

Winter Service Plan

Environment Department

2020 - 2021

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Cyngor **Sir Gâr**
Carmarthenshire
County Council



Contents

1. WINTER SERVICE POLICY STATEMENT	1
2. WINTER SERVICE MANAGEMENT ARRANGEMENTS	3
2.1 County Highways Winter Service arrangements	3
2.2 Trunk Road Winter Service arrangements	3
2.3 Winter service overview	4
3. WEATHER FORECASTING SYSTEMS AND MANAGEMENT	6
3.1 Winter Periods	6
3.2 Weather Forecasting	6
3.3 Staffing Arrangements	7
4. WINTER SERVICE OPERATIONS	8
4.1 Procedures	8
4.2. Service response	9
4.3 Snow clearance	10
4.4 Footways / Cycleways	11
4.5 Resources	11
Appendix 1. Carmarthenshire Forecast Domains & Weather Stations	14
Appendix 2. Weather Condition Forecast System	16
Appendix 3. Winter Service Flow Chart (indicative)	18

CARMARTHENSHIRE COUNTY COUNCIL ENVIRONMENT DEPARTMENT

1. WINTER SERVICE POLICY STATEMENT

The County Council aims to provide a Winter Service which, as far as is reasonably practicable, will facilitate the safe movement of vehicular traffic on the strategically important sections of the highway network and keep to a minimum delays and accidents due to adverse weather conditions.

Guidance to Highway Authorities on winter service operations has changed in recent years. In 2013 Appendix H of Well-Maintained Highways was published which provided more detailed and onerous advice to Highway Authorities on their winter service operations. This advice was then further revised through the publication in 2016 of Well Managed Highway Infrastructure Code of Practice which provided a broader view of asset management and was supplemented by Practical Guidance from the National Winter Service Research Group (NWSRG). The NWSRG guidance is currently under review and is expected to be published this winter.

Carmarthenshire County Council is liaising with other Welsh Highway Authorities to ensure a consistent approach is adopted and we will be reviewing operations and introducing improvements as appropriate. The NWSRG have recognised that "... in certain cases it could potentially take up to around 10 years or so for major programmes of change to be fully implemented". Carmarthenshire County Council has already made significant improvements in operations. Our gritting fleet is modern and designed to a high standard and new weather stations were installed in 2018/19. We continue to work with neighbouring authorities, the Trunk Road Agency and others in reviewing and improving operations.

Since last winter there have been two notable changes to our Winter Service Plan, namely, the impact of Covid-19 and changes to the gritting of our car parks.

COVID-19. The on-going impacts of the pandemic and changing guidance are continually under review and this has the potential to impact our Winter Service delivery. Our aim is to maintain the service levels set out within this plan but, should it become necessary, we may have to put contingency measures in place and updates will be provided on our website via the following link:

<https://www.carmarthenshire.gov.wales/home/council-services/travel-roads-parking/gritting/>

CAR PARKS.

There is no statutory requirement to grit car parks and there are a number of local authorities in Wales who do not or have ceased to grit car parks. The level of resource available to deliver services has reduced each year since 2008. Given the resource constraints the County Council has had to rationalise service provision and consequently agreed budget savings in 2020/21 to amend our winter gritting routes to exclude Car Parks except those that include medical facilities.

2. WINTER SERVICE MANAGEMENT ARRANGEMENTS

2.1 County Highways Winter Service arrangements

All winter service operations on public highways within Carmarthenshire are undertaken by the County Council's Transportation and Highways Service within the Environment Department. This includes working in partnership with the Welsh Government which is the Highway Authority for Trunk Roads within Carmarthenshire. We also work closely with neighbouring authorities to ensure a consistent level of service for the travelling public. Organisational responsibilities and operational procedures are documented in the Departments ISO 9001 Winter Service Quality Plan.

2.2 Trunk Road Winter Service arrangements

The Welsh Government is responsible for Motorway and Trunk Road Maintenance in Wales, with the two agents in place, SWTRA (South Wales Trunk Road Agent) and NMWTRA (North and Mid Wales Trunk Road Agent). The Trunk Road Network within Carmarthenshire is set out below:

Route	Section	Length (km)
A40	Pontwen to Llandovery A483 Jct	8.9
A40	Llandovery A483 Jct to Abergwili	40.4
A40	Abergwili to Black Bridge (Whitland)	46
A48	Pont Abraham to Carmarthen	48.8
A477	St Clears to Castle Heli	11.5
A483	Pont Abraham to Llandeilo	21.3
A483	Llandovery to Sugar Loaf	13.1
	Total	190

We work closely with SWTRA to treat the Trunk Roads within Carmarthenshire. Forecasting and decision making for winter treatment is undertaken by SWTRA with the Highways and Transportation team then undertaking treatment of the Trunk Road Network within specified timeframes. This is undertaken with a combination of Welsh Government and County Council gritting vehicles operating from depots at Carmarthen, Cross Hands, Pont Abraham and Llandovery.

