

NORTH SOMERSET COUNCIL DECISION

DECISION OF: COUNCILLOR JAMES TONKIN. THE EXECUTIVE MEMBER FOR PLANNING, BUILDING CONTROL, HIGHWAYS AND TRANSPORT



WITH ADVICE FROM: THE DIRECTOR OF DEVELOPMENT AND ENVIRONMENT.

DECISION NO: 19/20 DE 210

SUBJECT: WINTER SERVICE POLICY

KEY DECISION: YES

REASON: the decision is significant in terms of its effects on communities living or working in an area comprising two or more wards in the area of the Local Authority

BACKGROUND:

The statutory basis for Winter Service varies in England and Wales is Section 41 (1A) of The Highways Act 1980 was modified on 31st October 2003, by Section 111 of the Railways and Transport Act 2003. The first part of Section 41 now reads:

"a) The authority who are for the time being the highway authority for a highway maintainable at the public expense are under a duty, subject to subsections (2) and (3) below, to maintain the highway.

b) (1) In particular, a highway authority is under a duty to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice."

This is not an absolute duty, given the qualification of "reasonable practicability" but it does effectively overturn previous legal precedence.

Through the development and adoption of the winter service policy identified in the winter manual (appendix A), there is clear guidance on how the council will meet its legal duties. The manual is updated annually to ensure the approach adopted remains appropriate and proportionate to mitigate against ice and snow events.

DECISION:

To adopt the winter service manual (appendix A) for the winter period 2019/2020

REASONS:

As detailed in background information

OPTIONS CONSIDERED:

N/A

FINANCIAL IMPLICATIONS:

There are no financial implications associated with this decision.

LEGAL POWERS AND IMPLICATIONS

See background

CLIMATE CHANGE AND ENVIRONMENTAL IMPLICATIONS

The de-icer used in North Somerset is rock salt. All de-icing products present some risk to the environment however, through ensuring compliance with the latest guidance the amount of salt we used is kept to an absolute minimum.

CONSULTATION

This policy has been brought together consulting with various NSC officers

RISK MANAGEMENT

Having a formal policy in place provides a robust position for the Council to operate from and reduces potential for challenge. It is recommended that this policy be reviewed on an annual basis to ensure that it reflects any changes to working practices so that it is fit for purpose.

EQUALITY IMPLICATIONS

Have you undertaken an Equality Impact Assessment? ~~Yes~~/ No

CORPORATE IMPLICATIONS

There are no cross directorate implications, however, providing greater clarity and direction will act as an enabler to increased customer satisfaction, and contributes to our One Council approach supporting the way we want to work in the future.

APPENDICES


Appendix A – Winter Manual

BACKGROUND PAPERS

None

SIGNATORIES:

DECISION MAKER(S):

Signed:  Executive Member for Planning, Building Control, Highways and Transport

Date: 12th Nov 2019

WITH ADVICE FROM:

Signed: Mayshamah Director of Development and Environment

Date: 6 Nov '19

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Section 1:

1.1 Head Office

North Somerset Council
Development & Environment.
Weston-super-Mare
North Somerset
BS23 1UJ

Telephone: 01934 888 888

Chief Executive Officer:	Jo Walker
Director of Development and Environment:	Lucy Shomali

1.2 Development and Environment

North Somerset Council
Highway Operations
Castlewood
Tickenham Road
Clevedon
BS23 6FW

Telephone: 01934 888 802

Assistant Director Neighbourhood Management:	Gemma Dando
Highway Operations and Contracts Manager:	Darren Coffin-Smith
Highway Operations Manager:	Phil Bush

1.3 Client Responsibilities

The responsibility of the client covers the following areas:

- Policy
- Decision making
- Provision of Forecasts
- Salt procurement
- Management of Salt Stock
- Communications

1.4 Contractor Responsibilities

The responsibility of the contractor covers the following areas:

- All works associated with precautionary salting of the highway and the removal of ice and snow from the highway including carriageway and footways.
- Provision of all labour, vehicles, plant, fuel, material storage, facilities and maintenance facilities
- Provision of on call facility
- Record keeping

1.5 Resilience

The winter Service period generally covers a 26-week period. It is anticipated that the season starts on the Friday prior to 1st November but the period can be brought forward and extended as weather forecasts dictate. The Highway Operations Manager will advise of the start and finish date for winter service.

A reduced length winter resilience network should be agreed to meet the recommendations identified in 'well managed infrastructure'. This is designed to ensure that the higher priority network remains open in the event of national salt shortages. Previous work completed has identified that we only treat the critical routes as general policy and therefore any further reduction are difficult to justify and would not significantly impact on salt usage.

Resilience Standard – see appendix G for minimum salt stocks see table
Minimum Salt Stocks

1 November	=	2298 tonnes*
1 November to 1 March	=	1281 tonnes
30 March to 31 October	=	888 tonnes**

*Includes approx. 300 tonnes of salt grit mix for grit bins stored outside under sheets

**The closing stock will be closely monitored by the Highway Operations Manager and may be run down depending on weather conditions. Due to North Somerset's geographical position and climate we typically experience a shorter winter than other areas of the country and therefore this monitoring process is a risk-based departure from the guidance contained within the code of practice.

1.6 Duty Engineer

Daily management of the winter service delivery is the responsibility of the 'On-call' Duty Engineer (hereinafter "Duty Engineer"), who will deal with all winter maintenance matters both during and outside normal office hours. During longer spells of adverse weather additional resource will be allocated to guard against excessive working hours.

