

Winter Maintenance Policy 2015-2018



Contents

1	 Background	3
2	 Purpose of policy	3
3	 Procedures.....	4
3.1	Weather forecasts	4
3.2	Priority of Roads	5
3.3	De-icing Materials	7
3.4	Operational Practices.....	9
3.6	Footways and Cycleways	11
3.7	Salt Bins and Salt Heaps	12
3.8	Resources.....	13
3.9	Standards Monitoring.....	13
3.10	Vehicle Tracking	13
3.11	Extreme Weather Protocol.....	14
3.12	Community Engagement	14
4	 Risk Assessment.....	14
5	 Background Documents.....	15

1 | Background

- 1.1 Section 41 of the Highways Act 1980 places a statutory duty on the Highway Authority to maintain the highway, as follows:-

“(1A) In particular, a Highway Authority is under a duty to ensure, so far as is reasonably practicable, that a safe passage along a highway is not endangered by snow or ice.”

- 1.2 The legislation does not impose an absolute duty but rather involves a balance between the degree of risk and the steps necessary to eliminate the risk.
- 1.3 In order to provide a statutory defence, a County Policy on winter maintenance services is required which should be reviewed on a regular basis.
- 1.4 The requirement to ensure compliance with Section 1.3 has been emphasised in collaborative meetings that have taken place amongst the six North Wales Authorities following the Coroner’s inquest into the winter maintenance incidents that have occurred in North Wales Authorities during recent years.
- 1.5 The level of service for County Roads is determined by the elected Members of each Council. This is based on a risk assessment approach to determining a cost effective hierarchy of routes and treatments. The Authority believes that the level of service meets the requirements on the current interpretation of **‘reasonably practicable’** but will continue to keep service provision under review, particularly in respect of any legal judgements. A review of the Winter Maintenance operations is undertaken each year before the winter season.

2 | Purpose of policy

- 2.1 To demonstrate compliance with the statutory duties of the Highway Authority by recording a managed, cost effective approach to providing winter maintenance service in the interest of public safety.
- 2.2 To provide a statutory defence against third party claims.
- 2.3 To inform and involve Members in the procedures associated with the winter maintenance service
- 2.4 To set out the aims and standards for the winter maintenance service, the facilities and resources available and guidance as to how the aims and standards are to be achieved.

3 | Procedures

3.1 Weather forecasts

3.1.1 Daily weather forecasts are received throughout the winter period and are specific to Flintshire County Council. The forecast is provided by MeteoGroup who are the largest private weather forecasting organisation in Europe. MeteoGroup utilise their experience at weather forecasting combined with information provided by Ice Prediction sensors situated at:

1. A55 at Brynford
2. A541 at Hendre

to predict the weather for a 36 hour period from 12 noon daily. The weather forecast is provided through a web based system - RoadCast and this forms the basis of the decision making process with regards to gritting actions taken in the interest of road safety over the succeeding 24 hours.

3.1.2 MeteoGroup provides forecast information in the in the following format:

- ▶ Projected road surface temperature graphs for two ice sensor sites within the County and others in the neighbouring Counties. These sites have been specifically chosen to provide information which is considered representative of the whole County.
- ▶ A site specific forecast for each of the ice sensor sites covering a 36-hour period from the time of issue (normally 1300 hrs).
- ▶ A 24-hour consultancy service, staff can talk to forecasters at the Weather Centre to expand on the general forecast.
- ▶ A 2-10 day forecast text indicating the outlook.
- ▶ A morning summary in text describing the events of the night before and a preliminary forecast covering the succeeding 24 hours.
- ▶ Alerts and forecast amendments electronically and by direct contact throughout the 24 hour period.

3.1.3 A cross boundary partnership approach is adopted throughout the North Wales Group of Authorities to ensure an effective and consistent service delivery.

3.1.4 A North Wales protocol for distributing daily weather forecasting information and proposed action details has been formally adopted. This has been coordinated through North Wales Trunk Road Agency (NWTRA) and has establishes improved communications between neighbouring Authorities, NWTRA and the North Wales Police. The actions of all the North Wales Authorities are recorded on the MeteoGroup web page for all partner authorities to view.

3.2 Priority of Roads

3.2.1 Roads within the Authority have been prioritized for treatment into priority 1, 2 and 3 routes.

3.2.2 **Priority 1 routes** are roads carrying substantial volumes of traffic having characteristics, which require protection from frost throughout the night. These routes form the spinal road network of the Authority and merit high priority to sustain the free flowing movement of traffic. They include:-

- ▶ Trunk Roads (48 kms)
- ▶ Class A Roads (151 kms)
- ▶ Class B and C Roads. (351kms)
- ▶ Strategic/ Important Bus Routes (8 bus services or more per hour)
- ▶ Main access roads to schools or establishments of higher education
- ▶ Town centre access and distributor roads through villages and housing estates
- ▶ Industrial Estate Roads (10.1Kms)

The 12 **Priority 1** precautionary gritting routes total **45%** of the total County highways network.

3.2.3 **Priority 2 routes** are formed from the Unclassified roads that form main distributor routes in both the urban and rural areas. They include:-

- ▶ Housing Estate Roads
- ▶ Access routes between smaller rural communities
- ▶ Remaining bus routes (4 service buses or more per hour)
- ▶ Known problems, including significant gradients, exposed areas and other topological factors
- ▶ Council maintained Car Parks

Priority 2 gritting routes will be treated upon satisfactory completion of the Priority 1 routes providing the criteria set out in 3.2.3 are met and adequate resources are available.

3.2.4 **Priority 3 routes** are all the remaining roads.

- 3.2.5.1** All priority 1 routes will be subject to precautionary gritting operations throughout the winter period at the discretion of the Highway Network Manager or his representative. The decision to undertake precautionary gritting actions is made daily at around 1300hrs between the period from 1 November to 30 April of the following year.
- 3.2.5.2** Priority 2 routes will only be treated in the event of icy conditions or a forecast of prolonged icy conditions, and following the satisfactory treatment of the priority 1 routes. The Duty Officer will make the decision whether or not to proceed to Priority 2 routes. The protocol for treatment during this period will be for a continued action on the priority 1 gritting routes as required with discretionary actions being taken on priority 2 routes in response to known or observed problem areas, or in relation to requests that have been assessed and justified by staff of Flintshire County Council. If temperatures remain below zero with prolonged icy conditions the winter maintenance teams will continue to undertake inspections and liaise closely with the Duty Officer. The level of actions will be dictated by the available resources and the weather forecast outlook. Bulk gritting vehicles and manual salting gangs will be deployed for this purpose. A discretionary decision to suspend further actions pending improving weather conditions may be taken.
- 3.2.5.3** Priority 3 routes will normally be treated dependent upon the availability of appropriate resources following the satisfactory attention to priority 1 and 2 routes and will be restricted to normal working hours.
- 3.2.6** During the onset of snow conditions and the satisfactory treatment of the priority 1 routes, all available plant and resources will be deployed to clear snow within the priority 2 routes. During such operations the gritting appliances will be directed by Flintshire County Council staff who will patrol their respective areas and liaise with the Duty Officer.
- 3.2.7** The Authority employs 38 No. agricultural contractors to clear the highway during periods of snow conditions. Each Contractor has a dedicated route which enables the Authority to clear the entire adopted highway network within the County. During snow conditions contractors may be hired at the discretion of the Duty Officer or his representative at the tendered rates. The schedule of the snow ploughing contractors is available to all winter maintenance staff to access as required.

3.2.8 Road Priority/ Treatment Matrix Treatment

Route type	Precautionary Salting	Salting	Times
Priority 1	At any time of the day	At any time of the day	When ice is predicted Priority 1 routes will be pre salted before the on-set of frost. Where severe conditions such as snow or ice persist resources will remain on priority 1 routes
Priority 2	None	At any time of the day	Priority 2 routes will only be treated if severe weather conditions persist and the priority 1 routes have been completed
Priority 3	None	At any time of the day	On satisfactory completion of Priority 1 and Priority 2 routes and if severe weather conditions persist these roads will be treated on a reactive basis dependant upon resources

3.3 De-icing Materials

3.3.1 Flintshire County Council procures its de-icing materials through a tendered process. The current tender is with Salt Union through the Yorkshire Purchasing Organisation and the life of the contract is 1st April 2014 to 31st March 2018.

3.3.2 6.3 mm nominal size rocksalt

This is the most commonly used material for general purpose gritting. It is spread at a prescribed rate of 10 – 15 grams per square metre for precautionary gritting. This rate can be increased to 40 grams per square metre when treating snow conditions. These rates are in accordance with the recommendations made in the Code of Practice for Highways Maintenance Management and the Trunk Road Maintenance Manual.

6.3 mm nominal size coated rocksalt (Safecote)

This material is standard rocksalt with an applied coating which enhances its performance to treat ice at lower temperatures (conventional rocksalt has a reduced efficiency at temperatures below -6 degrees centigrade). It has a greater adhesion to the applied surface and is effective over a longer period.

