

4.8 Highways Adverse Weather & Winter Service Plan

4.8.1 Adverse Weather Overview

The highway network is of vital importance to ensure Carmarthenshire continues to function during adverse weather events. From facilitating blue light services responding to emergencies or helping learners get to school, ensuring people get to work or food gets to shelves, the highway network provides a vital lifeline for local our communities. Keeping this lifeline as open and accessible as possible during adverse weather is a key role undertaken by the County Council's Highways & Transportation Team.

Carmarthenshire has the second largest highway network in Wales, and it is not always possible to ensure all 3,500Km of highway are open and accessible at all times. A risk-based approach has therefore been adopted utilising the Highway Network Hierarchy to focus operational resources towards the most important arterial routes.

The Highways & Transportation Team's operational response to adverse weather is scaled up or down in accordance with the forecast weather impacts. Where the weather event is particularly significant, a multi-agency response may be triggered in accordance with the Council's Emergency Planning (Civil Contingencies) procedures. This Highways Adverse Weather & Winter Service Plan may be mobilised as part of this to support either a multi-agency approach, to respond to a Highways Emergency (see 4.7.2,4.7.3) or activated singularly.

The objective of the Highways Adverse Weather & Winter Service Plan is to ensure a resilient highway network during hazardous weather events. In line with the Code of Practice "*Well-Managed Highways Infrastructure*" the Adverse Weather & Winter Service Plan now covers all weather impacts on the highway network. This is an expansion on the traditional approach which concentrated on operations to tackle the risk of snow and ice and reflects the wider impacts of climate change on our weather.

This wider remit of weather related impacts include:

- Heavy rain and Storms events
- Tidal, Surface water and River flooding
- Extreme winds
- Prolonged High Temperatures / Heatwaves
- Extreme winter weather

The impacts of these events are increasingly evident and can significantly influence the lives of our residents and highway users. The different weather events require specific responses designed in accordance with the risk presented. As a result our approach has been expanded with a greater focus on weather forecasting and information, resource management and operational planning for the particular weather event forecast or experienced.

4.8.2 Weather Information

Timely and accurate information is a vital component in managing the operational response to unfolding weather events. The weather in the UK is subject to a very complex and dynamic set of variables and forecasts are developed to provide the best possible understanding of likely weather conditions. It is, however, important to acknowledge that these are only forecast and actual weather conditions can differ from those expected.

The County Council's Highways & Transportation Team work closely with a number of agencies to share information and coordinate responses. The greater the detail of information we can provide for Carmarthenshire enables forecasters to enhance the details of their forecast which helps with our response.

The authority will usually be warned of severe weather impacts in advance by means of the following services:

- National Flood Forecasting Centre.
- Met Office Civil Contingencies Advisor.
- Natural Resources Wales Flood Warnings.
- Met Office weather alerts (Yellow/Amber/Red Warnings).
- Dedicated local road weather forecasts for winter hazards.
- Roadside weather monitoring sites and alert systems within Carmarthenshire and the surrounding area.

Carmarthenshire County Council provides information to our partner agencies and weather forecasters from a series of weather stations strategically placed around the County to provide the best possible representation of local weather conditions. There are currently 13 such dedicated weather stations which provide a wide range of weather data throughout the year including information on road surface temperature, air temperature, humidity, wind and rainfall data plus real-time up to date camera images.

The stations are remotely linked to a weather information system which collates data that is accessed by our partners and is available to staff within the highways division at all times including out of hours. Links with the system are also provided to the weather forecasting organisation enabling a more detailed and tailored local monitoring and forecasting service. The system is monitored 24 hours/day by our weather forecasters and County Council Duty Officers are alerted when critical situations are detected. This is also particularly beneficial when managing extreme adverse weather.

The locations of the current weather stations are shown on the plan below.