During normal working hours the Duty Engineer will decide on the appropriate course of action, and this information will be made available to the Duty Area Officer, Contractor and adjacent Authorities as soon as possible.

The Duty Engineer and Duty Officer will be as detailed in the Duty Rota, Appendix B.

Notes

- (a) Each duty period listed in Appendix B is from 08:30 hours Friday for one week
- (b) A separate detailed sheet of daily changes in duty personnel will be issued as required.

- (c) The Duty Engineer standing down is responsible for ensuring all relevant reports and information is passed on to the incoming Engineer prior to the hand over time.

1.7 Duty Area Officer

The Duty Area Officer shall be the initial contact for all highway emergency and winter maintenance situations out of office hours and shall ensure the Duty Engineer is immediately advised of any changes in weather or incidents that are relevant to winter service. The Duty Engineer is the first point of contact for the forecast provider and will consult with the Duty Area Officer should a revised forecast be issued. The Duty Engineer will issue instructions to the Duty Area Officer who will then arrange for the situation to be dealt with as instructed and ensure the necessary resources are deployed by the Contractor.

The Duty Engineer must be kept informed of all any potentially serious weather related incidents and consulted regarding all weather reports.

1.8 Adjoining Authorities and Other Contacts

Please note the following numbers are NOT for public use.

Office	Contact	Office telephone number	Home	Mobile
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Section 2

2.1 General

2.1.1 The statutory basis for Winter Service varies in England and Wales is Section 41 (1A) of the Highways Act 1980 was modified on 31st October 2003, by Section 111 of the Railways and Transport Act 2003. The first part of Section 41 now reads:

"a) The authority who are for the time being the highway authority for a highway maintainable at the public expense are under a duty, subject to subsections (2) and (3) below, to maintain the highway.

b) (1) In particular, a highway authority is under a duty to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice."

This is not an absolute duty, given the qualification of "reasonable practicability" but it does effectively overturn previous legal precedence.

In addition, the Traffic Management Act 2004 placed a network management duty on all local traffic authorities in England. It requires authorities to do all that is reasonably practicable to manage the network effectively to keep traffic moving. In meeting the duty, authorities should establish contingency plans for dealing promptly and effectively with unplanned events, such as unforeseen weather conditions, as far as is reasonably practicable.

Given the scale of financial and other resources involved in delivering the Winter Service it is not reasonable either to:

- provide the service on all parts of the Network;
- ensure running surfaces are kept free of ice or snow at all times, even on the treated parts of the network

The overall aim of the Winter Service Policy is to maintain (within the resources available) adopted public highways in a condition such that the public can use them in safety with reasonable care. Because of the limited resources and finances available the Council's plans are based on achieving this objective in a manner that reflects the relative importance of the various roads and the prevailing weather conditions. In doing so North Somerset considers that it complies with the requirements of both of the above acts.

Well Maintained Highways, the code of practice provides detailed guidance for delivering an effective and efficient winter service. This document has been replaced by Well Managed Infrastructure and Local Authorities have until October 2018 to adopt this new code of practice. For winter service the revised code relies on guidance provided by the National Winter Service Research Group. North Somerset Council has undertaken considerable work to meet the revised guidance within this code of practice, such as amending spread rates, salt stock control and training.

2.1.2 The Council has arranged to receive weather forecasts for the period 1 October to 30 April; this service includes warnings of ice, frost and snowfall conditions. On the basis of these

forecasts, warnings and local knowledge the Duty Engineer will initiate the appropriate daily winter service action.

- 2.1.3 In heavy snowfall conditions all normal work is stopped, and all available staff will be deployed on winter service activities. Other available resources will be utilised as required.

2.2 Frost, Ice and Light Snowfall

- 2.2.1 On receipt of the daily forecast the Duty Engineer will decide as to whether and when to carry out precautionary salting. This will be communicated immediately to the Duty Area Officer and Maintenance Contractor and then to adjacent Authorities via the message board linked to the Forecasters website.
- 2.2.2 The Council's policy on pre-salting is that the priority for precautionary salting is as follows:-
- (i) Principal Roads ('A' Roads) and Major routes connecting centres of population and important commuter routes.
 - (ii) Other important access routes to; emergency services recycling centres and the coroner's office etc. (should snow accumulations be forecast)
 - (iii) Footways are not routinely salted, but busy pedestrian footways that are adopted highway will be assessed for treatment when a forecast predicts prolonged sub-zero temperatures with persistent frost and/or sub-zero surface temperatures which are expected to continue beyond the rush hour period.
 - (iv) North Somerset has cycleway network of 75 km approx. It is not practical to treat these due to the level of resource required. In most instances there is a suitable alternative route along a carriageway that is treated, and these alternative routes are recommended to be used in times of ice or snow. This message is clearly communicated prior to the winter season.
- 2.2.3 As the Highway Authority, North Somerset Council has a statutory duty to prevent or inhibit ice forming on the highway network as far as reasonably practicable. However, it must be noted that it is not always possible to carry out precautionary salting to all these routes due to driver illness, vehicle breakdowns, or short or no notice of frost/ice conditions. Sustained periods of severe weather also impact on the options available as resources are directed to keep major routes open.
- 2.2.4 There are over 500 grits bins located on the highway network. These are paid for and therefore owned by the Town and Parish Councils. North Somerset Council will endeavour to keep these filled, but this is subject to resources being available. It is considered that this number of grit bins is more than adequate and requests for additional bins will need to be supported with strong evidence of their need. Due to the large number of grit bins utilised throughout the authority the refilling of them on mass does take several weeks. It may not be possible therefore to meet demand during periods of significant or prolonged snowfall. Volunteer Snow Wardens (see 2.3.6) are able to check their local community grit bins and report back to NSC on their condition and grit levels periodically, or indeed during periods of snowfall when the grit will have been actively used.