2.3 Winter service overview

Carmarthenshire has the second largest highway network in Wales and when winter conditions are forecast pre-salting of our primary network is undertaken ahead of freezing temperatures to ensure the County continues to function. Fulfilling our duty (Highways Act 1980 S41 (1A)) to ensure, as far as is reasonably practicable, that safe passage along the highway is not endangered by snow or ice can be challenging when the timeframe for treatment is often limited. Weather conditions across the County are varied due to our location and topography and are not entirely predictable.

To achieve this we focus on treating a Primary Network of approximately 1040km of Carmarthenshire's roads, which equates to around 30% of the entire network including Trunk roads. Approximately 24% (836km) of the County road network is gritted as part of this Primary Network. The Primary Network includes Trunk and Primary Routes, Principal Roads leading to important locations and facilities and key operational routes such as:-

- Hospitals and Ambulance Stations
- Fire Stations
- Police Stations
- Key Bus Routes
- Car Parks (near medical facilities only)
- Main Schools & Colleges

The Winter Service is dependent on the efficient spreading of salt from purpose-built vehicles with the aim to ensure that salt is spread on the highway before the point of freezing. When temperatures fall below -7 degrees C the salt becomes less effective. We achieve this via the use of a fleet of gritting vehicles which are strategically based across the County. Approximately 140 tonnes of salt are spread onto the highway network on a single run. The Gritting fleet are equipped with GPS tracking devices to enable accurate monitoring of their location on the gritting route and which roads have been treated. The gritting fleet was significantly updated in 2016 with new vehicles across the fleet incorporating improved modern features and controls to support improvements to service delivery, safety and efficiency. Exactrak gritting route navigation is fitted to vehicles to improve driver information and routing.

The primary gritting routes can be viewed by following the link below:

<https://www.carmarthenshire.gov.wales/home/council-services/travel-roads-parking/gritting>

When conditions dictate, and resources permit, treatment may be carried out on a secondary network which will include the more infrequent bus routes, routes to smaller villages, settlements and steep gradients.

3. WEATHER FORECASTING SYSTEMS AND MANAGEMENT

3.1 Winter Periods

Three distinct periods for winter service are typically identified and are as follows:-

MARGINAL PERIOD – Severe weather not expected	End of September and second half of April
LOW PERIOD – Severe weather may occur	First half of October and first half of April
HIGH PERIOD - Severe weather reasonably expected	Mid October to end of March

3.2 Weather Forecasting

Between 1st October and 30th April, the County Council subscribes to a weather forecasting service, currently provided by MetDesk, a private sector weather forecasting organisation. This service is procured by means of an all Wales framework contract and provides a common weather forecast service across neighbouring regional authorities including Pembrokeshire, Powys, Swansea and Neath Port Talbot. The service takes the form of a rolling 36-hour forecast transmitted daily at 12 noon, supplemented by morning and evening updates and a longer range 2-5 day forecast which is provided daily. The service also provides out of office hours forecaster consultancy facilities. Forecasts are given on a domain basis and officers can access up to date forecasts and weather information via a web-based management system. A map of the domains used is presented in Appendix 1.

A stand-by Duty Officer will be on duty each day throughout the 'High period' (19th October 2020 to 31st March 2021).

During evenings and weekends the Duty Officer will be alerted directly by the MetDesk forecaster when required to advise of any forecast changes or severe conditions. The Duty Officer can contact the forecaster at any time to discuss weather conditions in addition to the information available via the web-based management system. A typical weather forecast is included in Appendix 2.

The Department and its weather forecaster can monitor data obtained from weather outstations that have been installed on Trunk and Principal

Roads in Wales. In 2018 and 2019 Carmarthenshire has invested in the upgrade and addition of new road weather stations to further improve the management and monitoring of its service. In addition we can access data from weather stations in neighbouring authorities. The road weather stations are sited in the following locations (see appendix 1) :

- Pumsaint, Llanwrda to Lampeter Road A482 –upgraded 2018
- Carmel, Cross Hands A476 – upgraded 2018
- Kidwelly bypass A484 – New site 2018
- Bryn Iwan B4299 – New site 2018
- A4069 Black Mountain (Solar) – New site 2018
- A486 Pont-Tyweli, Llandysul – New site 2019
- B4309 Five Roads – New site 2019



Sensors installed at the outstations store and relay information on air and road surface temperatures, dew point, wind speed and direction, and presence of salt. The information is interrogated by computer via a web bureau service. All the weather stations now include cameras to provide live images (excluding Black Mountain site which is solar powered)

Links with the system are provided to the weather forecasting organisations. The system is monitored 24 hours/day by our weather forecasters and County Council Duty Officers are alerted when critical situations are detected. The weather station locations are included in Appendix 1.

3.3 Staffing Arrangements

A County Duty Officer is designated daily for the County (during High period) and is responsible for deciding on the daily winter service action appropriate to the forecast received and prevailing conditions on the County Roads. Outside of office hours the Duty Officer may be contacted on a dedicated emergency line by means of an automatic call forwarding system.

For Trunk Roads, a dedicated Duty Officer will receive and manage winter service instructions on all Trunk Roads in Carmarthenshire and is responsible for liaising with the County Duty Officer to ensure effective co-ordination.

4. WINTER SERVICE OPERATIONS

4.1 Procedures

Overall direction of the Winter Service Operations is the responsibility of the Head of Highways and Transport, with duties delegated to authorised officers (see table below).

Name	Job Title	Delegated Management Role
Richard Waters	Highways and Transportation Manager	Winter Service Direction
Darren King	Highway Services Manager	Winter Service Operations
Chris Nelson	Highways Asset Manager	Planning and Systems management
Highway Duty Officers (x8)	Various	Daily winter action decision making & monitoring
Winter Service Supervisors (x19)	Various	Supervision of gritting operations

The gritting action for the Trunk Road Agency is distributed via email to the County Duty Officers. The gritting action for County roads are entered by the Duty Officers onto the MetDesk forecast system's 'Decision board' by no later than 14.00 hours each day. A log of the daily action is generated and e-mailed to key organisations including Emergency Services, neighbouring authorities and the Welsh Government. Control room staff monitor the logged actions daily to ensure that information has been circulated to the appropriate parties.

A quality plan and specification of Winter Service requirements giving additional details of procedures and supervision arrangements for operational use has been drawn up and is available as a separate document. The levels of action are as follows:

Level	Action description
0	No action – Drivers stood down
1	Review Pending - Drivers retained on call to await further instructions - forecast to be monitored by duty officer - potential for gritting action
2	Patrol - undertaken by drivers in gritting vehicles on specified routes to apply salt selectively as may be indicated by conditions e.g. icy patches
3	Pre-salt - undertaken by drivers in gritting vehicles to apply salt at the specified rate of spread for the complete length of the scheduled routes, normally in advance of forecast ice
4	Pre-salt with plough - Applications of salt for dealing with snow conditions, combined if necessary with snow ploughing

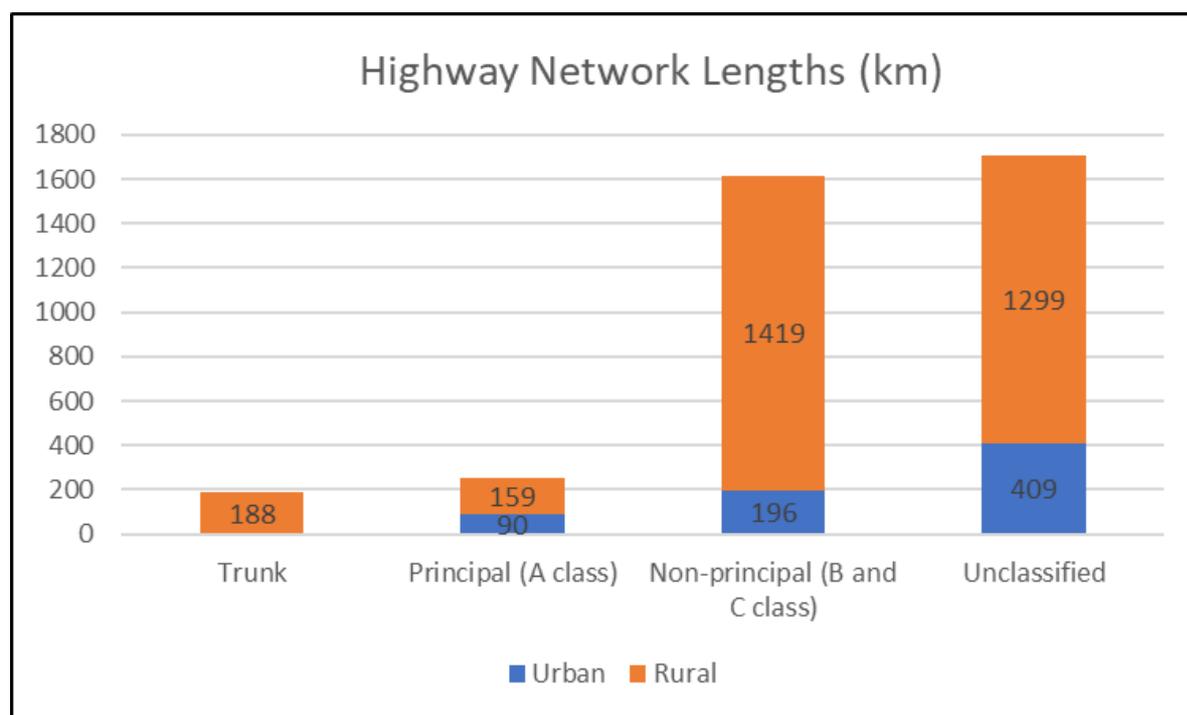
A flow chart to illustrate the decision making and action process is shown in Appendix 3.

In a major event the County Councils Emergency Planning protocols may be brought into operation.

4.2. Service response

The Winter Service is dependent on the efficient spreading of salt from purpose-built vehicles. The use of salt or grit or mixtures of both minimises the effects of ice and packed snow. Lying snow is removed by ploughing or physical loading. Carmarthenshire has an area of 934 square miles and totals 3760km (including trunk roads). Our road network comprises Motorway, Trunk, County, Principal, Non-Principal and Unclassified Roads. This network is primarily rural in character, but there is a significant urban element as well.

Network details are as follows: -



Pre-salting of Carriageways

First priority is given to trunk and other primary routes, followed by principal roads, roads leading to important industrial locations, hospitals, ambulance stations, police stations, fire stations, inter-city stations, bus stations/garages, key bus routes, main car parks, and main schools and colleges. The total pre-salt run treats around 1040km of carriageway, which is approx. 30% of the entire County/Trunk Network.

Reduced Service Provision

On the directions of the Director of Environment the Winter Service Policy and Plan will give Duty Officers in extreme circumstances the flexibility to reduce service provision and withdraw certain aspects of the service. This may potentially apply during prolonged periods of severe weather where salt stocks are reaching a critical point and the forecast predicts further spells of cold weather.

4.3 Snow clearance

Every endeavour will be made to ensure that roads on the Primary Network are treated ahead of ice and snow being forecast. This treatment should help to provide a de-bonding layer to minimise the adhesion of snow and ice to the carriageway surface and make any necessary snow clearance more efficient. All of our gritter fleet are fitted with snow ploughs should snow clearance be required and our key focus will be on the key highway routes.

4.4 Footways / Cycleways

Our winter service operation is primarily focused towards ensuring safe passage along the highway as far as is reasonably practicable with the resources we have available. During winter conditions our resources are normally fully focused on treating and clearing the primary highway network and this does mean that we are unlikely to be able to also treat footways. If resources permit and weather conditions dictate then we will consider treating footways / cycleways in high priority locations.

4.5 Resources

TABLE 1. Plant/Vehicle Deployment

Plant/Vehicle	Number available (including reserves)
Swap body gritter – (18t)	15
Swap body gritter – (26t)	6
Skid mounted gritter (7.5t)	1
Tractor mounted Snow Blower	1

TABLE 2. Manpower Deployment

Occupation	Number trained
Drivers (NVQ Qualified)	85
Mechanics	5

TABLE 3. Salt Storage capacity

Depot Location	Type of Storage	
	In barn (Tonnes)	In open (Tonnes)
Carmarthen	2500	400
Crosshands	4500	850
Llandovery	4000	
Total	11000	1250

This document has been reviewed and approved by:

Head of Highways and Transport

Environment Department

Parc Myrddin,

Carmarthen,

SA31 1HQ.

Signed  Date 22nd October 2020

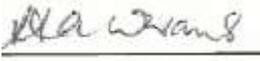
County Councillor, Cabinet Member for Environment

County Hall,

Jail Hill,

Carmarthen,

SA31 1JP.

Signed Date  24th October 2020

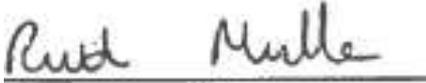
Director of Environment

County Hall,

Jail Hill,

Carmarthen,

SA31 1JP.

Signed  Date 24th October 2020

Appendix 1. Carmarthenshire Forecast Domains & Weather Stations

Appendix 2. Weather Condition Forecast System

Forecast layout

Home 36 Hour Summary Thursday 12-05-2017 11:41:01 BST Carmarthenshire

Contact a Forecaster: 01296

36 Hour Summary for Carmarthenshire

Forecast Issued:	25th October 2017 11:41:01 BST	Forecaster:	
Forecast Period:	Thursday 12/05/17 12:00 to Saturday 14/05/17 06:00	Forecaster DDT:	