3.3.3 A total of 2200 tonnes of coated rocksalt (Safecote) is currently stored in a storage dome at Alltami Depot. A stock management service is operated in collaboration with the Salt Union, Winsford. The stock management system highlights the requirement for the delivery of rocksalt which is triggered by predetermined maximum and minimum intervention stock levels throughout the winter season. This service provides the following benefits:-

- ▶ Fresh stocks of rocksalt which retain maximum salinity values.
- ▶ Controlled levels of stock to meet storage availability and providing the ability to avoid storing large volumes of rocksalt outside of the winter period.
- ▶ Avoidance of a shortage of rocksalt during periods of high demand
- ▶ Regional proximity of supplier provides reduced delivery times.

3.3.4 Strategic Salt Stocks

Due to national shortages of rock salt in previous years and following advice from WLGA and Welsh Government an additional strategic salt stock of 7000 tonnes is to be stored under sheeting at the Greenfield Recycling Site at Greenfield.

3.3.5 Most of the road de-icing salt used in the UK is derived from a non-renewable source through mining a natural salt bed stretching from North West England to Ireland. The majority of rock salt is a 10mm grain size to British Standard BS3247. However, a trend is emerging in the UK where a number of Highway Authorities are moving toward a 6.3mm grain size. BS3247 requires the rock salt to contain no more than 4% moisture by weight and the soluble Sodium Chloride content to be not less than 90% of the dry salt mass.

Flintshire County Council introduced using 6.3mm grain size coated salt in 2005/2006. The proprietary name of this product is Safecote.

3.3.6 To effectively remove ice from the road surface the rock salt requires the action of traffic, which assists in the process of breaking down the salt granules into a saline solution. This rapidly melts the ice and prevents further ice forming for several hours.

3.3.7 Salt in solution freezes at a lower temperature than water and if spread before the onset of freezing conditions can be effective in preventing ice from forming on road surfaces at temperatures down to -7°C. However, salt is only effective if it can form a solution with the water on the road surface. If this water has already frozen before the salt is applied, the salt is much less effective in combating the slippery conditions. The generic term 'gritting' is often used to describe what is actually "presalting" or "precautionary salting", i.e. spreading salt before the onset of ice or frost formation.

3.3.8 The significant benefits of using Safecote Salt are:-

- ▶ more accurate spreading of the salt
- ▶ more salt remains on the road surface
- ▶ reduced wastage
- ▶ faster de-icing effect
- ▶ increased longevity on the road surface
- ▶ less Sodium Chloride used
- ▶ less corrosive to the gritter vehicles
- ▶ less corrosive to the highway infrastructure.
- ▶ cost benefit

3.3.9 Treatment Matrix

Carriageways - The Council operations will follow the standard guidance issued by Welsh Government as part of the Trunk Road Maintenance Management Policy and the Code of Practise for Highway Maintenance and any subsequent amendments. The de-icing material will continue to be Safecote.

Footways - Following successful trials of alternative de-icing materials heavily used footways in town centres, car parks and sheltered accommodation will be treated with a product called 'Safethaw'. This product is a brine solution mixed with agricultural by product similar to that used on the highway. 'Safethaw' is sprayed by using a knapsack sprayer or a self-propelled spray bar fitted to an All-Terrain Vehicle (ATV) or a pickup and will be applied in periods of heavy snow and prolonged icy conditions in accordance with the risk assessment for each element.

3.4 Operational Practices

- 3.4.1** The winter period is defined as between 1st October – 30th April. Streetscene drivers are contracted to deliver the service and standby payments will apply from November to March.
- 3.4.2** Forecasts are received at 06.00hrs, 12.00hrs and 18.00hrs every day between the period 1st October to 30th April by staff at the operational depot or by Council representatives on call at weekends.
- 3.4.3** A decision on appropriate action will be made by the Highway Network Manager or his representative and the supervisory staff and standby workforce informed accordingly. Standby crews are available to respond to forecast changes and subsequent actions/ decisions outside of normal working hours.