2.3 Heavy Snowfall and Snow Clearance

2.3.1 The Council's policy on snow clearance is that the priority for snow clearance is: -

- (i.) Principal Roads ('A' Roads);
- (ii.) Major routes connecting centres of population and major commuter routes.
- (iii.) Other important routes access to recycling centres, coroner's office and emergency service establishments
- (iv.) Busy footways.

No other routes will be cleared outside normal working hours except in emergency circumstances i.e. for Police, Fire or Ambulance vehicles. It must also be noted that some roads with steep gradients will be closed until laying snow has cleared.

During normal working hours the following additional situations will be treated if or when the above roads are clear (using normal maintenance gangs not engaged on priority works) as follows: -

- (v) Estate distributor routes not covered by priorities above.
- (vi) Footpaths and hills where pedestrians can be at risk when walking on the carriageway.
- (vii) Major shopping areas.

Priorities (v) to (vii) will be treated with either sand or grit.

2.3.2 In heavy snowfall conditions, the highway maintenance contractor's workforce may be augmented by selected agricultural contractors' plant and labour where this can be used to advantage and with adequate supervision. Contact details are given on page 7.

2.3.3 Whilst in such conditions every effort will be made to work within the above priorities, inevitably operational requirements and limitations will result in local variations and the co-ordination of efforts is vital. In such circumstances the Duty Engineer will act as co-ordinator.

2.3.4 Additionally, in heavy snowfall conditions there will be specific farming priorities related to such problems as milk collection and supplies of animal feed these will be resolved as requested and resources become available.

2.3.5 The decision process is further detailed in the 'Treatment Matrices' contained in appendices E and F at the end of this document. These are designed to guide the decision makers; however, there will be times when the decision does not directly follow the matrix. These occurrences will be detailed and recorded on the decision sheet explaining what factors were considered.

2.3.6 The Snow Warden programme – a joint partnership between North Somerset Council and Community Resilience North Somerset – began in 2013 and to date has over 100 trained, equipped and insured volunteers across the district. The Area Officer Manager activates the scheme via email.

Snow Wardens are able to:

- Identify, clear and grit local priority routes
- Monitor local community grit bins for condition and contents and feeding back as necessary

Section 3

3 Pre-Winter Preparations

3.1 Salt

- 3.1.1 Replenishment of stocks during the winter can prove difficult and stocks of salt will be replenished prior to the start of the winter season and maintained at a level specified in 1.5
- 3.1.2 The contract for the supply of salt is with Compass Minerals and is the responsibility North Somerset Council to order. The monitoring and ordering are carried out by the Highway Operations Team
- 3.1.3 North Somerset Council uses 6mm dry salt. Other options have been considered but capital outlay for pre-wetted salt will have a very long payback period due to the relatively low quantities of salt typically used in North Somerset.
- 3.1.4 Salt is stored in a purpose-built barn at Sandford which has a capacity of 2000 tonnes. Salt moisture and grading testing is carried out by the NSC lab and is completed at the commencement of the winter season, and whenever new stock deliveries are received or each month. This salt management allows NSC to achieve optimum salt conditions.

3.2 Winter Service Plans

- 3.2.1 This plan to deal with snow clearing and gritting/salting of roads is prepared and reviewed annually. This plan shall include items under the following headlines: -
 - (i) Priority routes for salting, with maps*
 - (ii) Priority routes for snow clearance, with maps*
 - (iii) Busy footways.
 - (iv) Freezing rain prolonged frost risk assessments review period inspections.

*The above to be in accordance with Council policy as detailed in Section 2 of this document.

- (v) Staff lists showing duty officers involved in pre-salting/snow clearance duties, the duty rota and appropriate telephone numbers. **

** These details are held within Highways and Transport and the CCTV Control Room.

3.3 Vehicles and Plant

- 3.3.1 The Council's Highways Maintenance contractor will arrange for the inspection and annual overhaul of all vehicles/snow ploughs ready for calibration trials in October.
- 3.3.2 All vehicles, ploughs, etc shall be returned to the contractors' depot at Hill Road Sandford two weeks before the commencement of the winter period.
- 3.3.3 Every vehicle shall be subject to an annual test and calibration, additional tests when considered necessary can be arranged i.e. if spreading mechanism is damaged or salt flow/usage is suspected to be out of specification.
- 3.3.4 Under the supervision of authority officers the Highway Maintenance Contractor's snow ploughs will be checked for fitting and any deficiencies/defects shall be remedied before the end of October.

All ploughs fitted to the Highways Maintenance Contractor's vehicles shall have their fitting and hydraulics checked. The plough shall then be placed in a convenient position and at the correct height for easy fitting, clearly marked with number of the vehicle to which it is to be fitted.