**LOCATION PLAN
 REGIONAL WEATHER STATIONS**

4.8.3 Resource Management

The operational response to weather events is managed proportionally in response to the expected severity of the event and the likely risks the event will present. Where an event is severe or is expected to be prolonged it may be necessary to focus resources towards key areas of risk and operational decisions will need to be made on this basis.

As an example, this has previously been the case with severe winter weather where due to limitations of salt supplier or gritter drivers it became necessary to reduce the normal winter treatment network to a Resilient Network of routes which focused on maintaining the key strategic roads only. Alternatively, during a prolonged period of snowfall in 2018, having ensured the Primary Network was satisfactorily treated, it was possible to treat a number of minor roads which provided access to the more isolated villages.

As set out in part 4.7 of this manual, during periods of high demand, including adverse weather events, resources are managed and additional resources may be deployed in proportion to the risk presented or forecast. This is generally agreed in advance with Senior Managers following official Weather and Flood warnings. Typically this will involve having additional highway operatives on stand-by and ready to deal with the impacts of a weather event and this response is scaled in accordance with the risk.

Where the risk is significant additional external resources may also be engaged to assist highway teams through commercial contracts for services such as high pressure pumping, jetting and gulley cleaning in response to flooding, sweeping to clear debris from roads, JCBs to remove fallen trees, specialist arborist services for tree removal and traffic management companies to assist with road closures, and diversions.






4.8.4 Storm Events

The Highway response to forecast storm events is managed in proportion to the magnitude and severity of the forecast weather event. Particularly impactful weather events may trigger a wider multi-agency response in accordance with Emergency Planning procedures.

4.8.5 Flooding

Overall responsibility for managing flooding sits with a number of public bodies in Wales including Natural Resources Wales (Main Rivers, Coastal and Tidal), Water Authority (Sewer flooding), Ordinary watercourses (CCC Flood Defence), Ground Water and Surface Water (CCC Flood Defence).

Flooding alerts are normally issued by Natural Resources Wales and the types of alert issued are shown in the table below which also indicates the likely organisational or multi-agency response as referenced in Part 4.7 of this Manual.

Weather/ flooding forecast		Response																																		
Natural Resources Wales (NRW) Flood alerts and warnings	Met Office Severe Weather Warning Service	Suggested Carmarthenshire County Council response	Expected multiagency and LRF response																																	
 <p>FLOOD ALERT FLOODING IS POSSIBLE. BE PREPARED.</p>	<table border="1"> <tr><td rowspan="4">Likelihood</td><td>High</td><td></td><td>✓</td><td></td><td></td></tr> <tr><td>Medium</td><td></td><td>✓</td><td></td><td></td></tr> <tr><td>Low</td><td></td><td></td><td></td><td></td></tr> <tr><td>Very low</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>Very low</td><td>Low</td><td>Medium</td><td>High</td></tr> <tr><td colspan="6">Impact</td></tr> </table>	Likelihood	High		✓			Medium		✓			Low					Very low							Very low	Low	Medium	High	Impact						Consider the need for a Bronze Group	Consider a multiagency Teams meeting
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 <p>FLOOD WARNING IMMEDIATE ACTION REQUIRED FLOODING IS EXPECTED</p>	<table border="1"> <tr><td rowspan="4">Likelihood</td><td>High</td><td></td><td></td><td>✓</td><td></td></tr> <tr><td>Medium</td><td></td><td></td><td>✓</td><td></td></tr> <tr><td>Low</td><td></td><td></td><td>✓</td><td></td></tr> <tr><td>Very low</td><td></td><td></td><td>✓</td><td>✓</td></tr> <tr><td></td><td></td><td>Very low</td><td>Low</td><td>Medium</td><td>High</td></tr> <tr><td colspan="6">Impact</td></tr> </table>	Likelihood	High			✓		Medium			✓		Low			✓		Very low			✓	✓			Very low	Low	Medium	High	Impact						Consider the need for a Bronze and Silver Group	Consider a multiagency Teams meeting and Tactical Coordinating Group (TCG)
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 <p>SEVERE FLOOD WARNING SEVERE FLOODING. DANGER TO LIFE.</p>	<table border="1"> <tr><td rowspan="4">Likelihood</td><td>High</td><td></td><td></td><td></td><td>✓</td></tr> <tr><td>Medium</td><td></td><td></td><td></td><td>✓</td></tr> <tr><td>Low</td><td></td><td></td><td></td><td>✓</td></tr> <tr><td>Very low</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>Very low</td><td>Low</td><td>Medium</td><td>High</td></tr> <tr><td colspan="6">Impact</td></tr> </table>	Likelihood	High				✓	Medium				✓	Low				✓	Very low							Very low	Low	Medium	High	Impact						Activate a Bronze, Silver and Gold Group	Activate a Tactical Coordinating Group (TCG). Consider a Strategic Coordinating Group (SCG)
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Where roads are flooded by extremely high tides, adjacent watercourses breaching their banks or from surface water from adjacent land, it may be necessary to ensure public safety by closing roads until the flood waters recede and allow the roads to safely be reopened again.