Headline RSTS WELL ABOVE ZERO
Confidence HIGH

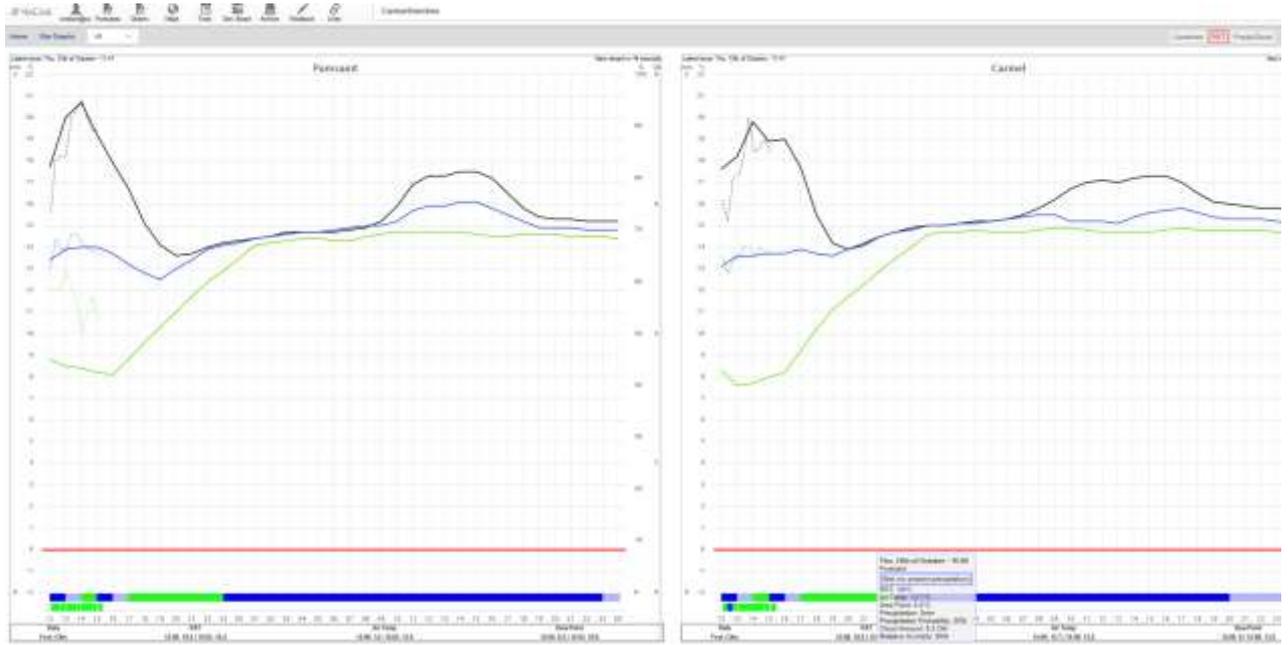
General Synopsis
 Variable cloud today with the chance of scattered light showers on and off. Largely dry this evening with some clear periods, but mostly cloudy skies overnight with showery bursts of rain, some heavy by dawn. Mild with RSTS well above zero.