Section 4

4.0 Public Communications

- 4.1 In winter conditions well-ordered communications are vital if timely and accurate information is to be disseminated to the travelling public.
- 4.2 All communication will be via the Duty Engineer using SnowCo-OrdinationGroup@n-somerset.gov.uk which will ensure the Press Office and Senior Managers are apprised of the condition of the highway network.
- 4.3 Where priority routes (see Appendix A) are blocked or passage is restricted or dangerous or where it is thought that a public warning of conditions on a particular road would be of assistance, the **POLICE FORCE CONTROL ROOM (01275 818181) MUST BE INFORMED by the Duty Engineer.** The police will then request the media to make the necessary announcements having taken all factors into consideration.
- 4.4 **IT SHOULD BE NOTED THAT THE POLICE MUST ALSO BE INFORMED WHEN A ROUTE NOTIFIED UNDER SECTION 4.3 ABOVE HAS BEEN CLEARED OR RENDERED SAFE.** (This will enable the media announcements to be more accurate, of value and respected by the public).
- 4.5 Any request for a press statement for newspapers, radio and television is to be directed to the Corporate Press Office (01934 634996)

Section 5

5 Meteorological Forecasts

5.1 Outline

The procedure for winter maintenance action is based on the receipt of frost, ice or snow warnings.

5.2 Procedure

Three levels of meteorological information are issued: -

(i) Daily Weather Forecasts

These are forecasts for the next 36 hours and are received daily at the Highways and Transport Office, Clevedon (or obtained by the Duty Engineer) at approximately 1300 hours.

These forecasts are timed to allow precautionary arrangements to be made with the Maintenance contractor before the end of the working day.

The designated Duty Engineer shall determine the appropriate action based on the forecast, additional information from the weather stations within North Somerset area and local knowledge.

(ii) Winter Service Warnings

These warnings are sent out by the forecast provider at any time during the day or night to warn of potentially hazardous conditions and changes to the issued forecast.

Outside office hours road danger warnings will be received by the Duty Engineer and distributed in the sequence shown for the weekend weather forecast.

(iii) 2 – 10 Day Forecasts

These will be provided on a daily basis from 1 October to 30 April and will give an indication of the general outlook for the period.

5.3 Notes on Conditions Leading to Icy Roads

According to the Transport Research Laboratory road icing depends more on the state of the road i.e. the "degree of wetness", than on actual temperatures. However, the circumstances in which roads become icy may be classified into the following broad categories in order of frequency of occurrence: -

(a) The Freezing of Wet Road Surfaces

In most cases the road will have become wet because of rain which fell when the air temperature was above freezing point; the road may also become wet by a heavy

deposit of dew or from a wet fog, by the melting of hoar frost which may have formed during the previous night, or by the melting of snow. A subsequent fall in temperature of the road surface, usually due to radiation of heat to a clear night sky, causes the water film remaining on the surface to freeze. The difference between the rates of fall of temperature for various road materials due to differences in their thermal properties are small and significant differences in the ice formation on various surfaces arises only in marginal cases, when the screen minimum lies between -1° and $+1^{\circ}\text{C}$.

(b) A Heavy Deposit of Hoar Frost

Sometimes this is preceded by a deposit of dew. With little traffic the surface is not very slippery, but heavy traffic, causing the partial melting and packing of the ice crystals eventually produces a treacherous surface if the temperature is near to the freezing point.

(c) The Freezing of Deposited Moisture on a Cold Dry Road Surface

When there is a sudden change in the weather, from a relatively long period with temperature below the freezing point, to one where the temperature is at or a little above the freezing point and the humidity is high, then the water, which condenses on the cold road surface, may freeze. This condition is most severe if the onset of the warmer conditions is accompanied by drizzle. It does not occur frequently, about once every two winters on the average, but it leads to treacherous road conditions because freezing takes place from below and the ice layer will have lubricating film of water on its surface.

(d) Glazed Frost caused by the Freezing of Super-Cooled Droplets on Impact with the Cold Road Surface

This is an infrequent occurrence in the British Isles and is referred to as 'freezing rain'.

5.3.1 Warning of Snow.

These are warnings of falls of snow that are likely to require recipients to consider whether arrangements should be made for snow clearance, gritting or salting.

For the purpose of this service warning will refer to slight, moderate or heavy falls of snow as appropriate, these terms being defined as: -

Slight: Undisturbed accumulations of snow reaching a depth of less than 25mm.

Moderate: 25 to 100mm.

Heavy: Over 100mm.

Note Experience has shown that even slight accumulations of snow can lead to treacherous icy surfaces under the action of traffic when the temperature of the surface is below the freezing point. Warnings of slight falls will therefore be issued unless it is confidently expected that the temperature will remain above freezing.

Section 6

6 Action in Adverse Conditions

6.1 Outline

6.1.1 These notes outline the use of rock salt (and grit where appropriate) for winter maintenance in accordance with the Council's policy.

6.1.2 The action of salt is to lower the freezing point of water and prevent or delay the formation of ice, stop snow adhering to the road surface and melt both ice and snow. This melting will take place at temperatures as low as -21°C but below -10°C the quantities of salt required increase to a point that is environmentally and economically undesirable. However, the road surface temperature during periods of ice and snow seldom falls below -3°C so the performance of salt is adequate.

6.2 Precautionary Salting

Time for salt to act

6.2.1 Precautionary salting is designed to prevent the formation of ice and to prevent snow adhering to the road surface, thereby easing ploughing.

