Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Winter Service Plan

[INSERT TII Ref. No.]

Winter Service Plan
Template

Comhairle Cathrach & Contae Luimnigh
Limerick City & County Council

Date: 16/10/2024

Contents Table

Preface

Instructions for Use

Local Authorities are required to prepare and complete the Winter Service Plan using the Winter Service Plan Template contained within AM-PAV-06051 Winter Service Manual. The Winter Service Plan Template contains:

a) text in black which must not be changed; and

b) text in grey shading which shall be used to guide the Local Authority in its completion dependent on the resources and approach taken by the Local Authority in order to deliver the winter service.

A Word version of this template is available at: https://www.tiipublications.ie/downloads/

Introduction and Purpose

This Winter Service Plan describes the policy, objectives, procedures and operational arrangements for the delivery of winter service and details the alert procedures and actions in the event of winter weather on sections of the national road network within the administrative area of Limerick City and County Council. The document serves a number of more specific purposes:

Policy Document

The Winter Service Plan sets out TII's policy and objectives in the context of Local Authority winter service delivery.

The Winter Service Plan outlines the key objectives of TII and the responsibilities of the Local Authority in the management and delivery of winter service on the national road network, including the monitoring and reporting of salt stock levels.

Quality Plan

The Winter Service Plan forms part of the Local Authority's Integrated Management System.

Contingency Plan

The Winter Service Plan is linked with the Local Authority's and TII's wider Network contingency objectives.

It is a policy of Limerick City and County Council to provide a Winter Maintenance Plan, which as far as reasonably possible, allows the safe movement of vehicular traffic on declined routes of the road network, while minimising delays and accidents directly attribute to adverse weather conditions in accordance with the Winter Maintenance Plan.

It is a policy as is reasonably practicable to eliminate the hazards that give rise to safety, health and welfare risks for employees and those who may be affected by their activities, where this is not possible, implement control measures that will manage the hazards and risks, that may arise, so as to prevent injuries at work. It is a policy to protect employees and others who may be affected from or by the hazards and risks associated with the undertaking of the winter maintenance.

Environmental Policy

Limerick City and County Council will ensure the implementation of the policy of Government under Ireland's transition to a Carbon Neutral Future by 2050 with the adoption of a Limerick Mitigation Plan 2030 to complement implementation of the Limerick Adaptation Strategy 2019-2024.

Develop green infrastructure at local level and promote the use of nature-based solutions for the delivery of a coherent and integrated network. Move towards no net loss of biodiversity through strategies, planning, mitigation measures, appropriate off setting and/or investment in Blue-Green infrastructure. Promote and support environmental awareness and resource efficiency practices to ensure a healthy living environment for all citizens and effective resource use for future generations. Support, facilitate and incentivise the move towards a circular economy, develop resource efficiency programmes and reduce the consumption of single-use items

Health and Safety Policy

It is a policy of Limerick City and County Council to protect, as far as reasonably practicable, the safety, health and welfare of all its employees and of anybody who maybe affected by its activities. The Council will conduct its activities in a way that complies with the Safety and Welfare at Work Act 200, and associated regulations, and any other legal or other requirements.

All reasonable measures will be taken to avoid risk, including the provision of a properly designed and maintained safe place of work, safe systems of work, safe plant and equipment. The council is committed to the identification of hazards and to their elimination, or reduction where practicable. The council will provide training and information to employees and personal protective clothing and equipment as required. The principles of prevention shall be applied in the design, construction and maintenance of all activities and places of work. The Council is committed to meaningful consultation, communication, participation, and the prevention of ill health.

Management, supervisory employees, safety representatives and all other employees are responsible for implementing this general policy. All employees are required to carry out their duties in accordance with the Councils safety Management system. All employees, contractors and sub-contractors shall co-operate with and implement this health and safety policy. The Council will continuously improve its safety management system by setting work programmes with objectives, in addition, the safety management system will be regularly monitored.

Energy Management Policy

Limerick City and County Council is committed to making efficient use of energy throughout all of its corporate resources and services for the purpose of preserving natural resources and reducing carbon emissions in the context of climate change.

Management will lead and promote energy efficiency programs which are appropriate to the nature and scale of the organisation's energy use.

The organisation is committed to continual improvements in energy performance through the setting of objectives and targets. Management will ensure the availability of the necessary information and resources to achieve these objectives and targets.

Management is committed to complying with all legal and other requirements that the organization subscribes to and which relates to energy use and efficiency, as well as supporting applicable national programs.

Investment in energy products and services will be supported, along with designs for energy performance improvement.

Energy Awareness will be communicated to all levels within the organization by providing transparent information regarding the organization's energy use, objectives, targets and actions.

Necessary updates and regular reviews of this policy will be implemented while ensuring this policy is well documented at all levels within the organization.

DOCUMENT CONTROL AND DISTRIBUTION

Document Owner

Document Owner	[redacted]

The owner is responsible for maintenance, upkeep and amendment

Document Control

Document Issue and Revision Record				
Issue	Revision	Date	Issue/Revision Description	Approved
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Distribution

Document Distribution		
Copy Number	Name	Organisation
	[redacted]	Limerick City and County Council
	[redacted]	Limerick City and County Council (Operations West)
	[redacted]	Limerick City and County Council
	[redacted]	Limerick City & County Council (NCW Machinery Yard)
	[redacted]	Limerick City & County Council (NCW Machinery Yard)
	[redacted]	Limerick City and County Council (Merchants Quay)
	[redacted]	Dooradoyle
	[redacted]	Dooradolye
	[redacted]	Dooradoyle
	[redacted]	Kilmallock Area Office
	[redacted]	Rathkeale Area Office
	[redacted]	Dooradoyle
	[redacted]	Dooradoyle
	[redacted]	Dooradoyle

	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]

1. Introduction

1.1 General

This section of the Winter Service Plan outlines the scope of the services provided, responsibilities for provision of those services and details the extent of the national road network on which the service is provided.

[Limerick City and County Council] shall ensure that the operational activities contained in this plan dovetail with *[the local authorities based in Clare, Cork, Tipperary and also the MMARC].*

The purpose of this document is to identify the processes, procedures and key personnel employed by Limerick City & County Council, to deliver the winter service on **Priority Routes** for County Limerick and to ensure the safe movement of vehicular traffic and keep to a minimum delays caused by adverse weather. It is desirable that these routes be kept serviceable in the normal winter weather conditions, ***as far as reasonably practicable.***

The scope of the plan deals with all National Roads (excluding those treated by the TII Network B Maintenance Contract, Network A Maintenance Contract & the Tunnel PPP Operator M20, M7, M8, N18 and a portion of the N21), a number of strategic Regional Routes and a number of strategically important Local Roads – categorized in Priority 1, 2 and 3 terms and covering a total of in excess of 700km throughout the County. Refer to Appendix H for a copy of the route treatment map

1.2 Policy

It is the policy of Limerick City & County Council to provide a winter service plan, which, as far as reasonably possible, allows the safe movement of vehicular traffic on the more important defined routes of the road network, while minimising delays & accidents directly attributed to adverse weather conditions in accordance with the priorities set out below as resources permit.

Current practice is to endeavour, within the limited resources available, to maintain major traffic routes in a PASSABLE CONDITION.

The desired level of service may not be achievable at all times. Even where the weather forecasting is predicted properly the freezing point may be a number of hours earlier or later in arriving than predicted. It cannot be guaranteed that the network will remain in an ice or frost free state. The primary responsibility for road safety remains with the driver of the vehicle. Road users cannot assume that all roads are free of ice at any stage and must be themselves responsible for ensuring that they drive or use the road with proper care and attention to their own actions.

Limerick City & County Councils Policy and Procedure for Management of Winter Maintenance is provided in Appendix F of to this document

The desired level of service may not be achievable at all times. Even where the weather forecasting is predicted properly the freezing point may be a number of hours earlier or later in arriving than predicted. It cannot be guaranteed that the network will remain in an ice or frost free state. The primary responsibility for road safety remains with the driver of the vehicle. Road users cannot assume that all roads are free of ice at any stage and must be themselves responsible for ensuring that they drive or use the road with proper care and attention to their own actions.

Limerick City and County Council shall ensure that total width of carriageways on the national road network within its administrative area are kept free of frost, ice and snow as far as is reasonably practicable.

The total width of carriageways can include:

main carriageway lanes

c) slip roads

d) hard shoulders

e) hard strips

f) turning lanes

g) roundabout carriageway lanes

h) link roads

i) bus lanes

j) central reserve crossovers

k) overbridge roads

l) underbridge roads

m) lay-bys

n) footways

o) integrated cycleways

p) footbridges

q) bus bays

Limerick City and County Council shall prevent frost, ice or snow forming on or bonding with the pavement surface using precautionary (anti-icing) treatments. Ice shall be defined as frozen water from any source on the carriageway surface.

In the event of *[Limerick City and County Council]* failing to prevent ice or snow forming on or bonding to the pavement surface, reactionary (de-icing) treatments shall be undertaken.

1.3 Performance Levels

With approximately 4,000 km's of roadway in County Limerick, it would be unrealistic to expect that every road and pedestrian area in the county can be treated. Therefore, priority has to be given to National Route system (Priority 1), which carries the most intensive volumes of commuter traffic and (Priority N) which deals with the treatment of National roads only when conditions are identified as a low risk. Every effort is made to ensure that this network is maintained open for traffic at all times, in spite of weather conditions. In extreme weather conditions i.e. a continuous spell of sub-zero temperatures, attention is also given to regional and local road networks on the basis of need and the availability of resources.

Routes to be provided with a winter service have been prioritised into three classifications in accordance with the TII Draft Winter Service Manual

Route Designation	Description	Level of Service
Priority 1	Those routes which are essential to be kept serviceable in all weather conditions, ***as far as reasonably practicable*** The aim is to treat the national road network and strategic locations on the public road network. See Priority 1 Route Map in Appendix H.	To be treated during all-weather events
Priority 2	Those routes which are desirable to be kept serviceable in the normal winter weather conditions, ***as far as reasonably practicable.*** See Priority 2 Route Map in Appendix H.	To be treated as part of the normal winter service but may have interruptions to treatment in certain severe weather events.
Priority 3	Routes that could be kept serviceable once Priority 1 and 2 routes have been treated, if resources allow.	Not treated as part of the normal winter service but may receive intermittent treatment during certain severe weather events

Priority N	National routes treatment only to be carried out if identified as a low risk	N69,N20,N21,N24, To be treated during all weather events. It is the intention of the Authority to treat National Routes only in the event of the forecast being marginal. This is an increased level of service required by TII that will operate four vehicles from two salt depots

Treatment Route	Priority 1	Priority 2	Priority 3	Priority N
Mobilisation Time	1:30 hr	1:30 hr	When possible	1:30hr
Treatment Time	1.5 hr	2.5 hrs	When possible	2 hr

The performance levels for precautionary (anti-icing) and reactionary (de-icing) treatments are defined in the table below. In the event of *[Limerick City and County Council]* failing to prevent ice or snow forming on or bonding to the pavement surface *[Limerick City and County Council]* shall undertake reactionary treatments.

Location	Treatment Type	Event	Performance Level
Main carriageway lanes, slip road, hard shoulder, hard strips, turning lane, roundabout carriageway lanes, link roads, bus lanes, central reservation crossovers, overbridge roads, underbridge roads, lay-bys, bus bays	Precautionary Treatment (Anti-icing)	Frost	All national routes to be kept free of frost at all times as far as reasonably practicable, on the basis of need and the availability of resources.
		Ice (including Freezing Rain)	All national routes to be kept free of ice at all times as far as reasonably practicable on the basis of need and the availability of resources.
		Snow	All national routes to be kept free of snow at all times as far as reasonably practicable, on the basis of need and the availability of resources.
	Reactionary Treatment (De-icing)	Routes/lanes abandoned due to snow or ice.	24 hours to restore all surfaces following cessation of snow on the basis of need and the availability of resources. 24 hours to restore all surfaces after the formation of ice.
Footways, integrated cycleways and footbridges	Reactionary Treatment (De-icing)	Ice (including Freezing Rain)	Clear of ice within 24 hours **(where practical, depending on available resources and Met Eireann Guidance)**
		Snow	Clear of snow within 48 hours of cessation. **(where practical, depending on available resources and Met Eireann Guidance)**

By achieving the performance levels for winter service, Limerick City and County Council shall as far as is reasonably practicable ensure the conditions to allow the safe movement of traffic, other users and the public on the national road network and keep to a minimum incidents and delays caused by winter weather.

1.4 Preparation of the Winter Service Plan

It is the responsibility of the Winter Service Manager to prepare the Winter Service Plan and undertake the duties of the Winter Service Manager as set out in the TII Winter Service Manual. The Winter Service Manager may also act as a Decision Maker.

1.5 Weather Warning Systems

The decision makers will use a combination of the following weather warning systems to aid in the delivery of the winter service.

Weather Warning Systems
Public Service Severe Weather Warning from Met Éireann
General Met Éireann Weather Forecast or Alert
Warning from other agencies
TII's Road Weather Information System (RWIS)
Tidal surge warnings (e.g. Dublin Triton system)

1.6 Winter Service Definitions

The following weather definitions are provided:

Weather	Definition
Heavy Snow	More than 4cm per hour of snow for at least 2 hours
Blizzards/drifting snow	a. Moderate or heavy snow combined with winds of 50kph or more with visibility reduced to 200 metres or less or: - b. Drifting snow giving rise to similar conditions
Very heavy snowfall, blizzards or drifting snow	Expected to give depths of 15cm or more potentially resulting in widespread dislocation of communications. Blizzards are severe when visibility is reduced to near zero.
Freezing rain or fog / widespread icy roads	Any atmospheric condition or state which gives rise to the accretion of ice on road surfaces
Heavy rain	Expected to persist for at least 2 hours and to give more than 6mm of rain per hour
Strong Gales	Repeated gusts of 110kph or more over inland areas, with a risk to high-sided vehicles being blown over.
Storms	Repeated gusts of 130kph or more over inland areas, which could cause cars to be blown out of their lane on the carriageway.

Weather	Definition
Fog	The official definition of fog is visibility of less than 1000 metres. Whereas for a motorist; visibility of less than 200 metres is more realistic. Severe disruption to transport occurs when the visibility falls below 50 metres.

1.7 Winter Response Time

The Winter Response Time is defined as the time taken from the decision to begin the winter service response or snow clearance until the winter service vehicles are loaded, manned and ready to leave the Depot.

- The Winter Response Time for Precautionary Treatment on national routes shall be a maximum of **1:30 hour.**
- The Winter Response Time for Reactionary Treatment including snow and ice clearance on national routes shall be a maximum of **1:30 hour**.

The Winter Response Time shall not apply when the decision to mobilise is taken in advance as part of a Precautionary Treatment but in any case, shall not exceed one hour.

1.8 Winter Treatment Time

The Winter Treatment Time is defined as the time taken from leaving the Depot through to returning to the Depot after completion of the Precautionary Treatment routes.

Reference to above table: Performance levels table

1.9 Winter Service Duties and Responsibilities

Winter service duties including precautionary salting, reactive salting, snow clearance and the management and maintenance of sufficient salt stock levels, are the responsibility of *[Limerick City and County Council]*.

Winter service duties including operational considerations, alert procedures and actions are the responsibility of Limerick City and County Council.

1.9.1 Role of TII

a) Setting the overall policy and objectives on the provision of winter services on the national road network and co-ordination of operations at a regional and national level at times of severe weather.

b) Overseeing operations management and performance.

c) Procurement of strategic salt supplies.

d) Provision of some TII provided depots.

e) Provision of some winter service vehicles and equipment to Local Authorities.

f) Provision of a Road Weather Information System (RWIS) to assist Local Authorities in deciding when treatment for frost, ice or snow is required on the national road network.

g) Liaison with the media

1.9.2 Role of Limerick City and County Council

a) Development of the Winter Service Plan.
b) Implementation of the Winter Service Plan and delivery of the winter service as defined in the plan.
c) Design of winter service treatment routes.
d) Liaison with weather forecasting services.
e) Day to day decision making and operational management.
f) Provision of all necessary winter service vehicles and equipment, excluding those detailed as being supplied by TII, to undertake and deliver the winter service.
g) Supply of plant, labour and materials.
h) Maintenance and operation of vehicles, depots and equipment.
i) Liaison with TII.
j) Reporting to TII.
k) Monitoring and reviewing performance.
l) Monitoring salt stocks (and stocks of other appropriate materials).
m) Liaison with neighbouring Managing Organisations to promote a coordinated service.
n) Advising the general public.
o) Reporting to the general public through the elected council.
p) Liaison with the media

1.10 Network

1.10.1 Description of Network

With approximately 4,000 km's of roadway in County Limerick, it would be unrealistic to expect that every road and pedestrian area in the county can be treated. Therefore, priority has to be given to National Route system (Priority 1), which carries the most intensive volumes of commuter traffic and (Priority N) which deals with the treatment of National roads only when conditions are identified as a low risk. Every effort is made to ensure that this network is maintained open for traffic at all times, in spite of weather conditions. In extreme weather conditions i.e. a continuous spell of sub-zero temperatures, attention is also given to regional and local road networks on the basis of need and the availability of resources

1.10.2 Extent of Network

The extent of the National road network, Regional & Local is covered by this Winter Service Plan and is shown in the following tables, with the detailed Network Map included within **Appendix H** and Route Schedules

The key interfaces are defined in the Interface Drawings, which are included in the dwg.

National Roads Treated	Extents of National Priority Routes
[N20]	From X[551135] Y (648620)to X(553532) Y [625662]
N21	From X (550884) Y (648341) to X (509489) Y (623295)
N24	From X (561918) Y (655216) to X (583993) Y (640555)

N69	From X (554479) Y (655109) to X (507926) Y (647323)

Regional/Local Roads Treated	Extents of Salting Rotes 1-15. (Start and Finish Points)
N24, R507,R506,R505,L1124,L1125	M7 Off Ramp at Ballysimon to Abbington Junction L-1126, R506 Junction
R445, R503, L5173, L1116, L1114, L1113, L1121, L1117,L1118,L5173 L1170, L1171,L1112, L1115	Its Junction with the Groody Roundabout to Tipp County Boundary at Gooig. Killmurray to Old School House Road from its junction L1116 to L1114 Junction
N20, R516, R512,R515,R513	Atyflin Interchange at the N21/M20 Junction to R515 Knocklong Village
R510,R526,R511,R512	Junction with the M20 on/off Slip road merging point to R516 Bruff Village
L1228/1227, R524, N69,R518,R521	R521 Juntion with the L1228 to Newcastlewest
N21, R524, R523, R521,	Doonakenna, Abbeyfeale, Carrigkerry Village to Station road Junction
R510, N69, R526,R859, L1429, R526, R926,L1144, L1405, L51004, L1202, L6013, L6010, L1202, L1241, R518	Dock Road to L1250 Askeaton Village Junction with the N21 Limerick Bound Ramp
N21, R520, R518, R512, R522	Doonakenna to Newcastlewest
R513, R514, R505	Its Junction with N24 Bearys cross, to R506 &R505 mini Roundabout junction west of Cappamore village
R515,R662, R663,R639	Its Junction with R515 in Knocklong to Cork County boundary at Brackbaun Bridge.
R523, R521, Churchtown rd. Lower Maiden St, L1234, L1322, L13221, L1325, L1323	N21/R523 Junction,at Reens Pike, to Kerry county Boundary at Mountcollins Bridge
R524, R523, N21, R518,R520,R519	Kinnard to its Junction with the L1327 Abbeyfeale, to Murphys Cross N21
R445, R509, R512, L10294, R511, R526,L10459, L10381, L10377, L10376, R858, L10441,R527, R510, L10332, R527	Parkway roundabout to Garryglass Roundabout
L8078, L11445, R445, R464, L8080, L10001, L10487, R463, LL10152, R445, R463, R526, L10152, L10164, R858, R509, R527	County Boundary Clonconane to its junction with the R511 Roxboborough Road Upper William Street
R512, R517	R515 Junction Kilmallock Town To Cork County Boundary at Ahaphuca Bridge.

Description	From	To	Route Description	Plan
Prioritised Pedestrian Areas in Metropolitan Area			Bedford Row, Thomas Street	Priority 1
Pedestrian Areas & Main Streets in Metropolitian Area			Catherine St; Little Catherine St; Little William St; Cruises St; Todd's Row and Chapel St	Priority 2
Main Commercial Streets of Metropolitan Area			William St; Henry St; O'Connell St; Patrick St; Arthurs Quay & Francis St	Priority 2
Route to Colbert Train Station from pedestrian Areas			Shannon St; Roches St; Parnell St; O Connell St	Priority 2
Route to St Munchins Maternity Hospital			Sarsfield St; Ennis Road	Priority 2
Footpaths on Bridges in Metropolitan Area			Matthew Bridge, Sarsfield Bridge, Thomond Bridge, Shannon Bridge, Abbey Bridge, Baal's Bridge, O'Dwyers Bridge	Priority 2

The above table shall include details of all footways, bus lanes, bus bays and integrated cycleways to be treated.

1.10.3 Local Problem & Vulnerable Areas

Location	Problem	Special consideration and mitigation measures
N21 (Killarney Pole to Templeglantine)	Altitude, Incline & width of road	Road is treated twice by two vehicles travelling from the salt depot at start of routes

1.10.4 Network Features N/A

The local Authority is not serving any motorways and thus does not require treatment of emergency crossings

Road	Location	Type
[N999]		

2. Operations

2.1 Introduction

This section of the Winter Service Plan contains detailed operational procedures for delivery of winter services on the national road network and details the alert procedures and actions in the event of winter weather on the network and includes arrangements for liaison and co-operation with *[Clare, Tipperary, Cork County Council & MMARC neighbouring Managing Organisations]* to promote delivery of a consistent and co-ordinated service across all boundaries.

2.2 General Arrangements and Decision Making

2.2.1 Decision Maker (Definition of Roles)

Decision matrix for the Duty Engineer

<table>
<tr><th rowspan="2">Road Surface Temperature</th><th rowspan="2">Precipitation</th><th colspan="3">Predicted Road Conditions</th></tr>
<tr><th>Wet</th><th>Wet Patches</th><th>Dry</th></tr>
<tr><td>May fall below 1°C</td><td>No rain
No hoar frost
No fog</td><td rowspan="3">Salt before frost</td><td>Salt before frost (see note a)</td><td>No action likely, monitor weather (see note a)</td></tr>
<tr><td rowspan="5">Expected to fall below 1°C</td><td>No rain
No hoar frost
No fog</td><td rowspan="2">Salt before frost (see note b)</td></tr>
<tr><td>Expected hoar frost
Expected fog</td></tr>
<tr><td>Expected rain before freezing</td><td colspan="3">Salt after rain stops (see note c)</td></tr>
<tr><td>Expected rain during freezing</td><td colspan="3">Salt before frost, as required during rain and after rain stops (see note d)</td></tr>
<tr><td>Possible rain
Possible hoar frost
Possible fog</td><td colspan="2">Salt before frost</td><td>Monitor weather conditions</td></tr>
<tr><td colspan="2">Expected Snow</td><td colspan="3">Salt before snow fall</td></tr>
<tr><td colspan="5">The decision to undertake precautionary treatments will be, if appropriate, adjusted to take account of residual salt, surface moisture or prevailing weather conditions (precipitation).
All decisions should be evidence based, recorded and require careful monitoring and review.</td></tr>
</table>

Notes:

(a) Particular attention should be given to the possibility of water running across carriageways and other running surfaces e.g. surface water off adjacent fields after heavy rains, washing off salt previously deposited. Such locations should be closely monitored and may require treating in the evening and morning and possible other occasions. Ideally, the source of the

run-off should be diverted from the roadway. Further treatment must be agreed with the Duty Engineer.

(b) When a weather warning contains reference to expected hoar frost, considerable deposits of frost can occur. Hoar frost usually occurs in the early morning and is difficult to cater for because of the probability that any salt deposited on a dry road too soon before its onset, may be dispersed before it can become effective. Careful monitoring is required under this forecast condition which should ideally be treated just as the hoar frost is forming. Such action is usually not practicable and salt may have to be deposited on a dry road prior to but as close as possible to the expected time of the condition. Hoar frost may also be forecast at other times of the day, in which case the timing of salting operations should be adjusted accordingly.

(c) If under these conditions, rain has not ceased by early morning, crews should be called out and action initiated as rain ceases.

(d) Under these circumstances, rain will freeze on contact with running surfaces and full precautionary treatment should be provided even on dry roads. This is a most serious condition and should be monitored closely and carefully throughout the danger period.

It is worth noting that the MMARC and PPP operators do not follow the same decision criteria as detailed above. The routes under their control are treated once the temperature is forecasted is at 1 degree and below.

Winter Service Manager

- To ensure that the preparation of the Winter Maintenance Plan prior to the start of each winter season
- To undertake coordination with neighbouring local authorities and any relevant private operators on the Winter Maintenance Plan.
- To issue the Winter Maintenance Plan to the TII & DTTAS
- To ensure the preparation of a rota of suitably experienced duty engineers and send a final copy to the MET
- To ensure the preparation of suitably trained operatives identifying the availability of labour throughout the entire period.
- Ensure the Organisation of Working Time Act is managed for drivers & operatives.
- To ensure suitable plant equipment & salt supplies available, to undertake effective winter maintenance operations & manage any ordering
- To provide advice to the duty engineer
- To give direction and advice on any aspect of the Winter Maintenance Plan
- To liaise with the relevant Director, TII & DTTAS
- To provide factual information concerning the network to An Garda Siochána and the media.
- To ensure preparation of route treatment maps.
- To respond to public enquires or winter maintenance complaints that may arise
- Fill out returns
- Carry out an end of season review on issues that arose and submit a report to the Director.

Duty Engineer

- The Duty Engineer will be available outside normal working hours, this means anytime during the rostered period.
- The Duty Engineer will keep a log of activities, operation, decision making etc. and use the Road DSS Manager module so that a complete picture of decision making and operation can be inspected by TII if required.
- The Duty Engineer will supplement the information contained on Road DSS manager is requested.
- The Duty Engineer will access the Road DSS manger monitoring system on the hour or as required.
- Track the actual conditions over their area.
- Obtain updated or more detailed weather forecasts using MET Eireanns services.

  Use the Thermal maps to direct field operatives to the more vulnerable areas with emphasis on Precautionary Salting.
  The Duty Engineer has responsibility for producing the daily Winter Maintenance action plan using Road DSS. This plan includes routes, commencement times, spread rates and other ancillary instructions (e.g. hold off in showers, mount snow ploughs etc). This action plan should take into account the guidelines in TII Circular.
- The Duty Engineer also has responsibility to maintain records including planned and actual route treatments; treatment times; changes to proposed treatments; other events e.g. notifications from the public, staff other agencies

2.2.2 Duty Rota

Duty rotas for all personnel involved in winter service operations

a) Role	Name	Title	Phone No
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

The Decision Maker Duty Rota is included in table A.11 and Appendix B

2.2.3 Guidance

Limerick City and County Council shall take account of relevant TII's advice, guidance and standards.

2.3 Weather Forecasting and Road Weather Information System

2.3.1 General Arrangements

[Limerick City and County Council] obtains weather forecasting service from TII's Road Weather Information System (RWIS) *[Visala & met eireann]*. The services provided are *weather data and forecasting software]*.

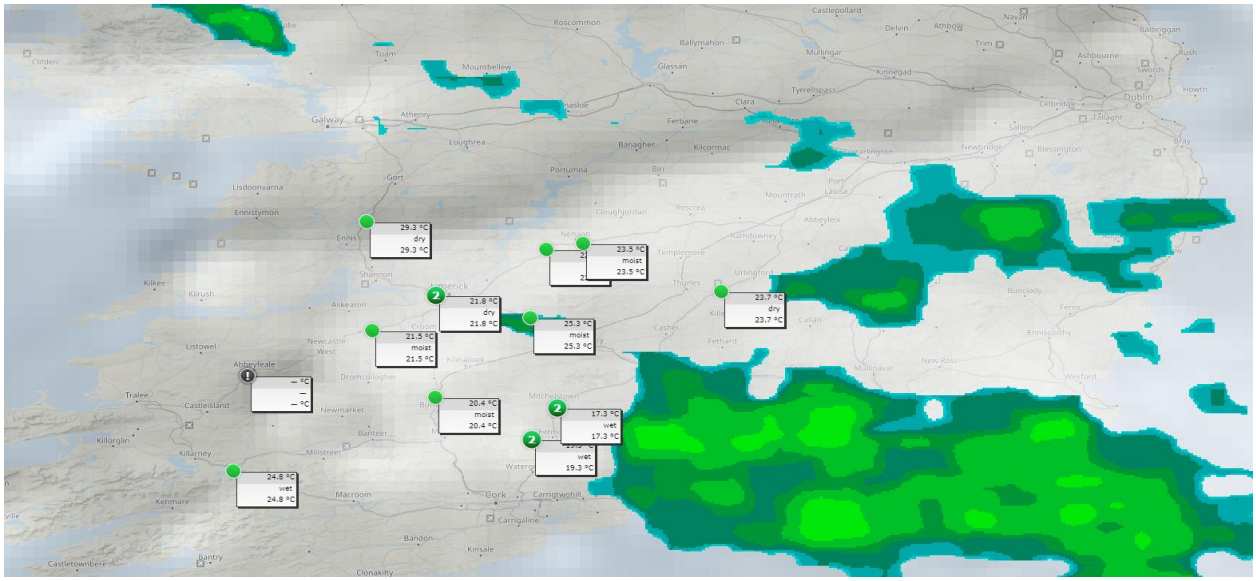
Include details of suppliers and services for weather forecasting.

Limerick City and County Council shall notify TII of any faults or suspected faults on the RWIS at the latest by 9.00am of each day. **Contact details can be found in table A.9 and A.10**

2.3.2 Roadside Weather stations used by TII's RWIS on Network

N21 Croagh, N24 Pallasgreen, N18 Tunnel

Station Map



2.4 Escalation

Winter weather events shall normally be managed by *[Limerick City and County Council]*.

2.4.1 Establishment of Winter Service Desk

[Limerick City and County Council] shall establish a Winter Service Desk prior to the forecast commencement of severe winter weather that could cause disruption to the national road network or as soon as practicably possible in the event of un-forecast snowfalls or severe weather.

The Winter Service Desk shall be established at Central Services Dooradoyle. The location shall be moveable to support remote working in the event of severe weather events and account for personnel changes in the rota.

The Winter Service Desk/control room will have the ability to communicate directly with TII's RWIS, and neighbouring Managing Organisations and to listen to/watch local news/traffic media in order to plan and manage *[Limerick City and County Council]*'s operational response to the severe weather event.

The Winter Service Duty Engineer shall implement and co-ordinate all winter service responses. The Winter Service Duty Supervisor at each Depot shall co-ordinate the resource allocation to the specific actions required

Where decisions, and their implications, require oversight they will be referred to *[Limerick City and County Council]*'s on-call Decision Maker.

The Winter Service Desk duty rota is included in table A.11 and Appendix B

2.5 Liaison and Communication

2.5.1 Notification of Treatments

[Limerick City and County Council] shall undertake reporting of key events via the TII RWIS decision recording and reporting tools, including reports on severe weather occurring or being forecast on the national road network.

Each day during the winter season, *[Limerick City and County Council]* shall submit a daily action report to TII, setting out the following details:

a) action taken over the previous 24-hour period including any decisions not to treat

b) decisions not to change from previous plans or deviations from previous decisions

c) the predicted action to be taken over the next 24-hour period

[Limerick City and County Council] shall notify TII, An Garda Síochána (where required), adjacent road network maintainers and local road authorities of all proposed winter service actions to be taken during the winter season, once known, but not later than 16:00 each day.

[Limerick City and County Council] shall notify TII, An Garda Síochána (where required) and neighbouring Managing Organisations of all proposed treatments once known, but not normally later than 16:00 each day.

[Limerick City and County Council] shall, as soon as practicable and within 1 hour, notify TII, An Garda Síochána, neighbouring Managing Organisations of other actions including changes to planned treatments, reactive treatments and snow clearance.

The above requirements shall be satisfied via the TII RWIS road maintenance route planning, operations and diary functions.

A comprehensive external contact list can be found in table A.10 and Appendix A

2.5.2 Daily Reports

Before 11:00am each day, *[Limerick City and County Council]* shall provide a daily operational report to TII detailing the treatments carried out over the last 24 hours, any relevant issues that have arisen during that period.

The above requirements shall be satisfied via the TII RWIS road maintenance route planning, operations and diary functions.

2.5.3 Hourly Updates

When weather conditions on the national road network are such that the flow of traffic is hindered, *[Limerick City and County Council]* shall provide TII with regular updates describing the current condition of the national road network and detailing the ongoing and proposed winter service operations.

Daily Reports and Hourly Updates shall be satisfied via the road maintenance route planning, operations and diary functions of the TII RWIS unless agreement is reached with recipients for transmission by other means.

2.5.4 Media Liaison

In order to facilitate media liaison, *[Limerick City and County Council]* shall make available to TII such information as requested.

2.5.5 Internal Communication Arrangements

Internal communication is by *[telephone/email/sms]*.

The arrangements for backup communications are *Mobile/Visala/SMS]*.

A comprehensive internal contact list can be found in **table A.9**

2.6 Liaison with Road Projects

Limerick City & County Council will advise any Stakeholders carrying out works over the proposed Routes

Road	Location (e.g. junction to junction)	Type of project	Contact
[N20]	Future Projects	Future Projects	Mid West RDO
N21			
N24			
N69			

2.7 Records

Collection of good quality records is fundamental to defend against liability claims made in respect of winter service delivery. The table below demonstrates the detailed record information that Limerick City and County Council shall retain:

Information	Record Content	Format	Storage Media	Retention Period
Weather Forecast	Viasala/Met Eireann	Online/email	Vaisala	6 years following end of season
Actual Weather Conditions	Vaisala / Met Eireann	Online/email	Vaisala	
Reports received	Line Managers	Hard copy	Sharepoint	
Decisions made	Duty Engineers	Online	Vaisala	
Instructions made	Duty Engineers	Online/Text	Vaisala	
Confirmations	Duty Engineers	Online	Sharepoint	
Actions taken	Duty Engineers	Online/Text	Sharepoint	
Liaison and communications log	Duty Engineers	Txt/email	Sharepoint	
Telephone conversations including with forecast provider	Duty Engineers	Vaisala	Vaisala	
Material usage	Drivers. Engineer	Hard copy	Sharepoint/ NSMS	
Salt testing records	NSMS	NSMS	NSMS	
Weekly saturator output brine test results	n/a	n/a	n/a	
Fleet breakdowns	Fleet Manager/ Ass Fleet Manager	Online	Sharepoint	
Times taken to complete treatments	Drivers. Engineer	Hard Copy	Sharepoint/ NSMS	
Use of additional resources (including reserve fleet and mutual aid)	Duty Engineer	Email	Vaisala	
Road closures/blockages die to weather conditions	Duty/Area Engineers	Email	Sharepoint	
Complaints received relating to conditions due to weather	Duty Engineer/ Engineer/Sugar CRM	Sugar CRM	Sugar CRM/ Sharepoint	

Records shall be available for inspection in accordance with TII requirements.

2.8 Health and Safety

It is the objective of Limerick City & County Council Operations & Maintenance Services Directorate to ensure the health safety and welfare of all employees and persons affected by its activities.

The objective will be achieved by using the Operations & Maintenance Ancillary Health & Safety Statement and the Policy and Procedure for the Management of Winter Maintenance.

This Plan should be read in conjunction with these documents.

A document outlining Hazard Identification and Risk Assessment for Salting operations is provided in *Appendix* G to this document.

The Policy and Procedure for the Management of Winter Maintenance is provided in *Appendix F* to this document.

Limerick City & County Council operates a pre-treatment system based on forecasted weather conditions. Limerick City and County Council will take guidance from the Met Eireann Weather Warning Alerting Service & deploy staff to treat roads on the basis that it is safe and practicable to do so

2.9 Review

Details of review procedures, and end of season review.

Typical issues for the review may include:

Q4 2023 Meeting. Q1 2024 Meeting Q2 2024 Review Meeting.

Fleet Manager: Fleet Management

Assistant Fleet Manager Fleet Management

Duty Engineer: Winter Maintenance/ Event Planning/ Winter Service Manual adherence and Prep

Winter Service: Engineer Winter Service Manual adherence and Prep

Senior Engineer: Winter Service Manual adherence and Prep

- *response and treatment times,*
- *decision making,*
- *command and control,*
- *escalation and Winter Service Desk,*
- *liaison and communications,*
- *weather forecasting and ice prediction,*
- *actual weather conditions,*
- *operational issues,*
- *records,*
- *health and safety,*

- *human resources,*
- *vehicles and plant, including any breakdowns or periods of non-availability,*
- *de-icing materials,*
- *Depots and facilities, other issues e.g. traffic flow, neighbouring Managing Organisation's roads,*
- *areas for improvement.*
- *Identified problem areas on the national road network.*

2.10 Winter Service Timetable

The following table sets out key dates in the delivery of winter service.

Duty Roster

Key Date	Action
1st August or such later date in time which TII may approve.	Local Authority to submit draft Winter Service Plan to TII
1st September or such later date in time which TII may approve	All staff to be fully trained in winter service activities
Dependent on Certification Procedure	TII to review / acknowledge / request further information on draft Winter Service Plan
Dependent on Certification Procedure	If required, revised Winter Service Plan to be submitted to TII. The submission and revision of the Winter Service Plan should continue until the Plan is Acknowledged by TII
2nd Week in September	Plant and vehicles for Winter Service, including brine saturators and road fuel storage system to have completed any maintenance, be in place and operational
15th September or such later date in time which TII may approve	Winter Service Plan assumed operational after Acknowledgement by TII. In any event the Local Authority will start to deliver winter service in anticipation of receiving Acknowledged status with further revisions to Winter Service Plan until Acknowledged by TII
1st October or such later date in time which TII may approve	Local Authority to provide specified pre-season fuel and salt requirements
16th October	Winter season commences
Weekly from 1st October	Local Authority to report weekly to TII via the RWIS diary portal and on the National Salt Management System
Monthly from 1st October	Monthly report to TII via the RWIS diary portal
31st March	Finalise list of key issues to feed into winter service workshops and/or conferences arranged by TII
30th April	Winter season concludes
31st May	Annual end of year Winter Service report to TII

3. Resources

3.1 Introduction

This Section of the Winter Service Plan contains details of the resources available for delivery of winter services and the alert procedures and actions in the event of winter weather on the national road network including reserve and contingency arrangements.

3.2 Human Resources

3.2.1 Definitions

The following table defines the key personnel responsible for delivery of the services defined within this document.

Function	Title	Name
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]
	[redacted]	[redacted]

3.2.2 Training

Details and standards for:

- *Decision Maker*
- *Winter Service Manager*
- *Winter Service Duty Engineer*
- *Winter Service Supervisor*
- *Winter Service Operatives*

Winter Service Manager

The duties of this role are as follows:

- To ensure the preparation of the Winter Service Plan prior to the start of each winter season.
- To undertake coordination with neighbouring local authorities and any relevant private operators on the winter service plan.
- To issue the winter service plan to the TII & DTTAS
- To ensure the preparation of a rota of suitably experienced duty engineers and send a final copy to MET Eireann.
- To ensure the preparation of suitably trained operatives identifying the availability of labour throughout the entire period.
- To ensure suitable plant equipment & salt supplies are available, to undertake effective winter service operations & manage any ordering of salt.
- To provide advice to the duty engineer.
- To give direction and advice on any aspect of the winter service plan.

- To liaise with the relevant Director, TII & DTTAS.
- To provide factual information concerning the network to an GARDA SÍOCHÁNA & media.
- To ensure preparation of route treatment maps.
- To respond to public enquires or winter service complaints that may arise
- Fill out returns to TII & DTTAS.
- Carry out end of season review on issues that arose that submit the report to the Director.

Duty Engineer

The Duty Engineer will

- Be available outside normal working hours, this means anytime during the rostered period.
- Keep a log of activities, operation, decision making etc and use the Road DSS Manager module so that a complete picture of decision making and operation can be inspected by TII if required.
- Supplement the information contained on Road DSS manager if requested.
- Access the Road DSS manager monitoring system on the hour or as required.
- Track the actual conditions over their area.
- Obtain updated or more detailed weather forecasts using MET Eireann services.
- Use the Thermal maps to direct field operatives to the more vulnerable areas with emphasis on Precautionary Salting.

The Duty Engineer has responsibility:

- For producing the daily winter service action plan using RoadDSS. This plan includes routes, commencement times, spread rates and other ancillary instructions (e.g. hold off in showers, mount snow ploughs etc). This action plan should take into account the guidelines in TII Circular, refer to Appendix J.
- To maintain records including planned and actual route treatments; treatment times; changes to proposed treatments; other events e.g. notifications from the public, staff other agencies.
- To communicate the appropriate persons of the Daily Action Plan including the Cleaning Dept SEE.

Road Senior Supervisors and Superintendents:

The Road Senior Supervisor and Superintendents within an area has responsibility for ensuring:

1) Plant and equipment are available and maintained and where necessary alternative arrangements are made.
2) That Salt usage and requirements are reported on a daily basis to the Executive Engineer Central Services.
3) Staff are available and where necessary alternative arrangements are made.
4) The Organisation of Working Time Act is managed for drivers & operatives.
5) Salting is carried out on routes prescribed by the Duty Engineer.
6) Drivers are properly instructed as to the Daily Action Plan and the staff carrying out the plan.

7) To use his/her discretion within limits set by the Winter Service Policy; The Duty Engineer; salting on non prescribed roads if the conditions warrant it e.g. bus, heavy goods vehicle stuck, request from Gardai etc.

8) The Road Senior Supervisor is responsible for all operations within their depots (loading/unloading salt, washdown of trucks etc.). Should any incident occur within the depot they should inform the Area Engineer.

Generally during the week the above responsibilities can be carried out during normal working hours. For out of hours, at weekends and holiday periods it is intended that the arrangements that have applied for a number of years will continue to apply for the Road Senior Supervisors and Superintendents.

Winter Service Drivers:

Winter Service Drivers responsibilities include:

1) Ensuring the vehicle is clean and has sufficient fuel to complete the predetermined salting route.
2) Ensuring that the Romaquip salt spreader is refuelled and safely secured to the vehicle.
3) Ensuring that all safety features (including reversing camera, reversing alarms and flashing beacons) are operational and that hi-visibility strips on the vehicle and salt spreader are in good condition, clean and visible to approaching vehicles.
4) Ensuring the vehicle is equipped with a first aid kit and fire extinguisher.
5) Wearing appropriate PPE gloves, HI-VIS clothing, safety footwear, helmet etc. The driver and helper shall wear appropriate PPE (HI-VIS clothing) at all times, including when in the cabs of the vehicles.
6) Carrying out walk around vehicle check & report any faults to the machinery yard foreman. Ensure that all ratchet straps are in good condition & within test.
7) Ensuring GPS system is operational and switched on.
8) If they need to use their mobile phone pull into a safe roadside location. Do not use the mobile phone while driving.
9) Carrying driving license, CPC card, Safepass and appropriate CSCS cards.
10) Ensuring that all access steps are free of ice and snow.
11) Obeying the rules of the road.
12) Ensuring the vehicle is adhering to the legal weight limits of the road.
13) Driving the vehicle at the appropriate speed for the prevailing weather conditions.
14) When using snow plough, drivers must ensure that the bolts are tightened.
15) Undertaking dynamic risk assessments to additional hazards present when undertaking the works. A formal risk assessment record to this must be completed as soon as practicable.
16) Reporting any incidents that may occur with other drivers or the general public.
17) On completion of the gritting operation filling out a plant log and report any problems encountered.
18) The operation and maintenance of the Winter Service gritting, salting and snowploughing vehicle/associated equipment, including the loading of equipment and materials.
19) Pick up and drop off winter service equipment and plant as required at locations determined from time to time by the Council.
20) Assisting and accompanying other staff members in these activities
21) Relaying information regarding routes treated and details of same in log sheets.

22) Contacting the Senior Supervisor on commencement and cessation of the salting activities.
23) Complete *Appendix L* Winter Maintenance Report Sheets fully and submit to Senior Supervisor on return to work.
24) Should an incident occur while in the depot they driver should communicate it to the Senior Supervisor immediately. Should an incident occur while treating the routes the driver should contact the Machinery Yard Fleet Manager in the first instance followed by the Supervisor and Duty Engineer.

3.2.3 A.5

3.2.4 Driver Numbers

Limerick City and County Council has 40 qualified drivers for winter service operations on the national road network as detailed in **Appendix C.**

3.3 Depots and Facilities

3.3.1 Depots

A schedule of Depots covering the *[Limerick City & County Council]* national road network can be found in the Depots and facilities schedule which shall be included in **Appendix A.7.**

3.3.2 Fuel

The following table indicates the fuel type (including grade) and details of supply and storage arrangements including minimum stock levels, in accordance with the TII Winter Service Manual

Depot	Supplier	Fuel Type & Grade	Maximum fuel storage capacity (Gas Oil Litres)	Maximum fuel storage capacity (DERV Litres)	Minimum fuel storage (Litres)
[redacted]					

Limerick City& County Council shall monitor fuel stock levels regularly during the winter period. [Limerick City & County Council] shall adhere to the requirements of fuel storage and minimum stock levels as specified in the TII Winter Service Manual.

Include within the table below details of fuel supply contingency and pump maintenance arrangements.

Fuel is purchased as required for each vehicle using the low value purchase cards supplied by Limerick City and County Council. Each vehicle is filled daily to ensure maximum availability in the event of a fuel shortage or extreme weather event.

Depot	Contingency Arrangements	Pump Maintenance Arrangements
[redacted]		

3.3.3 Other Facilities

A schedule of other facilities that are available to service the national road network can be found in Appendix A.7.

Limerick City and County Council has the competencies to deal with all situations extending from prevention to dealing with extreme weather/climatic events and aftermaths.

A programme of training has extended to all operators involved in winter maintenance of both Priority 1 and 2 routes which involves the use of heavy unit gritters and mini gritter units. This has involved all drivers involved in Priority 1 units completing accredited training through national training centres. This has been extended to those involved in smaller units to the best available training though not accredited for personnel involved in Priority 2 routes only.

A roster will be prepared of all drivers including all Priority 1 & 2 drivers and an appropriately qualified standby for regular changeover and to provide adequate standby for intensive works during extreme weather condition

3.4 Vehicles and Plant

3.4.1 Available Resources

A detailed schedule of vehicles and plant including operational spreaders, ploughs, loading shovels, snow blowers and reserve vehicles can be found in Appendix A.5.

3.4.2 Reserve Vehicle Arrangements

Limerick City and County Council operates:

- One 9.0 M3 Demount Gritter on a 8 x 4 Rigid truck with plough brackets based in NCW MY
- Three 2.0 M3 Demount Mini Gritters based in NCW, Rathkeale & Ballyfruta as local spares
- Three Tractor mounted Snow Ploughs in Doonakenna, Kinard & Gotoon to the used by local tractor operators if required
- One 4 x 4 Utility vehicle with a front mounted al spreader (capacity 100 kgs) @ Metro Roads depot

3.4.3 Vehicle Maintenance Arrangements

Arrangements for recording and reporting defects are included here.

Spare parts for winter service machinery (Routes 1- 12 & 15) are stored in the Machinery Yard Newcastle West.

The person responsible for re-ordering is the Machinery Yard G/O Geoff Foley on instruction from the Acting Garage Foreman Tim Dore

All plant (Routes 1-15) is fully serviced and refitted as necessary prior to the Winter Maintenance Season.

All salt gritters are supplied by Romaquip, Birr, Co. Offaly including spare parts.

3.4.4 Arrangements for "Specialist" Equipment

De-icing takes place in the Machinery Yard Newcastle West and other depots as necessary.

Spare parts for winter service machinery (Routes 1- 12 & 15) are stored in the Machinery Yard Newcastle West.

The person responsible for re-ordering is the Machinery Yard Foreman Tim Dore.

All plant (Routes 1-15) is fully serviced and refitted as necessary prior to the Winter Maintenance Season.

All salt gritters are supplied by Romaquip, Birr, Co. Offaly including spare parts.

The gritters employed on Routes 13 & 14 in the Metropolitan Area are maintained by Romaquip. The Metropolitan Area Engineer is currently responsible for the management of this.

3.4.5 Arrangements with supply chain partners

The salt for Winter Service Operations is supplied by the TII & the Department of Transport through a framework agreement for the supply of de-icing materials.

Salt is allocated to the local authority at the start of the season and is drawn down utilising the National Salt Management System. Orders & weekly usage records for de-icing materials are to be sent through a new Salt extranet https://kildarenrdo.laservices.ie/nsms and shall be coordinated centrally by the Executive Engineer in Operations Central Services.

Contacts for Salt Management System in Kildare NRDO

[redacted]

[redacted]

3.5 De-Icing Materials

3.5.1 Type and Specification

- 6.3mm salt, to UK BS3247:2011.
- Abrasives: 5 or 6mm sharp sand

3.5.2 Storage Locations A.7

De-icing Material (i.e. Dry salt/ABP)	Location	Type (barn)	Max (tonnes)	Min (tonnes)
DRY	[redacted]	[redacted]	[redacted]	
DRY	[redacted]	[redacted]	[redacted]	
DRY	[redacted]	[redacted]	[redacted]	
DRY	[redacted]	[redacted]	[redacted]	
DRY	[redacted]	[redacted]	[redacted]	

3.5.3 Brine Production and Storage

Location	Type (saturation/storage only)	Capacity (L)	Min (L)
N/A			

3.5.4 Supply Arrangements

Limerick City and County Council has the competencies to deal with all situations extending from prevention to dealing with extreme weather/climatic events and aftermaths.

A programme of training has extended to all operators involved in winter maintenance of both Priority 1 and 2 routes which involves the use of heavy unit gritters and mini gritter units. This has involved all drivers involved in Priority 1 units completing accredited training through national training centres. This has been extended to those involved in smaller units to the best available training though not accredited for personnel involved in Priority 2 routes only.

A roster will be prepared of all drivers including all Priority 1 & 2 drivers and an appropriately qualified standby for regular changeover and to provide adequate standby for intensive works during extreme weather condition.

Adequate salt supplies are in place and other stocks are on call as necessary. Lines of communication are open to all adjoining authorities to ensure that there is no conflict in terms of operations or omissions during periods of intensive operations or extreme event

3.5.5 Reserve Arrangements

[Limerick City and County Council] shall ensure that it has sufficient provision of salt stock to ensure that stock and operational requirements are met at the start of the season and maintained with suitable provision re-stocking throughout the winter season.

The start of season stock levels, at a minimum, shall be sufficient for 63 treatments (based on 3 daily treatments for 21 days) for all national routes.

During the winter season minimum stock levels shall be sufficient for 36 treatments for all routes, except during April when this may be reduced to 18 treatments for all national routes.

3.5.6 Monitoring and Reporting

[Limerick City and County Council] shall monitor salt stocks (and stocks of other appropriate materials) weekly (daily when required during severe weather events) during the winter period and in accordance with the salt management requirements of TII and the Winter Service Manual.

Regional depots are replenished from main salt stores after each event. The main salt store is replenished when the stock threshold Levels are at re order level.

3.6 Winter Service Infrastructure Inventory

3.6.1 Description

The winter service infrastructure inventory shall be stored in MS Excel containing detailed information relating to the Depots and winter service fleet. This inventory is a database which requires updating to reflect any changes. **See Table A.7 for details.**

3.6.2 Database

Limerick City and County Council shall create the inventory database before the operational winter season, and review/update the inventory information twice per year during the January/February and June/July periods each year.

4. Delivery of the Winter Service

4.1 Treatment Methods

The main treatment methods available to *[Limerick City and County Council]* are outlined in the following table:

Treatment type	Details
Dry Treatment	De-icer, most commonly sodium chloride salt, is spread in a dry form. Traditionally, this has been the main method utilised in the UK and Ireland for many years and this is still the method currently utilised by the majority of Local Authorities.
Pre-wetted Treatment **N/A**	Granular de-icer, most commonly sodium chloride salt, is mixed with a brine solution at the point of spreading. A treatment additive may be included in either or both of the brine and dry components. Pre-wetted treatment is a development that is now in relatively wide use across the UK and Ireland. In certain situations and conditions, it can offer benefits over dry treatments, including reduced spread rates.
Treated Salting **N/A**	Sodium chloride salt in granular form is mixed with a treatment additive. Commonly, the treatment additive comprises an Agricultural By-Product (ABP), either used alone or mixed with other chemicals. Treated salting is also a development that is now in wide use across the UK. Again, in certain situations and conditions, it can offer benefits over dry treatments, including reduced spread rates.
Direct Liquid Application (DLA) **N/A**	Liquid de-icer is applied directly to the road surface, usually by spraying. This method has been used for many years in the UK to treat short sections of the network, such as certain bridge decks, that are particularly susceptible to infrastructure damage through corrosion. DLA on larger sections of the network is much less common practice ~~in Ireland~~ than the other treatment types discussed above. However, this technique is currently the subject of research and a number of on-going trials.

Footpaths and Cycleways

In times of prolonged and extreme weather Limerick City and County Council may consider targeted treatment on Footpaths and cycleways in towns, villages and city environs as resources, particularly personnel availability and Health and Safety considerations, permit. Specific requests will be sent to the relevant Municipal Districts and will be dealt with on a case by case basis and will be accessed on the basis of need and the availability of resources

- **Priority 1 and Priority 2**

Table: Metropolitan Winter Maintenance Policy for Footpaths

Route Designation	Description	Street/Area/Location
Priority 1	Prioritised Pedestrian Areas in Metropolitan Area	Bedford Row, Thomas Street
Priority 2	Pedestrian Areas & Main Streets in Metropolitian Area	Catherine St; Little Catherine St; Little William St; Cruises St; Todd's Row and Chapel St
	Main Commercial Streets of Metropolitan Area	William St; Henry St; O'Connell St; Patrick St; Arthurs Quay & Francis St

	Route to Colbert Train Station from pedestrian Areas	Shannon St; Roches St; Parnell St; O Connell St.
	Route to St Munchins Maternity Hospital	Sarsfield St; Ennis Road
	Footpaths on Bridges in Metropolitan Area	Matthew Bridge, Sarsfield Bridge, Thomond Bridge, Shannon Bridge, Abbey Bridge, Baal's Bridge, O'Dwyers Bridge

Metropolitan Operational Area Treatment Routes:

FP01: Bedford Row - Thomas Street

Pedestrian areas – Bedford Row, Thomas St; Little William St and Little Catherine St to be treated with rock salt using lorry/truck mounted gritter.

FP02: Cruises Street

Pedestrian Areas Cruises's St, Todds Row and Chapel St to be treated with rock salt using lorry/truck mounted gritter.

FP03: Footpath on Bridges

FP03a: Shannon Bridge/

FP03b: Sarsfield Bridge

FP03c: Thomond Bridge

FP03d: Mathew Bridge

FP03e: Baal's Bridge

FP03f: Abbey Bridge

FP03g: O'Dwyers Bridge

FP04: CIE Station to Sarsfield St

Parnell St, Roches St, Catherine St from Thomas St to Cecil St; Shannon St (Catherine St to Henry St), Henry St (Shannon St to Sarsfield St).

FP05: Upper William St to Maternity Hospital

Upper William St; William St; Sarsfield St; FP03b Sarsfield Bridge, Ennis Road & Bellfield Rd to St Munchins Maternity Hospital.

FP06: O Connell St to Nicholas St

O Connell St from Monument, Patrick St; Rutland St; FP03d Mathew Bridge, Bridge St; Francis St; Arthurs Quay.

FP07: City Hall

Crosbie Row, Newgate St

FP08: Cycleways

Groody Road, Shannon Bridge/Clondell road, St Nessans Road, Dooradoyle rd, Childers Rd, Hyde Road, Plassey Park Road. (Cycleway treatments are covered under Road Treatment routes)

Rural Operational Areas

There are a number of hand operated mini salt gritters available for pedestrian areas and footpaths in the County areas. Listed below are some of the areas where salting of priority footpaths using these hand operated mini salt gritters could be carried out where resources permit in extreme events

Newcastlewest, Abbeyfeale, Rathkeale, Askeaton, Kilmallock, Kilfinane, Bruff, Adare, Croom, Cappamore, Doon, Castleconnell, Hospital, Dromcolligher

4.2 Decision Making and Treatment Matrices

Decisions are made primarily in the interest of service delivery and continuity and takes account of weather and decision information from neighbouring Managing Organisations (as detailed in the Introduction of this Plan).

All decisions shall be subject to verification, continuous monitoring, recording & review by the Winter Service Manager.

All winter decisions shall be evidence based and shall be made in accordance with the guidance contained within the following decision and treatment matrices.

Decision making and treatment matrices for Precautionary Treatment are shown in the following pages.

Responsibility for managing call-outs on a daily basis lies with the Duty Engineer, of which there are two, who as necessary liaise with the other members of that team and individual Area Road Supervisors and Superintendents depending on weather forecast, RoadDSS system prediction and local conditions as well as local traffic information. Daily calls are considered from early afternoon on receipt of Met Eireann weather forecasts and any other forecasts in respect of precipitation or changes in weather systems. System is monitored throughout the evening and night as necessary. There are no limitations on the time that the call-out is made other than Health & Safety considerations for Drivers particularly and other staff involved in operation. Every effort is made to ensure that all call-outs are on a planned basis several hours ahead due to time for mobilisation which is quite long for some routes. In case of unforeseen and on the spot call-outs every effort is made to ensure that mobilisation is less than **1.5 hour.**

In managing call-outs the Duty Engineer will monitor the RoadDSS system and other weather information systems available to them and allow for best available information to them on traffic movement e.g. times of day, traffic peaks, local events, day of week and seasonal issues such as Christmas events. The call which is essentially a judgement call will also rely on issues such as:

- Any exceptional warnings from Met Eireann,
- General observations on prevailing conditions and from RoadDSS weather stations located in County Limerick and those peripherally in neighbouring administrative areas.
- Liaison with Duty Engineers in neighbouring administrative basis and road operators.
- Liaison through Limerick City and County Council's out of office hours Emergency Notification.

During periods of forecast severe winter weather Limerick City and County Council shall remain in contact with *Met Eireann* and shall also take account of information from its staff on the network and from CCTV in addition to information from TII's Road Weather Information System (RWIS) when making decisions.

4.2.1 Road Surface Wetness

For the purpose of allocating treatments, a distinction is made between dry, damp and wet road surfaces in the table below. The following definitions will be used when making the treatment decision.

Road Surface Wetness		
Definition	**Description**	**Water film thickness (for when using WFT instrumentation)**
Dry Road	A road that shows no signs of water or dampness at the surface but may be just detectably darker. It may have moisture contained in pores below the surface that is not 'pumped' to the surface by traffic.	0 to 0.03mm (=0-30 g/m2)
Damp Road	A road which is clearly dark but traffic does not generate any spray. This would be typical of a well-drained road when there has been no rainfall after 6 hours before the treatment time.	0.03 to 0.05mm (=30-50 g/m2)
Wet Road	A road on which traffic produces fine spray but not small water droplets. This would be typical of a well-drained road when there has been rainfall up to 3 hours before the treatment time.	0.05 to 0.1mm (=50-100 g/m2)
Very Wet Road and Flowing Water on Road*	A road on which traffic produces droplets of water in the air to visibly flowing water on the surface	Greater than 0.1mm (=>100 g/m2)

**The amount of salt required to prevent ice from forming in these conditions is considered impractical for Local Authorities to deliver during normal precautionary salting operations*

4.2.2 Decision Matrix Guide

<table>
<tr><th></th><th></th><th colspan="3">Predicted Road Conditions</th></tr>
<tr><th>Road Surface Temperature</th><th>Precipitation etc</th><th>Wet</th><th>Damp</th><th>Dry</th></tr>
<tr><td>May fall below 1°C</td><td>No rain
No hoar frost
No fog</td><td rowspan="3">Salt before frost</td><td rowspan="2">Salt before frost (see note A)</td><td rowspan="2">No action likely, monitor weather (see note A)</td></tr>
<tr><td rowspan="5">Expected to fall below 1°C</td><td>No rain
No hoar frost
No fog</td></tr>
<tr><td>Expected hoar frost
Expected frost</td><td colspan="2">Salt before frost (see note B)</td></tr>
<tr><td>Expected rain BEFORE freezing</td><td colspan="3">Salt after rain stops (see note C)</td></tr>
<tr><td>Expected rain DURING freezing</td><td colspan="3">Salt before frost and after rain stops (see note D)</td></tr>
<tr><td>Possible rain
Possible hoar frost
Possible fog</td><td colspan="2">Salt before frost</td><td>Monitor weather conditions</td></tr>
</table>

Expected snow		Salt before snow fall
Freezing Rain	**Before rain**	Salt before rainfall (see note D)
	During rain	Salt during rainfall (see note D)
	After rain	Salt after rainfall (see note D)
The decision to undertake Precautionary Treatments shall, if appropriate, be adjusted to take account of surface moisture. Limerick City and County Council shall plan and mobilise precautionary treatments so as to complete the treatment as close to the forecasted time of freezing as possible. All decisions shall be evidence based, recorded and require careful monitoring and review.		

a) Particular attention shall be given to the possibility of water running across carriageways and other running surfaces e.g. surface water off adjacent fields after heavy rains, washing off salt previously deposited. Such locations shall be closely monitored and may require treating in the evening and morning and possibly other occasions. Ideally the source of the run-off shall be diverted from the roadway.

b) When a weather warning contains reference to expected hoar frost, considerable deposits of frost can occur. Hoar frost usually occurs in the early morning and is difficult to cater for because of the probability that any salt deposited on a dry road too soon before its onset, may be dispersed before it can become effective. Careful monitoring is required under this forecast condition which shall ideally be treated just as the hoar frost is forming. Such action is usually not practicable and salt may have to be deposited on a dry road prior to but as close as possible to the expected time of the condition. Hoar frost may also be forecast at other times of the day, in which case the timing of salting operations shall be adjusted accordingly.

c) If under these conditions, rain has not ceased by early morning, crews shall be called out and action initiated as rain ceases.

d) Under these circumstances rain will freeze on contact with running surfaces and full Precautionary Treatment shall be provided even on dry roads. This is a most serious condition and shall be monitored closely and carefully throughout the danger period.

4.2.3 Traffic Levels

For the purpose of allocating treatments, traffic levels are categorised into 'Light', 'Medium', 'High' and 'Congested'. These categories relate to those anticipated around the time of the precautionary salting operation and are defined in the table below.

It should be noted that these categories are not the same as the traffic categories generally used for other road maintenance purposes.

Traffic Level Categories (Relating to the period around the time of the precautionary salting operation)	
Traffic Level	**Vehicles per lane per hour**
Light	Less than 20
Medium	20 to 250
High	250 or more and moving at normal traffic speeds
Congested	250 or more moving slower than normal traffic speeds

4.2.4 Spreader Capability

For precautionary treatments, the spread rates to be used depend upon the uniformity of de-icer distribution, measured in terms of spreader capability. This performance measure is used as part of the decision making process when deciding the spread rates required during treatments.

4.2.5 Treatment Matrices

The treatment matrices below provide target spread rates for precautionary salt spreading in response to predictions of ice and frost formation on the Limerick City and County Council network.

The matrices assume 'Medium Traffic' around the time of the precautionary salting operation. For 'Light Traffic' situations, the spread rates provided in the matrices shall be increased by 25%. Research has shown that salt losses do not increase significantly in 'High Traffic' situations and it is therefore considered that the spread rates provided in the matrices are suitable for use in these situations. Undertaking precautionary salting operations in 'Congested Traffic' situations shall be avoided whenever practical considerations allow. However, when it is necessary to undertake precautionary salting operations in 'Congested Traffic', the spread rates provided in the matrices shall be increased by 20%.

When utilising these rates, it is crucial that the content of all of the 'Key Notes' below is properly considered, as these notes provide information regarding the interpretation of the treatment matrices and discuss situations when the spread rates should be modified.

KEY NOTES:

Note 1 – 'Rounding'

The spread rates provided in the matrices are derived from applied research and scientific analyses. It is recognised that Local Authorities may consider 'rounding' some of the spread rates in order to satisfy issues of practicability, which is an important factor in delivering an efficient and effective winter service.

However, during this process it is recommended that Local Authorities do not utilise lower precautionary spread rates than the lowest rates provided in the matrices, i.e. 8g/m² for dry salt and pre-wetted salt applications, and 7g/m² for treated salt applications.

In determining the spread rates to be used on their networks, Local Authorities should utilise the matrices as a basis, along with their experience and expertise in dealing with the conditions and circumstances prevailing in their local areas, so as to ensure that risks and resources are appropriately managed.

Note 2 – Interpolation within individual temperature bands

The amount of de-icer required to prevent frost/ice formation does not increase by way of step changes as surface temperature reduces. Therefore, when considering specific minimum road surface temperature predictions, Local Authorities may decide to interpolate between the relevant recommended spread rates shown in the matrices.

Note 3 – Higher spread rates

In certain weather and road conditions, the spread rates provided in the matrices may be higher than the spread rate(s) utilised by the Local Authority during their salting route optimisation exercises. Therefore, it may not be possible to deliver the recommended spread rate in a single application. In this situation, ensuring sufficient de-icing material is present on the road surface is likely to require more than one treatment.

Note 4 – Very low temperatures

Due to the amount of salt needed to prevent frost/ice from forming at very low temperatures, it is recommended that the use of alternative de-icing materials is considered on all roads when minimum road surface temperatures are predicted to fall below -7°C. These rates for salt are therefore shown in grey shading in the matrices. When spreading salt for these conditions (and when lower than -5°C in low humidity conditions), it is important that the timing of spreading operations allows sufficient time for the salt to enter solution before these temperatures are reached (see 'Treatments for Extreme Cold' section of the NWSRG Practical Guide for more information).

Note 5 – Salt chloride content

The spread rates provided in the matrices are based on the use of rock salt. If salt with higher purity is used, spread rates can be reduced. For example, the recommended spread rates can be reduced by 7.5% if salt purity is 99% or higher. However, a minimum spread rate of 8g/m² (7g/m² for treated salt) should be maintained in order to account for the inevitable variabilities that occur in coverage and losses.

Note 6 – Salt moisture content

The spread rates provided in the matrices relate to salt exhibiting a moisture content within the optimum range. Information relating to optimum moisture content of de-icing salt is provided in the 'Salt Storage' section of the NWSRG Practical Guide.

For pre-wetted and treated salting, the optimum moisture content is less than 4%.

The optimum moisture content range for dry salting is dependent upon its fines content. Where the maximum fines content (<0.3mm particle size) is less than or equal to 7.5%, the optimum moisture content for dry salting is within the range 1.5% to 4%. Where the maximum fines content is above 7.5%, the optimum moisture content is within the range 2% to 4%.

When undertaking precautionary salting operations with salt that falls outside of the optimum range, the spread rates provided in the matrices should be increased by 20%.

Note 7 – Porous Asphalt

When spreading on porous asphalt, the spread rates provided in the matrices should be increased by 25% and the increased spread rate should be maintained for a distance of 1 kilometre 'downstream' of each porous section (in two-way traffic situations, the increased spread rate should be maintained for a distance of 1 kilometre at both ends of each porous section).

Note 8 – Other negatively textured surfaces

With regard to its effects on de-icing materials, negatively textured surfacing can potentially exhibit similar properties to porous asphalt and Local Authorities may wish to consider increasing spread rates by between 10% and 25% on negatively textured surfacing that is less than two years old. However, the porosity of such surfacing varies considerably with type and over time, and experience indicates that it is often impractical and unnecessary to increase spread rates on negatively textured surfaces, especially where these comprise only relatively short sections of treatment routes.

Note 9 – Bridge decks

In certain weather conditions, some bridge decks can exhibit lower minimum surface temperatures than those of adjacent sections of road. Some bridge decks can also cool down at an increased rate compared to other road sections. Therefore, it is recommended that Local Authorities use their experience and/or a process of risk assessment to identify any bridge decks that exhibit significantly different thermal characteristics during winter conditions than the adjacent sections of road. It is further recommended that those Local Authorities that maintain such bridges obtain weather forecasts that include specific reference to the bridge deck temperatures and treat them accordingly. Due to the materials used in bridge construction, such treatment may include the use of alternative de-icing materials.

Note 10 – Traffic levels

The matrices assume 'Medium Traffic' around the time of the precautionary salting operation. For 'Light Traffic' situations, the spread rates provided in the matrices should be increased by 25%.

Research has shown that salt losses do not increase significantly in 'High Traffic' situations and it is therefore considered that the spread rates provided in the matrices are suitable for use in these situations.

Undertaking precautionary salting operations in 'Congested Traffic' situations should be avoided whenever practical considerations allow. However, when it is necessary to undertake precautionary salting operations in 'Congested Traffic', the spread rates provided in the matrices should be increased by 20%.

When undertaking precautionary operations in 'Congested Traffic' situations, it may be necessary to implement additional measures to aid the passage of spreaders and/or to consider undertaking additional treatments in order to ensure proper distribution of the de-icers.

Note 11 – Precipitation

Precipitation will adversely affect de-icing materials on the road surface, reducing their effectiveness and, along with the action of traffic, significantly increase the rate at which they are removed from the road surface. It is therefore recommended that, whenever practicable, treatments are delayed and undertaken after any predicted or actual rainfall has ceased and before freezing road surface temperatures are expected.

It is recognised that a band of frontal rain crossing the area presents a different situation to that of scattered showers, for example, and that it is sometimes difficult, or even impossible, to undertake and complete an operation in the available time period after the cessation of precipitation. In these situations, which can be some of the most challenging of all for decision makers, it will be necessary for winter service decision makers to use their judgement, along with all of the relevant information available to them, to determine the optimum timing for these salting operations.

Note 12 – Wind speed and direction

Wind speed and direction can affect the spreading of salt and, in dry conditions, also affect the length of time that the salt will remain on the road surface. When practical, it is therefore recommended that Local Authorities avoid spreading during the predicted high wind period, i.e. periods when mean wind speeds are predicted to be 30 km/h or more.

This issue is likely to affect some locations on the salted network more than others, and the precise effects of high winds are difficult to quantify due to the nature of the wind field close to the road surface and the number of variables involved which include, amongst other factors, the direction of the wind field relative to the salting vehicle, the treatment type being utilised (dry, treated or pre-wetted etc) and the grain size of the salt etc.

Local Authorities should also be aware that forecast mean wind speeds typically relate to those at a height of 10 metres above the ground and these are not likely to be the same as those closer to the ground and care should be taken when comparing wind data from RWIS to forecasts etc.

When treatments are carried out during high wind conditions, it is recommended that Local Authorities monitor residual salt levels and carry out re-treatments if and where necessary. If this issue is considered to pose a significant risk, Local Authorities may also wish to increase spread rates when carrying out precautionary salting operations during periods when forecast mean wind speeds are greater than 30 km/h.

Note 13 – Residual salt

Residual salt from previous operations can reduce the spread rates required to prevent frost/ice formation. However, if, when decision making, residual salt levels are relied upon to reduce instructed spread rates, it is important that such decisions are evidence based. As with all other pertinent information relating to winter service decision making, the supporting data should be recorded and retained.

Spread Rates for Dry Salting

Target Spread Rates – Dry Salting (g/m²) Treatment Matrix				
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*

Spread Rates for Treated Salting

Treated salt incorporates an additive designed to improve performance and distribution (e.g. Agricultural By Product – ABP), as well as reducing the rate of salt loss after spreading. Before adopting the treated salt spread rates in the matrix below, Local Authorities should therefore satisfy themselves that the material is suitable for purpose and meets the manufacturer's performance claims. This includes manufacturers providing evidence of appropriate independent testing etc.

Target Spread Rates – Treated Salting (g/m²) Treatment Matrix N/A				
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	*7*	*7*	*7*	*7*
-1.1°C to -2.0°C	*7*	*8*	*7*	*7*
-2.1°C to -3.0°C	*7*	*12*	*7*	*10*

-3.1°C to -4.0°C	*9*	*17*	*7*	*13*
-4.1°C to -5.0°C	*11*	*21*	*8*	*16*
-5.1°C to -7.0°C	*15*	*29*	*11*	*22*
-7.1°C to -10.0°C	*20*	*40*	*16*	*31*
-10.1°C to -15.0°C	*26*	*55*	*22*	*43*

Spread Rates for Pre-Wetted Salting

The spread rates in the matrix below apply to pre-wetted treatments comprising a 70:30 ratio by weight of dry salt to sodium chloride brine (sometimes denoted as FS 30), with a maximum dry salt component moisture content of 4% and a brine concentration of between 20 and 23%. Before adopting the pre-wetted salting spread rates in the matrix below, Local Authorities should therefore satisfy themselves that the treatments they are using meet these criteria.

Target Spread Rates – Pre-Wetted Salting (g/m²) Treatment Matrix N/A				
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*	*10*	*8*	*8*
-2.1°C to -3.0°C	*8*	*16*	*8*	*12*
-3.1°C to -4.0°C	*11*	*21*	*9*	*17*
-4.1°C to -5.0°C	*14*	*27*	*11*	*21*
-5.1°C to -7.0°C	*19*	*37*	*15*	*30*
-7.1°C to -10.0°C	*27*	*53*	*21*	*42*
-10.1°C to -15.0°C	*n/a*	*n/a*	*n/a*	*n/a*

Brine or other Direct Liquid Applications N/A

When deciding spread rates and conditions for which brine or other DLA treatments will be utilised, Local Authorities should consult with manufacturers to understand the capability of the spreading equipment.

A staged approach to implementing DLA treatments on selected routes should enable Local Authorities to build experience and assess the suitability of the treatment method before more significant capital expenditure.

Initial treatments should be carefully monitored to assess performance.

Brine spreading or other DLA treatments can provide a useful tool for a wide range of conditions, but may not be suitable under all conditions. A dry, treated or pre-wetted spreading capability must also be available for routes considered for liquid treatments.

Route characteristics most suitable for brine spreading include:

- *High proportion of precautionary treatments in marginal surface temperatures above 2ºC.*
- *Infrequent snow and/or road surface temperatures below -5ºC.*

Brine spread rates, shown below, have been developed based on a comparison with rates successfully implemented in other European countries and experience from the ongoing brine spreading trials in Scotland.

Important general notes when considering the spread rates include:

- *The spread rates below are dependent on a brine concentration in the range of 20 to 23%, with a recommended target concentration of 23%.*
- *Maintaining the correct brine concentration is critical for effectiveness of brine treatments, with the amount of salt spread directly proportional to this concentration. If the brine concentration is below the target range, less salt will be spread onto the carriageway and lower concentration brines are also more likely to freeze in extreme cold conditions. If the brine concentration exceeds 23%, there is a risk of salt re-crystallising within the pumps, pipes and nozzles of the spreader, particularly at very low temperatures.*
- *Other spreading equipment to that used in these trials may offer different spreading performance. When deciding spread rates and conditions for which liquid spreading will be used, Local Authorities should consult with manufacturers to understand the capability of the spreading equipment.*

Brine spread rates for frost events N/A		
Road Surface Temperature (RST) when frost/ice is predicted	**Target Spread Rates – Brine Spreading (ml/m²)**	
	Dry/Damp Road	**Wet Road**
At or above -2.0°C	*10*	*20*
-2.1°C to -5°C	*20*	*30*
-5.1°C to -7.0°C	*30*	*N/A*

Key notes:

- Spread rates are for road surface wetness up to 0.1mm thick, i.e. a road on which traffic produces fine spray.
- Roads can remain wet after rain for significant periods (2-3 hours) before effective brine treatments are possible.
- Brine concentration must be monitored and kept within acceptable agreed ranges (typically 20-23% but saturator technology may enable tighter tolerances)
- All brine spreaders must be calibrated; this includes monitoring the discharge rate and carrying out a visual check of the distribution.

4.3 Spreading Techniques & Operational Considerations.

4.3.1 Treatment Spread Rates by Location

Where hard shoulders, carriageway marginal strips, footways, integrated cycleways or pedestrian areas are adjacent to and contiguous with the carriageway, they may be treated at the same rate and during the same treatment as the carriageway.

Where a treatment is carried out specifically for hard shoulders, carriageway marginal strips, footways, integrated cycleways or pedestrian areas, or where the location of these areas are such that they are not treated at the same time as the carriageway, they shall be treated at the salt spread rates set out in the table below under extreme weather events as defined by Met Eireann.

Location	Salt Spread Rate
Hard shoulder or carriageway marginal strips	50% of value in Treatment Matrix Guide
Footways, integrated cycleways and pedestrian areas	25 gm/m^2
Porous Surfacing	125% of value in Treatment Matrix Guide

4.3.2 Special Considerations

4.3.3 Low Humidity

Limerick City and County Council shall give special consideration to Precautionary Treatments during low humidity conditions.

Include full details of the practical measures proposed.

Every effort is made to ensure that all call-outs are on a planned basis several hours ahead due to time for mobilisation which is quite long for some routes. In case of unforeseen and on the spot call-outs every effort is made to ensure that mobilisation is less than **1.5 hour.**

In managing call-outs the Duty Engineer will monitor the RoadDSS system and other weather information systems available to them and allow for best available information to them on traffic movement e.g. times of day, traffic peaks, local events, day of week and seasonal issues such as Christmas events. The call which is essentially a judgement call will also rely on issues such as:

- Any exceptional warnings from Met Eireann,
- General observations on prevailing conditions and from RoadDSS weather stations located in County Limerick and those peripherally in neighbouring administrative areas.
- