phones to enable them to keep in contact with the decision makers and senior officers.

8. MATERIALS & STORAGE FACILITIES

- 8.1 Dry salt is purchased from dedicated salt mines in the United Kingdom. The material is of a high quality and is supplied ready crushed, graded, and suitable for loading straight into gritting vehicles.
- 8.2 A salt storage facility is provided at Morson Road Depot.
- 8.3 The stock of salt to be held at the Morson Road Depot at the beginning of the winter season is 1000 tonnes. A salt stock management system is used to ensure a minimum salt stock of 500 tonnes is retained throughout the season and records of quantities when used per grit/route. Towards the end of the winter season the quantity held will be reduced allowing for new salt to be delivered and used year on year.
- 8.4 In extreme circumstances where we may find that salt levels are significantly reduced, mutual aid would be sought from adjoining boroughs or Transport for London. In the event of any extreme circumstances continuing a localised salt cell may be introduced, with salt distribution being managed by Transport for London and the Department for Transport.

9. BUDGET

- 9.1 Winter maintenance of principal roads, borough roads and footways are funded from the Council's general revenue accounts.
- 9.2 Budget provisions for winter maintenance activities are reviewed annually. Assessment of budget needs is based on historic fixed and variable costs involved in service provision.

10. MEDIA COMMUNICATIONS

- 10.1 Highway Operations have a dedicated winter service web page (Gritting and Snow Clearance) on the Council's web site to provide information to the public during winter. This information comprises treatment route plans and self-help guidance.
- 10.2 All Winter Maintenance decisions are shared with other weather critical departments within Enfield, adjoining boroughs and Transport for London.
- 10.3 If prolonged periods of snow or ice were to be predicted and/or occurred, public announcements/warnings would be distributed via the Council's web site, Twitter, Facebook and possibly the local radio, local press, and the Council's free newspaper. The Council will also maintain close links with the police and other emergency services, other Boroughs, Transport for London, and their agencies.

11. PERFORMANCE MONITORING

Purpose - To determine a measure of efficiency in undertaking winter service salting operations.

Description - The percentage of occasions that all salting routes were completed within the planned salting time.

Definition - The percentage is calculated from the total number of salting treatments over the winter period. The winter period may vary according to climatic conditions and from year to year.

Reasoning - To maintain a network free from icy conditions it is essential to complete all salting operations before the onset of freezing conditions leading to the formation of ice. e.g., That treatment is completed before the weather forecast predicted a zero-temperature time.

12. DECISION MAKING PROCEDURES

The process of deciding when to treat carriageways is as follows:

Between 1st November and 31st March each winter year, daily forecasts are obtained by Highway Operations duty decision making officers using a direct link with the weather forecasting organisation.

These forecasts are read in conjunction with actual temperature readings and sensor data from the boroughs' weather station located at The Ridgeway EN2 and Ridge Avenue N21. The temperature forecast enables the Highway Services duty decision making officers to determine when to grit the priority 1 network or other selected routes.

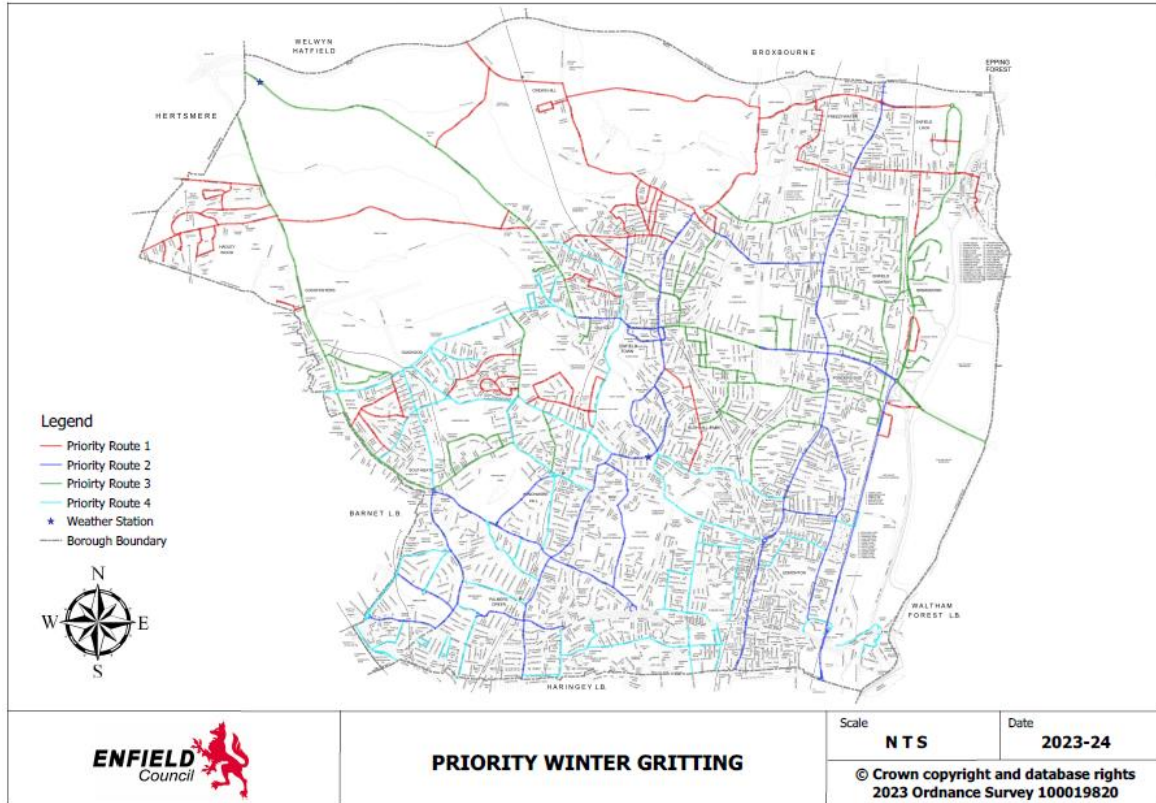
A forecast is obtained between 12:00 and 15:00hrs each day. A follow-on forecast update is received at approximately 18:00hrs daily.