6.2.2 The need for precautionary salting should be based on the assessment of the "daily weather forecast" any "road danger warnings" issued and local knowledge and information. Due allowance should be made for any salt known to be left on the road network from previous salting operations.

6.2.3 North Somerset considers that it meets the requirement for "Good" The recommended spread rates provided in Appendix H of this document relate to spreaders that provide 'Good' or 'Fair' coverage and 'Medium Traffic' situations. In other situations, and when other relevant factors dictate, these rates should be modified in accordance with the guidance provided. As a result of the inevitable variabilities in coverage and losses that occur, even when using spreaders providing 'Good' or 'Fair' coverage, it is recommended that authorities do not utilise lower precautionary spread rates than the lowest rates provided in this table i.e. 8g/m² for dry salt.

6.2.4 The amount of water present on the road surface at the time of treatment and expected afterwards will have a significant effect on appropriate precautionary salt spread rates as, along with the action of traffic, surface water reduces brine concentration and increases 'wash-off' after spreading.

Effective highway drainage is important and, if a road surface is well drained and has been trafficked for several hours after rainfall, relatively little water should be present on the road surface.

Normal dispersion rates of salt following spreading are accounted for in the recommended spread rates. However, it is important that the timing of precautionary salting operations is carefully considered so that, when practicable, spreading takes place when there is the minimum amount of water on the network, as this will maximise the effectiveness of the treatment.

The amount of salt required to prevent ice from forming on road surfaces exhibiting a water film thickness of greater than 0.1mm is very high. The recommended spread rates provided in this section reflect the practicalities of delivering an effective winter service and are only intended for use on dry, damp or wet roads, where the water film thickness is up to a maximum of 0.1mm.

Precipitation after a treatment takes place will increase the rate of salt dispersal and reduce the brine concentration. Depending upon the amount of precipitation and its timing, higher treatment rates or additional treatments may therefore be required.

6.3 Treatment of Ice Already Formed

6.3.1 Where ice has already formed it is essential to carry out salting to ensure a rapid melting of ice and remove the hazard as soon as practicable.

6.3.2 To carry out this rapid melting of ice, rates of salt spread of up to 40 gms/sq.m. should be used depending on the thickness of ice expected/known to exist and how far the temperature has fallen below zero.

6.4 Treatment of Snow

6.4.1 Before snow starts to fall salt should be spread at a rate of between 20 & 40 gms/sq.m to prevent the snow compacting onto the road surface (see treatment matrix D). Ploughing is most effective when started as soon as possible for the conditions and where required and is continuous or sufficient to prevent build-up of snow. Ploughing should be as near as possible to the road surface to remove as much slush, snow and compacted snow as possible. The rate of spread of 20 gms/sq.m. associated with ploughing is generally sufficient to stop the snow compacting onto the road surface and equally important it extends the operational time of vehicle ploughs thereby reducing snow build-up when vehicles are returning to depot for re-loading.

6.4.2 Ploughing may not be possible on central urban traffic routes if snowfall occurs during week-day or Saturday office/shopping hours and in these circumstances, if the snowfall does not exceed about 40 mm it is normally possible to melt the fresh snow by the application of up to 40 gms/sq.m. of salt on routes .

6.4.3 Salt should not be used without abrasives to anything other than a thin film of ice or compacted snow (matrix treatment table E refers). Applying salt alone to compacted snow can produce more dangerously slippery conditions if a weak brine film is formed on top of the ice/snow layer.

Appendices

APPENDICES

Appendix A

Priority Salting Routes

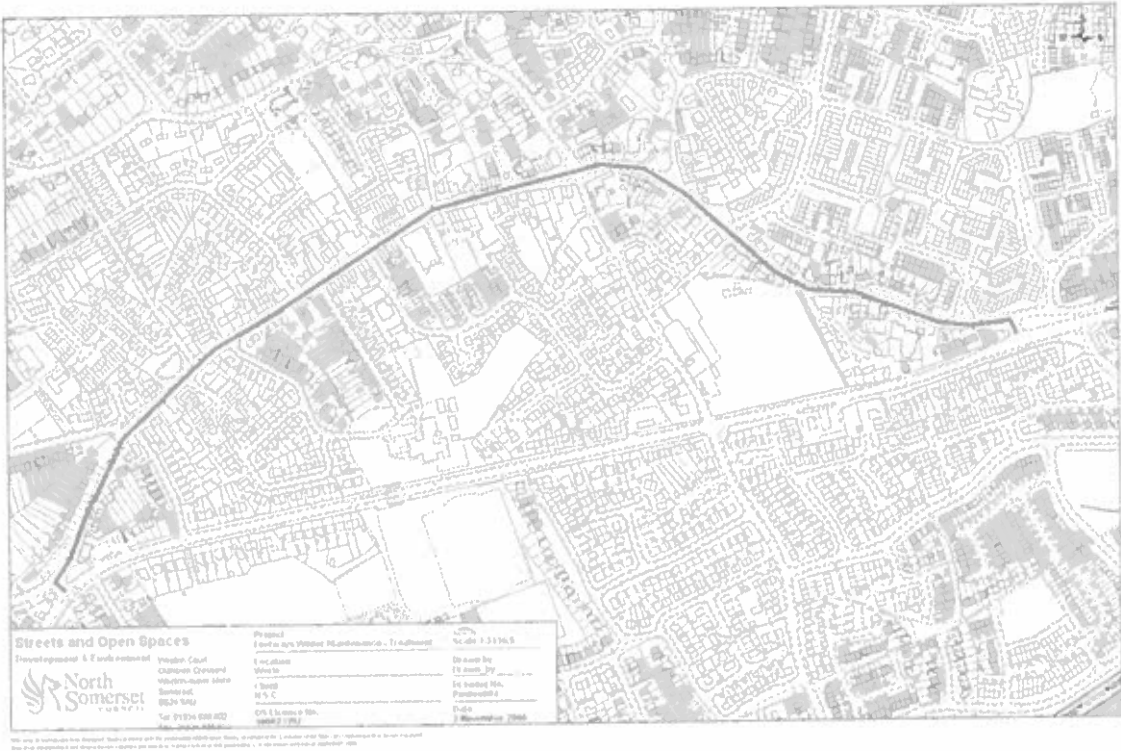
During heavy snowfall conditions the priority routes for snow ploughing will be:-