- 3.4.4** Priority 1 routes will be treated before the formation of ice. The average route treatment time of 3.0 hours will be taken into account in making the decision to ensure that all pre-cautionary priority1 routes are completed on time. Any changes to the pre-determined actions will be verified with the Highway Network Manager or his representative before notification to the workforce. The situation may be varied by weather conditions such as heavy rain immediately before a frost, which may restrict the time to carry out the work.
- 3.4.5** Depending on the forecast, further actions may be required to support the precautionary gritting decisions. Whilst every effort will be made to plan this action it may be considered necessary to obtain updated forecast information from the forecaster, MeteoGroup prior to a decision being made. The weather forecast update will be carried out by the Highway Network Manager or his representative at any time of the day or night, to ensure that appropriate actions are carried out in the interest of public safety and to provide a cost efficient service.
- 3.4.6** In the event of a forecast of snow the priority 1 routes will be pre-treated prior to the event. Where this is not possible, for example when it starts as rain and turns to snow, a decision to delay action until the rain stops in order to prevent the salt from being washed away will be taken. This situation can be even more difficult if it occurs during the rush hour as traffic congestion impedes the progress of the gritting vehicle.
- 3.4.7** Following a fall of snow with significant accumulations clearance work will continue around the clock until all priority 1 roads are clear. When the priority 1 roads are cleared to a standard which safeguards the safe passage of vehicular traffic, all available resources will be dedicated to attend to priority 2 roads.
- 3.4.8** Priority 3 routes will receive attention when resources are available and after all priority 1 and 2 roads have received appropriate attention.
- 3.4.9** During periods of snowfall all gritting vehicles will be equipped with snow or slush ploughs depending on the type of snow being cleared. Snow ploughing contractors will be deployed at the discretion of the Highway Network Manager or his representative.

3.5 Partnership Working

3.5.1 Liaison and cross boundary operational practices are established between Flintshire County Council and its neighbouring Authorities and North & Mid Wales Trunk Road Agency, with the intention of maintaining a consistency and continuity of winter services throughout the region.

For this purpose the following cross boundary precautionary gritting arrangements are in place:-

Wrexham County Borough Council will treat the following roads for **Flintshire County Council**:-

- ▶ B5102 from County boundary Llay to A541 Mold Road.(Hollybush)

Flintshire County Council will treat the following roads for **Wrexham County Borough Council**:

- ▶ B5430 Bwlchgwyn from County Boundary to Four Crosses
- ▶ B5373 County Boundary to Miners Road (Sharps)

Flintshire County Council will treat the following roads for **Denbighshire County Council**:

- ▶ Section of road from A5151 to Gwaenysgor Cross Roads

Denbighshire County Council will treat the following roads for **Flintshire County Council**:

- ▶ Section of the A494 from County Boundary, Cadole to Cadole junction

3.5.2 It is the responsibility of each individual Highway Authority to ensure adequate treatment of the roads under their jurisdiction. A protocol of daily communications between neighbouring authorities / agencies has therefore been established to ensure continuity of actions.

3.6 Footways and Cycleways

3.6.1 Footways, pedestrian areas or cycleways are not included in precautionary salting operations. Nevertheless, there will be a certain amount of overspill of salt onto footways and cycleways when precautionary salting is being carried out on adjacent carriageways.

3.6.2 Resources will be deployed to treat footways once snow has settled or during periods of prolonged freezing conditions on a priority basis at locations including:

- ▶ Town centre footways and footways in the vicinity of shopping areas
- ▶ Footways in the vicinity of civic buildings
- ▶ Public highway in the vicinity of hospitals
- ▶ Public highway in the vicinity of residential homes / old age pensioners flats
- ▶ Public highway in the vicinity of day care centres
- ▶ Public highway in the vicinity of Schools (during term times only)
- ▶ Footbridges
- ▶ Bus Stops

If any reports of icy footways are received for locations not included in the above criteria the footway will be inspected to assess whether treatment is appropriate dependant upon available resources.

3.7 Salt Bins and Salt Heaps

3.7.1 Salt bins are located in areas for the use of pedestrians and motorists to treat the public highway only. The decision for the distribution of salt bins is that of the Highway Network Manager or his representative in the interest of financial management.

3.7.2 Salt bin locations will be individually assessed against criteria which include:-

- ▶ Non precautionary gritting routes
- ▶ Location within bounds of public highway
- ▶ Benefit to road safety, i.e. areas with steep inclines
- ▶ Traffic volumes
- ▶ Proximity to schools and locations of public interest.

A Pro Forma to aid in the assessment of suitable salt bin locations has been created and will be distributed to staff as required.

3.7.3 All salt bins will be filled at the start of the winter season and refilled once again in January, if necessary. Similarly, salt heaps will be provided before the winter season and replenished once during the winter months.

3.7.4 Salt heaps in the rural areas will also be subjected to the same assessment criteria as the salt bins.

3.7.5 Streetscene Services will provide salt bins and rock salt within Council establishments on request at cost to the relevant Department. Every effort is made to establish and meet the requirements of each Department prior to the onset of the winter season. The availability of resources will dictate the priority allocated to provide this service during the winter season.