If weather conditions change dramatically from that which is forecasted, the weather forecasters will telephone the Highway Services duty decision making officer with the updated forecast and this will also be uploaded onto the bureau service portal.

- When all the predicted conditions are known, the Highway Operations duty decision making officer will publish the decision made via the MetDesk portal.
- Depending on the forecast, a visual inspection may be made by the Highway Operations duty decision making officers.
- Following the visual inspection, a decision is made by the appropriate Highway Operations duty decision making officer(s) whether to fully salt, or to retain on standby to cover for any rapidly changing conditions.

APPENDIX 1

Map of Carriageway Priority 1 Winter Gritting Routes

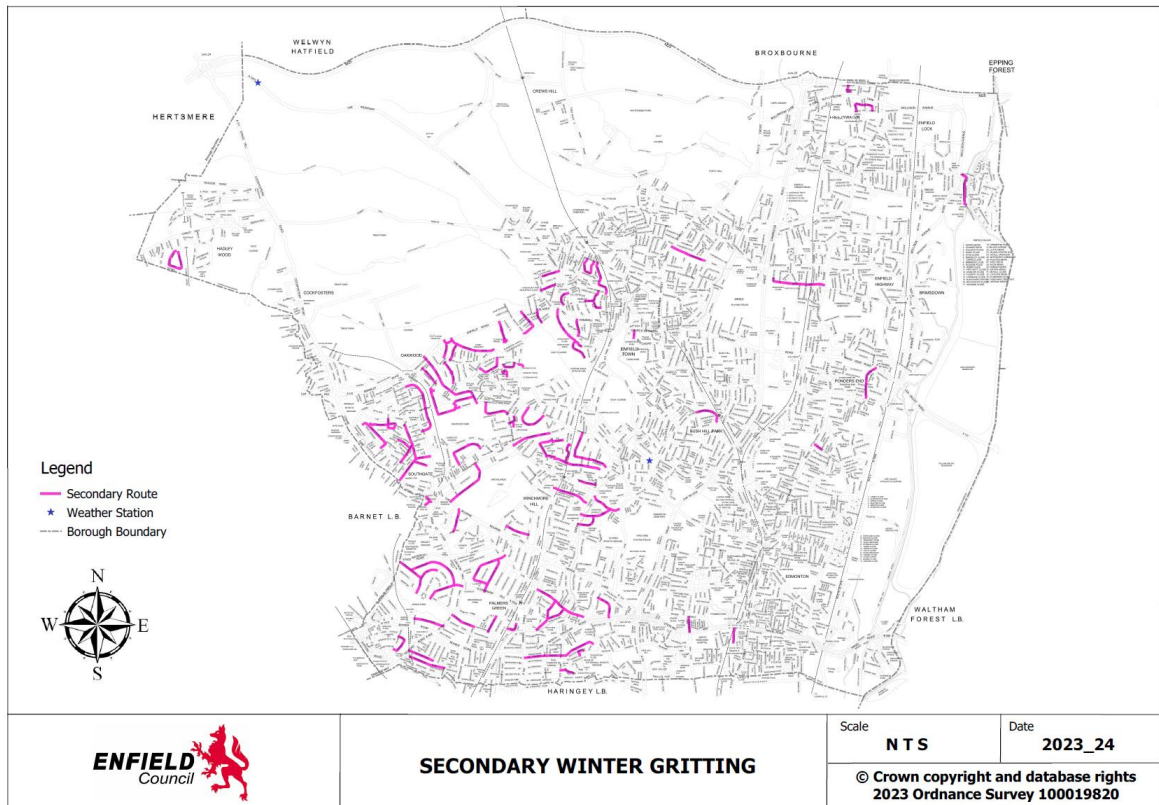


An interactive Winter Gritting Map can be found at

<https://new.enfield.gov.uk/services/roads-and-transport/gritting-and-snow-clearance/>

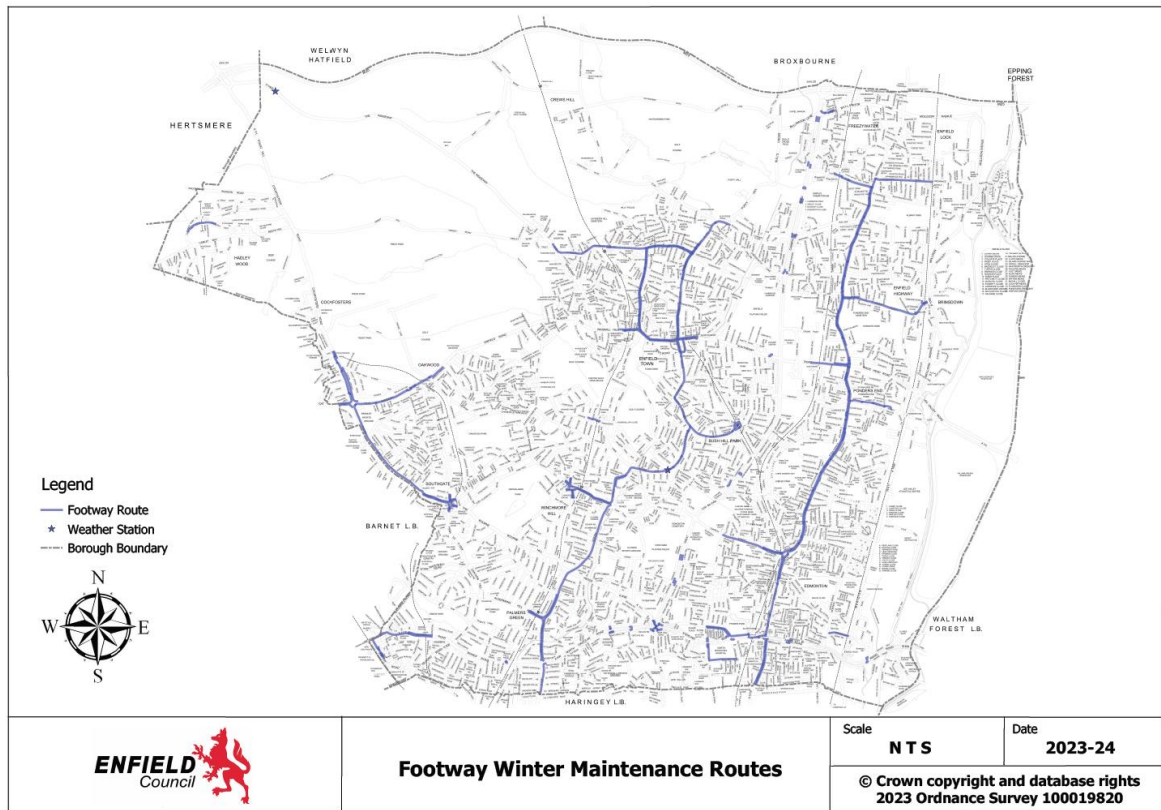
APPENDIX 1a

Map of Priority 2 Secondary Winter Gritting Route



APPENDIX 2

Map of Strategic Footway/Footpaths Winter Maintenance Gritting Routes



APPENDIX 3

(Vehicle Fleet Inventories)

No. of Vehicles	Vehicle Type	Body Type	Load Capacity
4 x vehicles	Volvo	Volvo FLE Econ	6m ³ spreader
1 x spare vehicles	Volvo	Volvo FLE Econ	6m ³ spreader