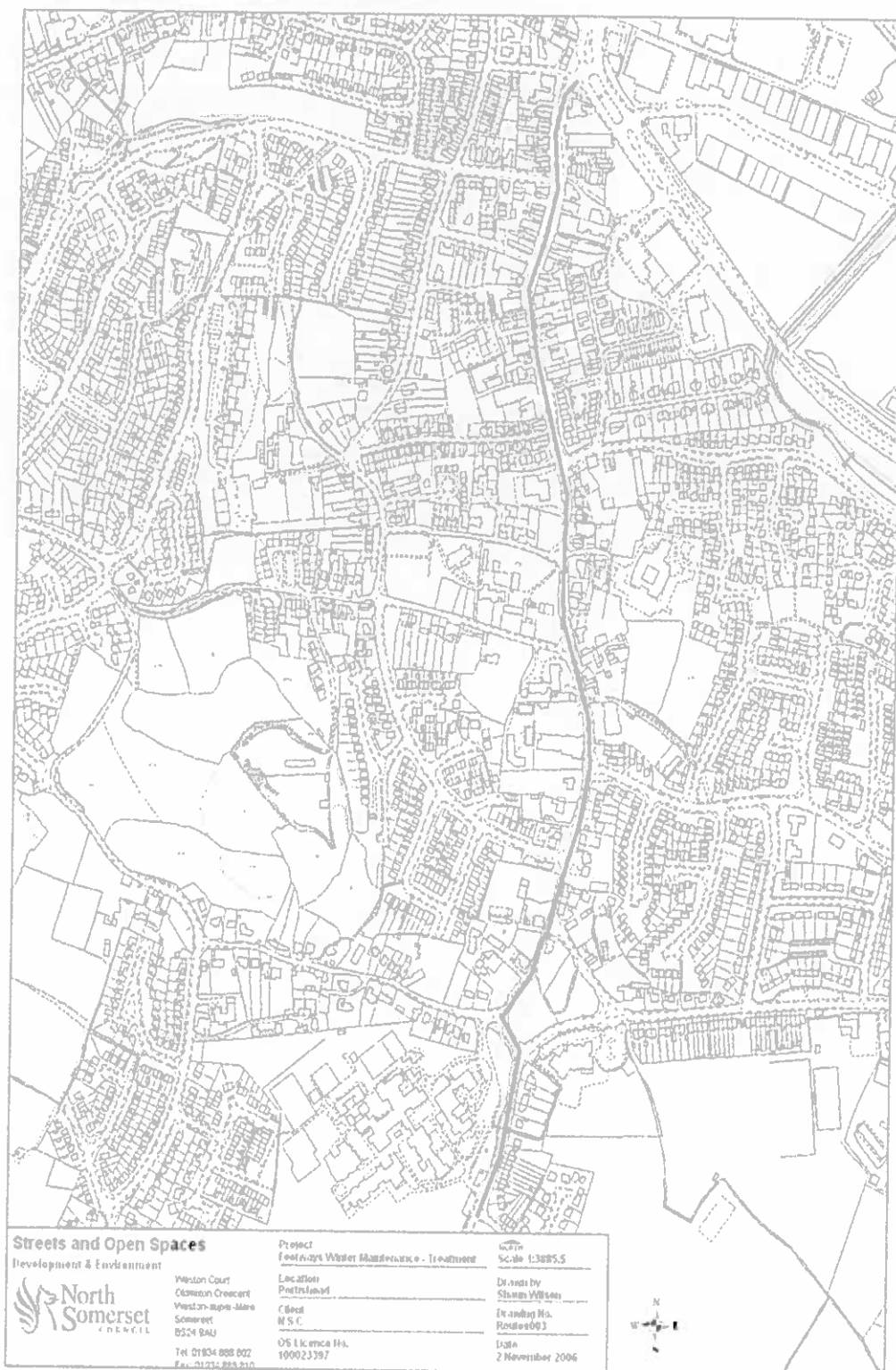
- A38 Bristol to County boundary (the section Lulsgate to Lower Langford may not be possible in severe snow conditions – alternative route via A370 and Stock Lane).
- A370 Bristol to M5 junction 21.
- B3133 Brinsea Road/Stock Lane
- A370 M5 junction 21 to Weston-super-Mare town centre via Primary Distributor Route (P.D.R.)
- Motorway access to Clevedon, Moor Lane, Kenn Road (Moor Lane to Triangle), Chapel Hill and Hill Road
- A369 Motorway access to Portishead, Wyndham Way, High Street and Avon Way

Footway Routes

Footways Defined as needing Treatment

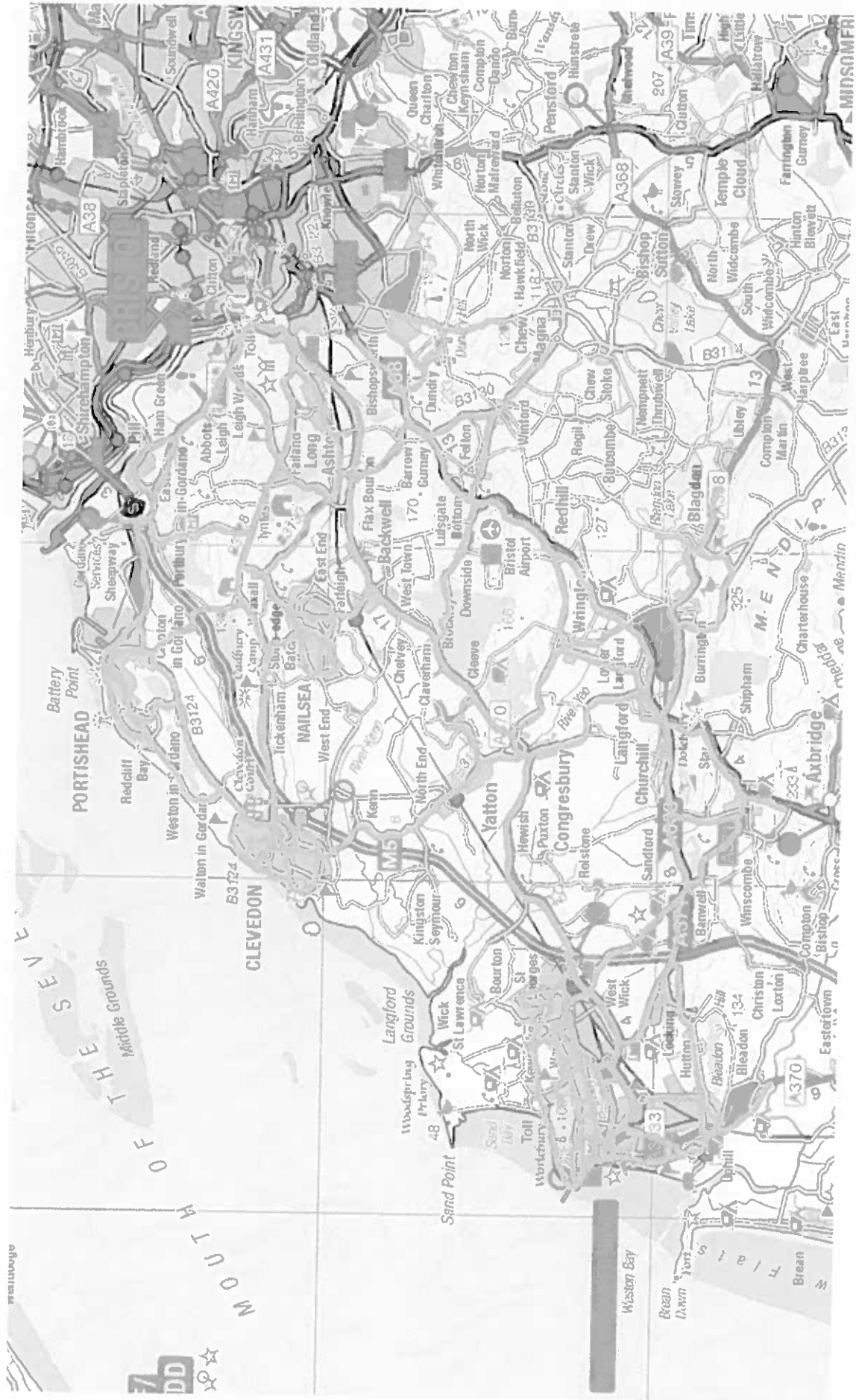
Station Road	W-s-M	275m (South side only)
Oxford Street	W-s-M	535m
Meadow Street	W-s-M	565m
High Street	W-s-M	550m
Bridgwater Road	W-s-M	1130m
Boulevard	W-s-M	715m
Waterloo Street (Part)	W-s-M	285m
High Street	Worle	2330m
High Street	Portishead	2085m







This map is a representation of the current state of the area and is not intended to be used as a legal document. It is the responsibility of the user to verify the accuracy of the information shown on this map.



Appendix B

Highways Operations
EMERGENCY STANDBY 2019/20

To be updated when rota is available

Note: Standby duty is from 16:30 hours on Friday until 08:45 hours the following Friday.

Winter Service Manual 2019/20

Telephone Numbers for NSC

Mobile

Not for publication

Skanska Supervisor Contact Details

Weather Forecast Proforma

[illegible]

Source: *Survey of Professional Forecasters*, <http://www.federalreserve.gov/releases/sfp/>. Note: Δ = change.

Vendian Tron Zoo	D	Dry	W	Water	Ambly	Cum	Leaf	Super Food	I	Am	Grove	B.	Shady	H	Mall	P.L. Right
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[illegible]

Appendix D

Sample Temperature Graph for weather station at A38

Appendix E

Treatment Matrix Carriageway

Forecast RST	Precipitation etc.	Predicted Road Conditions		
		Wet	Drying	Dry
May to fall below 0°C	No Rain No Fog	monitor conditions Salt before frost	Salt wet spots before frost	no action likely, monitor conditions
	No Rain No Fog			
Predicted to fall below 0°C	Forecast hoar frost forecast fog	Salt before frost		
	Forecast rain before freeze	Salt after rain stops		
	Forecast rain during freezing	Salt before frost and after rain stops		
	Possible rain Possible hoar frost possible fog	Salt before frost and monitor conditions	Monitor conditions	
Forecast snow (see note below *)		Salt before snow fall		
Freezing rain	Before rain	Salt before rainfall (40g/m ²)		
	During rain	Salt during rainfall (40g/m2)		
	After rain	Salt after rainfall (40g/m2)Until RST >+1°C		

* During snow conditions all resources will be directed to winter service operations and activities will be prioritised.

Appendix F

Treatment Matrix Footway

Decision Matrix for Footway Treatment				
	Forecast Conditions			
Footway Category	Overnight Frost Conditions for three or more consecutive days (wet overnight road surface temperature below zero but not extending beyond 07:30am)	Extended frost conditions (wet overnight road surface temperature below zero and extending beyond 07:30am)	Daytime frost Conditions (forecast road surface temperatures remaining below zero throughout daylight hours)	Snow Conditions
1 and 2	Instruct inspection Treat if frost conditions are forecast to continue	Pre-treatment. Commence as soon as practical	Monitor and further treatment as required	Snow removal will commence when resources become available from other priorities
3 and 4	No Treatment	No Treatment	No Treatment	Snow removal will commence when resources become available from other priorities

Appendix G

Minimum Salt Stocks

Table H1 – Minimum Salt Stocks					
Routes	Normal Salting Network (tonnes/run)	Minimum Winter Network (tonnes/run)	Full Pre-season stock	Minimum Stock	
				Core Winter Period Minimum Network (6 days/36 runs)	Overall Winter Period Minimum Network (3 days/ 18 runs)
Carriageways	40	30 (25% reduction)	(12 days/48 runs) 1920	1080	540
Footways	1	1	48	36	18
Salt bins (2 fills per year)	330	330	330	165	330
Total			2298	1281	888

Appendix H

Treatment Matrix A

Dry Salting (De-icer spread rates in g/m sq)

North Somerset considers that our spreader capability is good, however this is monitored throughout the season and the Highway Operations Manager will advise if this changes.

Recommended Spread Rates – Dry Salting (g/m ²) Treatment Matrix 8.6.7				
Road Surface Temperature (RST) when frost/ice is predicted	Spreader Capability			
	Fair		Good	
	Dry/Damp Road	Wet Road	Dry/Damp Road	Wet Road
At or above -1.0°C	8	8	8	8
-1.1°C to -2.0°C	8	11	8	8
-2.1°C to -3.0°C	9	17	8	13
-3.1°C to -4.0°C	12	23	9	17
-4.1°C to -5.0°C	14	28	11	21
-5.1°C to -7.0°C	20	39	15	30
-7.1°C to -10.0°C	27	54	20	40
-10.1°C to -15.0°C	38	75	28	56

If traffic levels fall to light i.e after 2130 hrs the above figures should be increased by 25%
 If traffic levels are determined to be heavy i.e. during rush hour, then the above figures should be increased by 20 %

Appendix I

Precautionary Treatments Before and During Snow or Freezing Rain

TREATMENT MATRIX 9.8.5 TREATMENTS BEFORE SNOWFALL AND FREEZING RAIN	
Weather conditions	
Light to Moderate/Heavy snow forecast	Spread: <ul style="list-style-type: none"> 20-40g/m² of dry salt, or 20-40g/m² of pre-wetted salt, or 15-30g/m² of treated salt
Freezing rain forecast	<ul style="list-style-type: none"> 40 or 2x20g/m² of dry salt, or 40 or 2x20g/m² of pre-wetted salt, or 30 or 2x15g/m² of treated salt
Note 1: In situations where time constraints dictate, a treatment of 20g/m ² across the whole of the scheduled network before the commencement of snowfall or freezing rain will typically prove more advantageous than a treatment of 40g/m ² on only part of the network.	

TREATMENT MATRIX 9.9.1 TREATMENTS DURING SNOW AND FREEZING RAIN		
Plough to remove as much material as possible e.g. slush, snow, compacted snow Ploughing should be down to the level of the road surface Ploughing should start and, where necessary, be continuous to prevent a build-up of snow A: snow melts under the action of salt, keep ploughing to remove slush		
No ice or compacted snow on surface	Ice or compacted snow on surface	
To provide a debonding layer, spread <ul style="list-style-type: none"> 20-40g/m² of dry salt, or 15-30g/m² of treated salt or 20-40g/m² of pre-wetted salt 	Is traffic likely to compact subsequent snowfall before further ploughing is possible?	
	YES	NO
	To provide a debonding layer, spread. <ul style="list-style-type: none"> 20-40g/m² of dry salt, or 15-30g/m² of treated salt or 20-40g/m² of pre-wetted salt 	No de-icer should be spread

Appendix J

Skanska Supervisor and Driver Rota

To be add when rota available