- 3.7.6** Provision is available for Community Councils to purchase salt bins and rock salt from Streetscene Services with the intention of supplementing the Authority's winter maintenance services to the benefit of the general public. Salt bins purchased by the Community Council will be distinguishable from Streetscene salt bins and will be maintainable by the Community Council. Location of the salt bin on the public highway will require prior approval of the Highway Authority.

3.8 Resources

- 3.8.1** The workforce involved will all be part of Streetscene Services and all drivers will be trained and assessed. Additional resources can be sought from other sections within the service if required.
- 3.8.2** The Council's winter maintenance fleet consists of 12 frontline gritting vehicles and 2 spare gritting vehicles, these are supported by 3 trailer type gritters and four small demountable gritter bodies. These will be stored at Alltami Depot.
- 3.8.3** The four small demountable gritters are available for car parks and school access roads. These will fit on the back of the pick-up vehicles.
- 3.8.4** Welsh Government and WLGA have suggested that all Authority's in Wales hold a strategic salt stock to ensure resilience in the event of further winters of extreme weather and national shortages of rock salt. For this coming season Flintshire will hold an additional residual salt stock of 7000 tonnes covered and sheeted at the Greenfield green waste recycling site.
- 3.8.5** The suggested minimum stock levels is based on the last six year average usage figure and with a multiplier of 150%. The tonnage of salt held in Flintshire for 2015/2016 will be 9,000 tonnes.

3.9 Standards Monitoring

- 3.9.1** Flintshire County Councils service delivery is benchmarked against National performance statistics to ensure that a comparative cost effective service delivery is being maintained.
- 3.9.2** Regional and National meetings of operational staff and support service providers creates the opportunity for continual assessment of operational practices, standards and resources.

3.10 Vehicle Tracking

- 3.10.1** Flintshire County Council's fleet of 14 bulk gritting vehicles have all been fitted with an innovative GPS tracking system. The tracking system is a monitoring device that interfaces with the control systems on the vehicles so not only do we know where the vehicle has been, but exactly what it was doing and, because it is web based, the information can be accessed from any source. The tracking system operates in real time and therefore it is easy to find out exactly where a vehicle is and to check its activity. This gives the Managers confidence to ensure that any operational decisions that they make are based on accurate live information.

3.10.2 In these increasingly litigious times it is vital that Managers are able to provide positive supporting evidence in the event of a claim. The GPS tracking system will monitor how much salt was spread on what roads, at what rate and at what time. The system is able to provide a record of all control box functions, route time, salt sensor data, spread rate/width and vehicle speed.

3.10.3 The tracking system has been provided by Trackyou.

3.11 Extreme Weather Protocol

3.11.1 On receipt of a severe weather warning an operational control room will be established in Alltami and manned by staff from Streetscene Services who will act as a dedicated point of contact for the Contact Centre staff. The staff within the operational control room will have direct contact with Streetscene Coordinators/Supervisors who will be on-site to investigate complaints and mobilize dedicated gritting vehicles under their direct control.

3.11.2 The operational control room will be responsible for directing all operations and act as a liaison contact to the press office through which all press releases will be made.

3.12 Community Engagement

3.12.1 Flintshire County Council is committed as part of the “Big Society” agenda to provide assistance in the form of small quantities of rock salt and tools to community and local groups to enable them to assist with the removal of snow and ice off the footpath within the urban areas.

3.12.2 The Highway Network Manager will write annually, prior to the winter, to all Community Councils and known action groups for contact details of interested parties and for their requirements.

3.12.3 Contact details provided by these groups will receive daily weather forecasts and details of the proposed daily winter maintenance action, by e-mail, direct from the forecast provider.

4 | Risk Assessment

4.1 The winter maintenance service has undertaken various risk assessments on the provision of road surface treatments as follows:

- ▶ Precautionary Treatment on Priority 1 Roads
- ▶ Salting on Priority 2 Roads
- ▶ Salting on Priority 3 Roads
- ▶ Salting Town Centre Footways
- ▶ Salting footways with low footfall
- ▶ Salting Council maintained Car Parks

5 | Background Documents

The additional documents outlined below provided further detail and background information relating to the contents of this policy:

- ▶ Highways Act 1980.
- ▶ Well Maintained Highways - Code of Practice for Highway Maintenance July 2005
- ▶ Quarmby Report – July 2010
- ▶ Trunk Road Maintenance Manual
- ▶ Welsh Government Advice Documents
- ▶ WLGA Advice Documents