APPENDIX 4

MetDesk Definitions

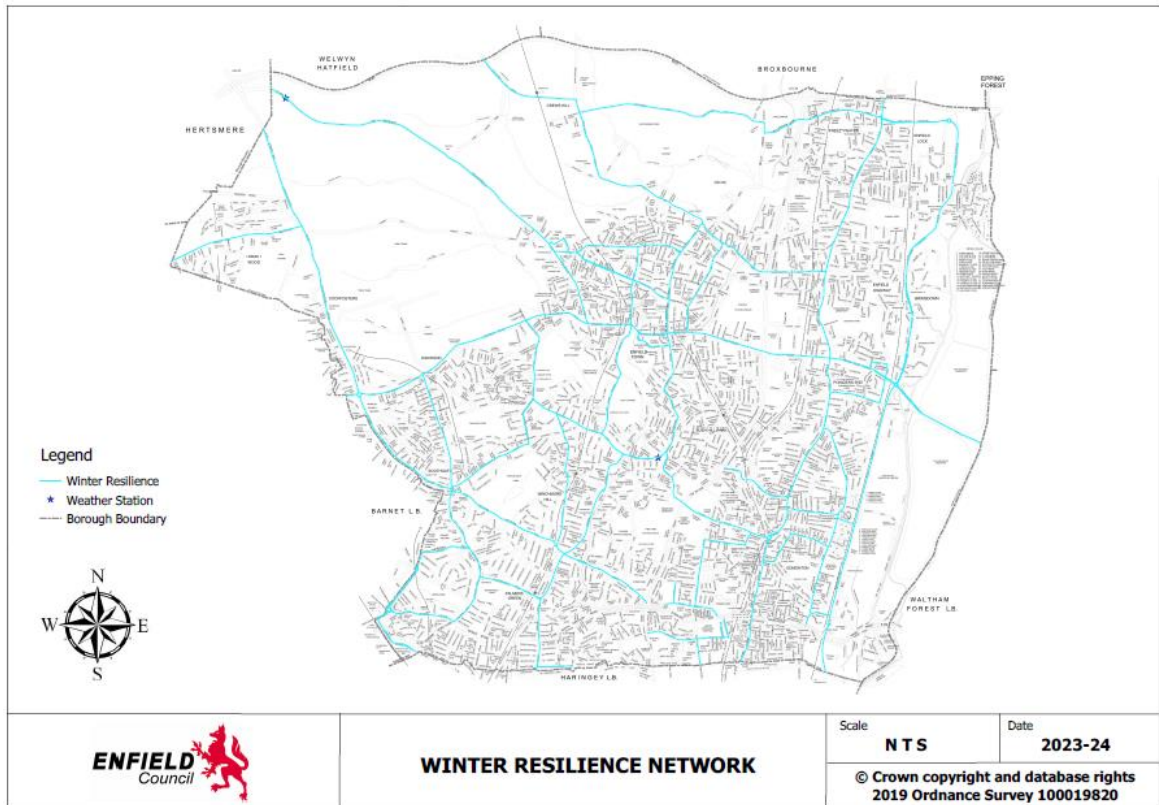
24-hour summary example below

24 Hour Summary for London Borough of Enfield																	
Forecast Issued:	13th December 2022 18:04:46 GMT					Forecaster:											
Forecast Period:	Tuesday 13/12/22 12:00 to Wednesday 14/12/22 12:00					Forecaster DDT:											
Headline	EVENING UPDATE: COLDER - RSTS BELOW ZERO TONIGHT WITH A RISK OF ICE																
Confidence	HIGH																
General Synopsis	Staying cloudy and dry this evening and overnight. RSTs below zero tonight. A few clearer spells may develop towards morning allowing RSTs to dip lower than previously expected. There will be a risk of ice where surfaces have remained damp/wet through the day. Dry, cold and mostly cloudy tomorrow morning, with some brightness possible at times.																
Forecast Hazards and Temperatures																	
Domains	Readiness Colour	Min RST	RST < 0	Min Air	Ice	Hoar Frost	Snow / Level (m)	Drifting	Heavy Rain	Fog	Freezing Rain						
Borough of Enfield	RED	MS 2.8	16-10	MS 1.8	16-10	H	07-09	H	N	H	N/A	N	H	N	H	N	H
Snow Summary	None.																
Wind Summary					Readiness Colour Coding												
Borough of Enfield	13/12/221200-1800	13/12/221800-0000	14/12/220000-0600	14/12/220600-1200	GREEN	Road surface temperatures are expected to remain above plus 1C (or above 2C on a low confidence scenario)											
Direction	E	NE	N	N	AMBER	1. Road surface temperatures are expected to drop to between (and including) zero and 1C2. Road surface temperatures are expected to drop below zero but roads are predicted to remain dry3. On a low confidence marginal forecast, amber may be used if road surface temperatures are expected to drop between 1 and 2C											
Speed (mph)	5-6	5-6	6-8	8-10	RED	Road surface temperatures are expected to fall below freezing with ice and/or hoar frost and/or snow accumulations and/or freezing rain likely.											
Gust (mph)	12	12	16	21													

APPENDIX 5

Resilience Gritting Network Map

(Ref: National Salt Shortage)



APPENDIX 6

Decision Distribution List

Enfield Distribution List
Communications Team
Emergency Planning
Facilities Management
Parking Services
Public Realm Services
Transport Operations
Waste Services
External Partners Distribution List
Barnet Council
Haringey Council
North London Waste Authority
Transport for London
Waltham Forest Council