Show Summary

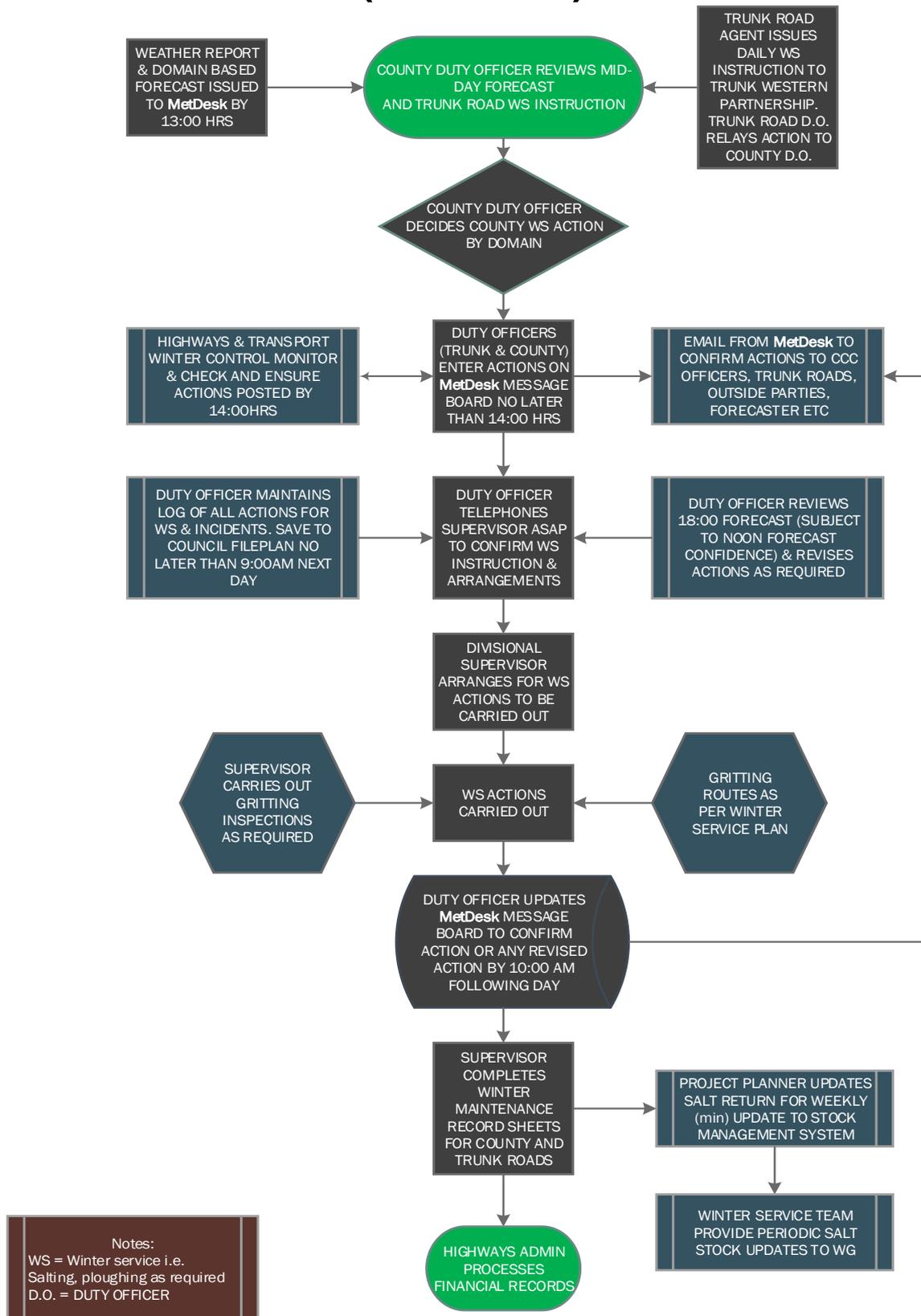
Weather Type Key	Dry	W	Wet	R	Rain	DW	Dew	MT	Heat Frost	S	Snow	SI	Sleet	HA	Hail	FR	Fz Rain
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	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
High Routes (max. 400m)	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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(C)	15.4	15.8	17.2	15.8	15.0	13.8	12.3	11.2	11.0	11.2	11.5	11.7	11.6	12.0	12.1	12.2	12.3	12.4	12.5	12.7	12.8	12.8	12.4	12.5	12.7	12.8	12.4	14.0	14.7	15.0	15.1	15.2	15.2	15.3	13.7	13.8	13.8	13.7	13.6	13.4	13.1	13.1	13.1	13.2	13.2	13.2	13.1	13.0	12.9	12.8	12.7	12.6	12.5	12.4	12.3	12.2	12.1	12.0	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.0	10.9	10.8	10.7	10.6	10.5	10.4	10.3	10.2	10.1	10.0	9.9	9.8	9.7	9.6	9.5	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.4	7.3	7.2	7.1	7.0	6.9	6.8	6.7	6.6	6.5	6.4	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.2	5.1	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0.0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.1	-1.2	-1.3	-1.4	-1.5	-1.6	-1.7	-1.8	-1.9	-2.0	-2.1	-2.2	-2.3	-2.4	-2.5	-2.6	-2.7	-2.8	-2.9	-3.0	-3.1	-3.2	-3.3	-3.4	-3.5	-3.6	-3.7	-3.8	-3.9	-4.0	-4.1	-4.2	-4.3	-4.4	-4.5	-4.6	-4.7	-4.8	-4.9	-5.0	-5.1	-5.2	-5.3	-5.4	-5.5	-5.6	-5.7	-5.8	-5.9	-6.0	-6.1	-6.2	-6.3	-6.4	-6.5	-6.6	-6.7	-6.8	-6.9	-7.0	-7.1	-7.2	-7.3	-7.4	-7.5	-7.6	-7.7	-7.8	-7.9	-8.0	-8.1	-8.2	-8.3	-8.4	-8.5	-8.6	-8.7	-8.8	-8.9	-9.0	-9.1	-9.2	-9.3	-9.4	-9.5	-9.6	-9.7	-9.8	-9.9	-10.0	-10.1	-10.2	-10.3	-10.4	-10.5	-10.6	-10.7	-10.8	-10.9	-11.0	-11.1	-11.2	-11.3	-11.4	-11.5	-11.6	-11.7	-11.8	-11.9	-12.0	-12.1	-12.2	-12.3	-12.4	-12.5	-12.6	-12.7	-12.8	-12.9	-13.0	-13.1	-13.2	-13.3	-13.4	-13.5	-13.6	-13.7	-13.8	-13.9	-14.0	-14.1	-14.2	-14.3	-14.4	-14.5	-14.6	-14.7	-14.8	-14.9	-15.0	-15.1	-15.2	-15.3	-15.4	-15.5	-15.6	-15.7	-15.8	-15.9	-16.0	-16.1	-16.2	-16.3	-16.4	-16.5	-16.6	-16.7	-16.8	-16.9	-17.0	-17.1	-17.2	-17.3	-17.4	-17.5	-17.6	-17.7	-17.8	-17.9	-18.0	-18.1	-18.2	-18.3	-18.4	-18.5	-18.6	-18.7	-18.8	-18.9	-19.0	-19.1	-19.2	-19.3	-19.4	-19.5	-19.6	-19.7	-19.8	-19.9	-20.0	-20.1	-20.2	-20.3	-20.4	-20.5	-20.6	-20.7	-20.8	-20.9	-21.0	-21.1	-21.2	-21.3	-21.4	-21.5	-21.6	-21.7	-21.8	-21.9	-22.0	-22.1	-22.2	-22.3	-22.4	-22.5	-22.6	-22.7	-22.8	-22.9	-23.0	-23.1	-23.2	-23.3	-23.4	-23.5	-23.6	-23.7	-23.8	-23.9	-24.0	-24.1	-24.2	-24.3	-24.4	-24.5	-24.6	-24.7	-24.8	-24.9	-25.0	-25.1	-25.2	-25.3	-25.4	-25.5	-25.6	-25.7	-25.8	-25.9	-26.0	-26.1	