Unclassified Road U4172 Cynghordy, September 2023.

The highways authority is responsible for the management of water that naturally falls onto the highway surface. Our main focus is to remove surface water from the highway as effectively as possible to reduce the risk to motorists. The regular cleaning of road gullies and the management of interconnecting pipes and culverts is a key method of reducing the risk of water standing on the road surface. The methodology for this is set out in Section 4.5. The risk of gullies blocking due to fallen leaves is at its greatest during the autumn.

In advance of forecast periods of high rainfall Highway Teams will check known flood risk locations on the network to remove any obvious blockages in addition to advance clearing of trash grids on priority flood risk assets.

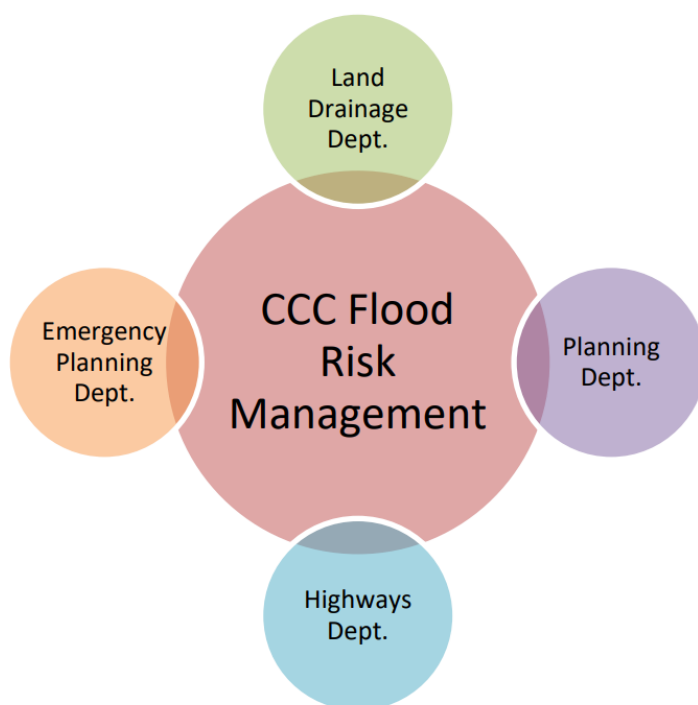
It is understood that an increasing intensity of rainfall is being experienced more frequently due to climate change. These periods of high intensity rainfall can quickly create a volume of surface water which is, for a period of time, above the capacity of the highway drainage systems. As a consequence, surface water ponding may occur for a time. This ponding will normally dissipate as the rainfall eases and the highway drains clear away the water, provided the receiving watercourse levels have receded.

Where the risk of property flooding is forecast the authority may use sandbags where they can be effective on a temporary emergency basis during flood events to redirect shallow water primarily in connection with or relating to its own highway and infrastructure assets. Property owners are encouraged to take practical steps to protect their property, and further details are contained in Carmarthenshires latest Sandbag Policy (see website).

Where appropriate sandbags will be deployed at strategic locations across the County immediately preceding a storm event. Statements will be issued by our Press Office when this occurs.

The Council should not be wholly relied upon to provide help and assistance during a flooding incident. However, there will be occasions where flooding is unexpected, or affects new areas, and the Council will help as far as its resources allow.

In more rural areas the highway drainage consists of drainage ditches alongside the roads. Roadside ditches are normally the responsibility of the adjacent landowner and should be regularly inspected and maintained by the landowner. The Highway Authority will normally have a right to discharge surface water into the roadside ditch or watercourse. Where necessary the Highway Authority may require the adjacent landowner to undertake maintenance works on a ditch to prevent a nuisance being caused on the highway (Adjacent Landowners and the Public Highway.gov.wales).



Flood risk management in Carmarthenshire

4.8.6 High Winds & Gales

High winds and gales can cause disruption on the highway network. Often this is due to trees, or tree branches, either from the highway verge or from adjacent land, being blown down and falling on the highway.

Highway verge trees are included within the scheduled highway safety inspection regime and diseased or unstable trees are identified and remedial works undertaken to remove the risk to the travelling public. Adjacent landowners should also have in place a regular inspection regime to ensure that their trees do not present a risk to the travelling public.

Where the Authority identifies trees on adjacent land which appear to be a risk to the highway the adjacent landowner will be required to take appropriate action. This does not absolve the landowner from their duty to inspect and maintain trees on their own land, including boundary trees which are the landowners responsibility.

In the event that trees fall from adjacent land onto the highway the Authority may be required to remove the obstruction and will recover costs from the landowner.

Where strong winds or gales are forecast the Highways operation is scaled-up to ensure sufficient resources are available to manage the event as far as is reasonably practicable. This will include as appropriate:

- Additional chainsaw gangs made available.
- Specialist tree sub-contractors made available to assist with clearance works.
- Additional plant to remove fallen trees from the highway.
- Additional traffic management available should roads need to be closed and diversions put in place.
- Ensure any highway construction sites are properly secured.



A484 Carmarthen to Cynwyl Elfed Fallen Tree

4.8.7 Extreme Heat

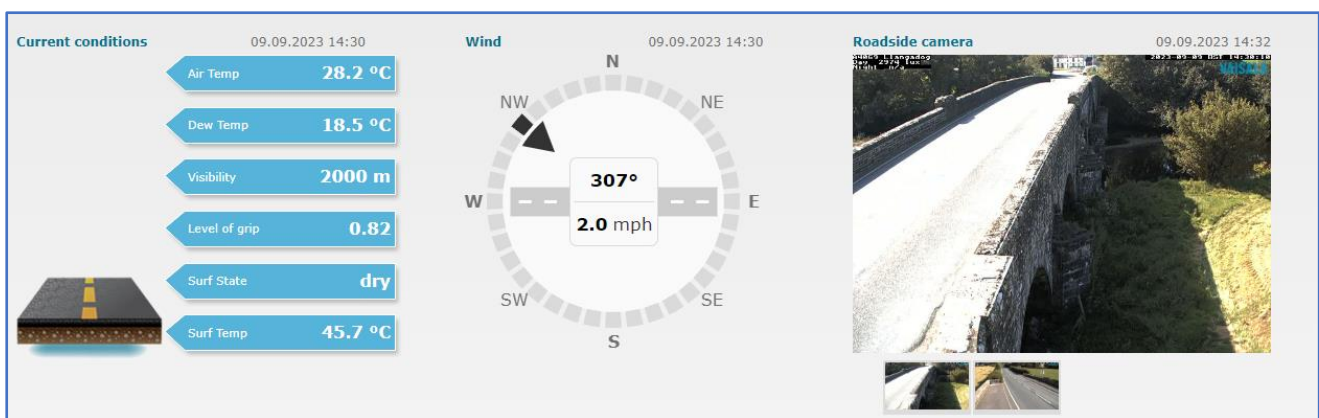
The impact of extreme heat on the highway asset is a relatively new but growing concern. In July 2022 the Met Office reported temperatures over 40°C recorded for the first time in the UK as thermometers in Lincolnshire reached 40.3°C and 46 weather stations across the UK exceeded the previous UK record of 38.7°C. This led to the Met Office issuing its first ever Red Warning for extreme heat.

It is also notable that of the 30 hottest days in the UK by area averages, 14 have occurred this century and the Met Office advise that climate change is making UK heatwaves more frequent, intense and long-lasting. Extreme heat events can have an adverse impact on road surfaces as the dark asphalt absorbs heat through the day and whilst air temperatures may be above 20°C, road surface temperatures can exceed 50°C.

The development of high temperatures in the asphalt surfacing can cause viscoelastic behaviour, thermal deformation and change the stiffness of the surface. These effects can also cause traffic loading to have a detrimental impact on the surface, such as by causing ‘rutting’ of the surface and, in addition to inducing cracking within the surface, reduce the skid-resistance which has a direct impact on vehicle stopping distances and hence road safety.

During extreme heat events highway surfaces are monitored and areas where surfaces become soft or appear ‘fatty’ or ‘polished’ remedial measures can be taken. Identified sites can be dusted with stone dust or sharp sand which may be dispensed through the gritter fleet. The application of small aggregates helps to restore the skidding resistance of the surface and protect it from direct sunlight as the aggregates settle and are tracked into the surface.

Prolonged periods of high temperature can also have an impact on the underlying subsoils causing materials to shrink and crack as they ‘dry-out’. These cracks can then be reflected up through the pavement to the surface of the road. Damage of this type will require a more invasive intervention to repair.



4.8.8 Winter Service Plan

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.

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.

Our duty (Highways Act 1980 S41 (1A)) is to:

'...ensure, as far as is reasonably practicable, that safe passage along the highway is not endangered by snow or ice.'

The phrase '*reasonably practicable*' is an important qualification which recognises that the duty is not absolute, Highway Authorities cannot treat an entire road network when adverse weather is forecast, and that Highway Authorities will need to adopt a balanced approach of reasonableness and practicability within the resources available.

All winter service operations on public highways within Carmarthenshire are predominantly undertaken by the County Council's Highways and Transportation Service within the Place and Infrastructure 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 with reciprocal cross-boundary arrangements in place on a small number of roads 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.

The County Council's approach to Winter Service recognises recommendations contained in the national Code of Practice *Well Managed Highway Infrastructure* and the detailed guidance provided by the National Winter Service Research Group '*A Practical Guide for Winter Service*'.

One of the key risks for road users during the winter is that of ice forming on the road surface. Water will freeze to form ice at 0°C but the presence of road salt in the solution lowers the freezing point to prevent ice forming. When temperatures fall below -7°C the salt becomes less effective.

A key element of the Winter Service is based on the efficient spreading of salt on the road surface ahead of freezing temperatures. This is undertaken by a fleet of gritting vehicles which are strategically based across the County. Approximately 140 tonnes of salt can be spread onto the Primary Network on a single treatment. The County Council is mindful of its sustainability obligations, financial responsibilities and safety duties and aims to ensure that gritting treatments are efficient, effective and necessary in relation to forecast weather conditions.

The gritting fleet are equipped with GPS tracking devices to enable accurate monitoring of their location on the gritting route and track which roads have been treated. Gritting route navigation devices are fitted to vehicles to improve driver information and routing. Precautionary treatments are normally completed in less than 3 hours for each route and at least 1hr in advance of forecast road hazards forming.

Every endeavour is made to ensure that roads on the Primary Network are treated ahead of ice and snow being

forecast. This treatment provides a de-bonding layer to minimise the adhesion of snow and ice to the carriageway surface and helps to make any necessary snow clearance more efficient. All of our gritter fleet can be fitted with snow ploughs, should snow clearance be required, and our operations will have a key focus on the strategic highway routes.

Further details can be found on the Councils webpage which will be updated at the start of each winter season.

4.8.9 Winter Service Management

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

Job Title	Delegated Management Role
Highways and Transportation Services Manager	Winter Service Direction
Highway Services Manager	Winter Service Operations
Highways Asset Manager	Planning and Systems management
Highway Duty Officers (x9 - Rota)	Daily winter action decision making & monitoring
Winter Service Supervisors (x18 - Rota)	Supervision of gritting operations

The County Council also provides a service to Welsh Government in treating selected Trunk Roads. The gritting action for the Trunk Road Agency is distributed via email to the County Duty Officers each day. The gritting action for County roads are normally entered by the Duty Officers onto the management system's 'Decision board' before 14.00 hours each day. A log of the daily action is then 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.

The levels of winter service 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 formation
4	Pre-salt with plough - Applications of salt for dealing with snow conditions, combined if necessary with snow ploughing

In a major adverse weather event, the County Councils Emergency Planning protocols may be brought into operation (Section 5.4 Carmarthenshire Emergency Response Plan).

4.8.10 Service response

The Winter Service is dependent on the efficient and effective 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.

From the 1st October to the 30th April each year, the County Council subscribes to a specialist roads weather forecasting service. This service is generally procured via an all-Wales framework contract and provides a common weather forecast service across neighbouring regional authorities including Pembrokeshire, Ceredigion, Powys, Swansea and Neath Port Talbot. The service takes the form of a rolling 36-hour forecast normally transmitted daily at 12 noon, supplemented by morning and evening updates and a rolling longer range 2-10 day forecast which is updated daily. The service also provides out of office hours forecaster consultancy facilities.

Forecasts are provided on an individual route by route basis allowing Duty Officers to access up to date route-based forecasts and detailed weather information via a web-based management system.

During evenings and weekends the Duty Officer will be alerted directly by the 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.

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

MARGINAL PERIOD – Severe weather not expected	End of September to start of October and mid April to end of April
LOW PERIOD – Severe weather may occur	End of September to start of October and mid April to end of April
HIGH PERIOD - Severe weather reasonably expected	Middle of October to end of March

A stand-by Duty Officer will be on duty each day throughout the 'High period' (Mid-October to end of March) 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.

Duty Officers are required to review the weather forecasts received and determine the appropriate action to be taken with reference to the prevailing weather and road conditions. The treatment decisions are cross-referenced as updated forecasts are received. The required treatment on a particular route is selected in accordance with the forecasters predicted road hazards and in line with spread rate guidance published by the National Winter Service Research Group (NWSRG).

Duty officers will also be informed in their operational management and decision making by data provided by the weather stations located within the County and may take account of existing salt levels on the road surface (following periods of repeat gritting). The information from the weather stations is interrogated by the Duty Officer via a hosted web bureau service. The weather stations also include cameras to provide live images of actual road and weather conditions.

The Duty Officer will be mindful of the duty to manage risk whilst also making best use of resources. Duty Officers will also be aware that the over-use of salt may have a detrimental impact on the environment.

The County Council works closely with the South Wales Trunk Road Agency and the Western Area Partnership (WAP) to treat the Trunk Roads within Carmarthenshire. Forecasting and decision making for winter treatment of Trunk Roads 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 and Pembrokeshire County Council Gritters as part of the WAP.

4.8.11 Training

Our Winter Duty officers are experienced in winter service provision and are subject to regular training and review. All Duty Officers undergo initial training with our specialist weather forecasters to ensure a sound understanding of winter weather, road hazards and the use of precautionary treatments before building on their knowledge through a period of shadowing experienced Duty Officers. Refresher training is carried out at 3 yearly intervals for all Duty Officers.

Duty Officers have access to a wide range of on-line resources and are provided with guidance on a the main types of issues that may be encountered out of hours. A detailed Duty Officer Guidance document is provided and updated on a regular basis. The document contains up to date operational guidance including advice on appropriate salt spread rates as recommended by the National Winter Service Research Group (NWSRG).

All gritter drivers are trained to achieve a City and Guilds qualification in Winter Service Operations.

4.8.12 Winter service treatment routes

In common with the County Council's approach to other adverse weather events, the response to winter weather is managed proportionally in response to the severity of the expected weather conditions, or the actual weather being realised, and the risks presented.

Our approach to the selection of treatment routes accords with the National Code of Practice and is founded on a risk-based approach as set out in Part 4.1 and 4.2 of this Manual. This approach utilises the adopted Highway Network Hierarchy to guide all aspects of highway management and maintenance and ensure that finite resources are directed towards areas where they are most needed to minimise the risk to the travelling public.

Carmarthenshire County Council has adopted the following treatment networks:

Primary Network	A network of strategically important routes. These routes will normally be treated in advance of forecast freezing temperatures and will be the key focus during adverse weather.
Secondary Network	A supplementary network of secondary routes which support the Primary Network. These routes will only be treated during prolonged or severe winter weather, if resources permit, after the Primary Network is treated.

Resilience Network	A reduced 'core' strategic network. Winter Service operations will be reduced to focus on a Resilience Network for treatment if resources or weather conditions are such that the continued treatment of the Primary Network is unsustainable.
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Note: The above routes are treated in addition to Trunk Roads and Motorways.

Primary Network

Carmarthenshire's Primary Network for winter service is derived from the road network hierarchy, prioritising the busiest and most critical routes. This consists of CHSR, CH1 and CH2 routes and where necessary are extended to include critical facilities as shown below:

Road Hierarchy	Descriptor	Type of road	Description (approximate daily traffic volume)
CHSR	Strategic Route	Trunk and some Principal 'A' class roads between Primary Destinations	Route enabling travel between locations of regional significance (Strategic routes are identified based on their importance regionally rather than their traffic volume).
CH1	Main Distributor	Major Urban Network and Inter-Primary Links. Short - medium distance traffic	Travel between locations (traffic volume 10,000 - 20,000)
CH2	Secondary Distributor	B and C class roads and some unclassified urban routes carrying bus, HGV and local traffic with frontage access and frequent junctions	Travel between locations (5,000 - 10,000)
Critical Facilities	<ul style="list-style-type: none"> • Hospitals and Ambulance Stations • Fire Stations • Main Police Stations • Key Public Transport Routes • Main Schools & Colleges • Train Stations and Bus Interchanges • Ferry Ports (Trunk) 		

Secondary Network

The County Council's Highways Team will have a main focus during adverse weather on the County's Primary Network. Following satisfactory treatment of the Primary Network, if weather conditions dictate and resources allow, treatment may be carried out on a Secondary Network which will include selected bus routes, routes to smaller villages, settlements and steep gradients.

In addition to the highway network, we may treat other key locations including main car parks. Treatment will be carried out as resources permit and in response to local priorities and emerging conditions. First priority will always be given to keeping trunk roads and Primary Network clear. Secondary routes largely consist of hierarchy level CH3 and many CH4 routes. Other roads may be treated as resources allow.

Resilience Network

The resilience network is defined as a reduced strategic network which will be treated if resources or weather conditions do not allow the continued treatment of the entire Primary Network. Restricted resources may include fuel, salt/grit, vehicles or personnel. Priority will be given to maintaining treatment of the Trunk Road network on behalf of Welsh Government and the South Wales Trunk Road Agency.

On the directions of the Director of Place and Infrastructure, in extreme circumstances it may be necessary 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, or other factors that disrupt service provision.

4.8.13 Snow Events

During severe and prolonged snowfall conditions normal highway operations are generally suspended to divert additional resources to clearing roads. Priority is always given to Trunk roads and Primary routes and with a focus on strategic facilities and population centres. Maintaining access to Emergency, medical and welfare centres are a priority. Secondary routes may be treated where resources allow, particularly during prolonged snow events. Additional resources may be deployed to assist the highways teams during severe conditions on the direction of the Departments Director or Chief officers. Resources may include:

- Redeployment of staff from other services including Refuse, Grounds maintenance and Public rights of way.
- Framework contractors – Operatives and plant support

4.8.14 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.

4.8.15 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. Traffic in Car parks is generally traveling at lower speeds compared to traffic on the main routes and restricted resources limit our ability to provide precautionary treatment. Where conditions dictate and resources allow, we may treat Car parks as part of Secondary routes.

4.8.16 Grit bins

Across the county we have around 1,100 grit bins located in known trouble spots such as steep hills and bends

prone to icy conditions and not normally treated as part of the primary routes. There is a limit on resources and currently we are unable to provide additional grit bins on request. We do work with town and community councils and residents' associations to review the locations of grit bins. We inspect and fill all of our grit bins in the autumn. If there is snow, the bins will only be re-filled if staff and equipment become available to undertake the work.

Residents are advised that the salt should be used very sparingly, as it does not aid grip but is supplied to assist in preventing the formation of ice and melting of snow. It is provided for use only on public roads and pavements and should not be used or transported anywhere else. We do not refill grit bins on demand.

4.8.17 Railway level crossings

On request of Network Rail, our gritters are instructed to suspend the application of salt 12m either side of any level crossings.

"For railway purposes salt must not be used to clear level crossing surfaces due to the risk of wrong sided track circuit failures.

4.8.18 Winter Service Resources

Plant and Vehicles

The authority has in place its own fleet of specialist vehicles and salt spreading equipment. Vehicles are in readiness each winter allowing rapid deployment and spreading of salt on the highway when required. The fleet is managed and maintained with vehicles replaced when funds permit, with investment in state-of-the-art equipment to ensure accurate and efficient spreading of road salt.

Typically, the fleet consists of around 19 vehicles, these may be Swap body or Unibody gritters. In addition, the authority has a tractor mounted snowblower which may be deployed during severe conditions.

Operational personnel

The authority has a significant pool of staff resources in place each winter to provide a 24hr operation when required. Typically, we have around 78 operatives fully trained at the start of each winter season, however this number may fluctuate each year in line with required service levels.

In addition to gritter drivers, the authorities fleet management team are in place to support the highways division in the maintenance and upkeep of its gritting fleet, providing servicing and attending to faults and breakdowns. Approximately 8 trained mechanics are in place throughout the season.

Salt Stocks

Local Authorities are directed by Welsh Government to hold in store a minimum salt stock at the start of the winter season to ensure each highway authority can provide a resilient response to prolonged winter weather. This is calculated on a 1.5 times multiple of a 6 years average use. Carmarthenshire County Council normally

holds approximately 12,600 tonnes of salt in stock at the start of the season, most of which is stored under cover in salt barns. Our aim is to then replenish stock levels to maintain a capability and resilience in coordination with Welsh Government and other local authorities across Wales. Carmarthenshire uses 6mm rock salt purchased through the Welsh Governments all Wales framework tender for salt supply and is part of the Wales Salt Cell which determines deliveries to local authorities on a priority basis during difficult times.

County Road Salt Storage capacities are as follows:

Depot Location	Type of Storage		Total (tonnes)
	In Barn (tonnes)	Sheeted stockpile (tonnes)	
Carmarthen	2500	400	2900
Cross-Hands	5700		5700
Llandovery	4000		4000
Total	12200	400	12600