-26.2	-26.3	-26.4	-26.5	-26.6	-26.7	-26.8	-26.9	-27.0	-27.1	-27.2	-27.3	-27.4	-27.5	-27.6	-27.7	-27.8	-27.9	-28.0	-28.1	-28.2	-28.3	-28.4	-28.5	-28.6	-28.7	-28.8	-28.9	-29.0	-29.1	-29.2	-29.3	-29.4	-29.5	-29.6	-29.7	-29.8	-29.9	-30.0	-30.1	-30.2	-30.3	-30.4	-30.5	-30.6	-30.7	-30.8	-30.9	-31.0	-31.1	-31.2	-31.3	-31.4	-31.5	-31.6	-31.7	-31.8	-31.9	-32.0	-32.1	-32.2	-32.3	-32.4	-32.5	-32.6	-32.7	-32.8	-32.9	-33.0	-33.1	-33.2	-33.3	-33.4	-33.5	-33.6	-33.7	-33.8	-33.9	-34.0	-34.1	-34.2	-34.3	-34.4	-34.5	-34.6	-34.7	-34.8	-34.9	-35.0	-35.1	-35.2	-35.3	-35.4	-35.5	-35.6	-35.7	-35.8	-35.9	-36.0	-36.1	-36.2	-36.3	-36.4	-36.5	-36.6	-36.7	-36.8	-36.9	-37.0	-37.1	-37.2	-37.3	-37.4	-37.5	-37.6	-37.7	-37.8	-37.9	-38.0	-38.1	-38.2	-38.3	-38.4	-38.5	-38.6	-38.7	-38.8	-38.9	-39.0	-39.1	-39.2	-39.3	-39.4	-39.5	-39.6	-39.7	-39.8	-39.9	-40.0	-40.1	-40.2	-40.3	-40.4	-40.5	-40.6	-40.7	-40.8	-40.9	-41.0	-41.1	-41.2	-41.3	-41.4	-41.5	-41.6	-41.7	-41.8	-41.9	-42.0	-42.1	-42.2	-42.3	-42.4	-42.5	-42.6	-42.7	-42.8	-42.9	-43.0	-43.1	-43.2	-43.3	-43.4	-43.5	-43.6	-43.7	-43.8	-43.9	-44.0	-44.1	-44.2	-44.3	-44.4	-44.5	-44.6	-44.7	-44.8	-44.9	-45.0	-45.1	-45.2	-45.3	-45.4	-45.5	-45.6	-45.7	-45.8	-45.9	-46.0	-46.1	-46.2	-46.3	-46.4	-46.5	-46.6	-46.7	-46.8	-46.9	-47.0	-47.1	-47.2	-47.3	-47.4	-47.5	-47.6	-47.7	-47.8	-47.9	-48.0	-48.1	-48.2	-48.3	-48.4	-48.5	-48.6	-48.7	-48.8	-48.9	-49.0	-49.1	-49.2	-49.3	-49.4	-49.5	-49.6	-49.7	-49.8	-49.9	-50.0	-50.1	-50.2	-50.3	-50.4	-50.5	-50.6	-50.7	-50.8	-50.9	-51.0	-51.1	-51.2	-51.3	-51.4	-51.5	-51.6	-51.7	-51.8	-51.9	-52.0	-52.1	-52.2	-52.3	-52.4	-52.5	-52.6	-52.7	-52.8	-52.9	-53.0	-53.1	-53.2	-53.3	-53.4	-53.5	-53.6	-53.7	-53.8	-53.9	-54.0	-54.1	-54.2	-54.3	-54.4	-54.5	-54.6	-54.7	-54.8	-54.9	-55.0	-55.1	-55.2	-55.3	-55.4	-55.5	-55.6	-55.7	-55.8	-55.9	-56.0	-56.1	-56.2	-56.3	-56.4	-56.5	-56.6	-56.7	-56.8	-56.9	-57.0	-57.1	-57.2	-57.3	-57.4	-57.5	-57.6	-57.7	-57.8	-57.9	-58.0	-58.1	-58.2	-58.3	-58.4	-58.5	-58.6	-58.7	-58.8	-58.9	-59.0	-59.1	-59.2	-59.3	-59.4	-59.5	-59.6	-59.7	-59.8	-59.9	-60.0	-60.1	-60.2	-60.3	-60.4	-60.5	-60.6	-60.7	-60.8	-60.9	-61.0	-61.1	-61.2	-61.3	-61.4	-61.5	-61.6	-61.7	-61.8	-61.9	-62.0	-62.1	-62.2	-62.3	-62.4	-62.5	-62.6	-62.7	-62.8	-62.9	-63.0	-63.1	-63.2	-63.3	-63.4	-63.5	-63.6	-63.7	-63.8	-63.9	-64.0	-64.1	-64.2	-64.3	-64.4	-64.5	-64.6	-64.7	-64.8	-64.9	-65.0	-65.1	-65.2	-65.3	-65.4	-65.5	-65.6	-65.7	-65.8	-65.9	-66.0	-66.1	-66.2	-66.3	-66.4	-66.5	-66.6	-66.7	-66.8	-66.9	-67.0	-67.1	-67.2	-67.3	-67.4	-67.5	-67.6	-67.7	-67.8	-67.9	-68.0	-68.1	-68.2	-68.3	-68.4	-68.5	-68.6	-68.7	-68.8	-68.9	-69.0	-69.1	-69.2	-69.3	-69.4	-69.5	-69.6	-69.7	-69.8	-69.9	-70.0	-70.1	-70.2	-70.3	-70.4	-70.5	-70.6	-70.7	-70.8	-70.9	-71.0	-71.1	-71.2	-71.3	-71.4	-71.5	-71.6	-71.7	-71.8	-71.9	-72.0	-72.1	-72.2	-72.3	-72.4	-72.5	-72.6	-72.7	-72.8	-72.9	-73.0	-73.1	-73.2	-73.3	-73.4	-73.5	-73.6	-73.7	-73.8	-73.9	-74.0	-74.1	-74.2	-74.3	-74.4	-74.5	-74.6	-74.7	-74.8	-74.9	-75.0	-75.1	-75.2	-75.3	-75.4	-75.5	-75.6	-75.7	-75.8	-75.9	-76.0	-76.1	-76.2	-76.3	-76.4	-76.5	-76.6	-76.7	-76.8	-76.9	-77.0	-77.1	-77.2	-77.3	-77.4	-77.5	-77.6	-77.7	-77.8	-77.9	-78.0	-78.1	-78.2	-78.3	-78.4	-78.5	-78.6	-78.7	-78.8	-78.9	-79.0	-79.1	-79.2	-79.3	-79.4	-79.5	-79.6	-79.7	-79.8	-79.9	-80.0	-80.1	-80.2	-80.3	-80.4	-80.5	-80.6	-80.7	-80.8	-80.9	-81.0	-81.1	-81.2	-81.3	-81.4	-81.5	-81.6	-81.7	-81.8	-81.9	-82.0	-82.1	-82.2	-82.3	-82.4	-82.5	-82.6	-82.7	-82.8	-82.9	-83.0	-83.1	-83.2	-83.3	-83.4	-83.5	-83.6	-83.7	-83.8	-83.9	-84.0	-84.1	-84.2	-84.3	-84.4	-84.5	-84.6	-84.7	-84.8	-84.9	-85.0	-85.1	-85.2	-85.3	-85.4	-85.5	-85.6	-85.7	-85.8	-85.9	-86.0	-86.1	-86.2	-86.3	-86.4	-86.5	-86.6	-86.7	-86.8	-86.9	-87.0	-87.1	-87.2	-87.3	-87.4	-87.5	-87.6	-87.7	-87.8	-87.9	-88.0	-88.1	-88.2	-88.3	-88.4	-88.5	-88.6	-88.7	-88.8	-88.9	-89.0	-89.1	-89.2	-89.3	-89.4	-89.5	-89.6	-89.7	-89.8	-89.9	-90.0	-90.1	-90.2	-90.3	-90.4	-90.5	-90.6	-90.7	-90.8	-90.9	-91.0	-91.1	-91.2	-91.3	-91.4	-91.5	-91.6	-91.7	-91.8	-91.9	-92.0	-92.1	-92.2	-92.3	-92.4	-92.5	-92.6	-92.7	-92.8	-92.9	-93.0	-93.1	-93.2	-93.3	-93.4	-93.5	-93.6	-93.7	-93.8	-93.9	-94.0	-94.1	-94.2	-94.3	-94.4	-94.5	-94.6	-94.7	-94.8	-94.9	-95.0	-95.1	-95.2	-95.3	-95.4	-95.5	-95.6	-95.7	-95.8	-95.9	-96.0	-96.1	-96.2	-96.3	-96.4	-96.5	-96.6	-96.7	-96.8	-96.9	-97.0	-97.1	-97.2	-97.3	-97.4	-97.5	-97.6	-97.7	-97.8	-97.9	-98.0	-98.1	-98.2	-98.3	-98.4	-98.5	-98.6	-98.7	-98.8	-98.9	-99.0	-99.1	-99.2	-99.3	-99.4	-99.5	-99.6	-99.7	-99.8	-99.9	-100.0	-100.1	-100.2	-100.3	-100.4	-100.5	-100.6	-100.7	-100.8	-100.9	-101.0	-101.1	-101.2	-101.3	-101.4	-101.5	-101.6	-101.7	-101.8	-101.9	-102.0	-102.1	-102.2	-102.3	-102.4	-102.5	-102.6	-102.7	-102.8	-102.9	-103.0	-103.1	-103.2	-103.3	-103.4	-103.5	-103.6	-103.7	-103.8	-103.9	-104.0	-104.1	-104.2	-104.3	-104.4	-104.5	-104.6	-104.7	-104.8	-104.9	-105.0	-105.1	-105.2	-105.3	-

Weather station data



Appendix 3. Winter Service Flow Chart (indicative)



Notes:
 WS = Winter service i.e. Salting, ploughing as required
 D.O. = DUTY OFFICER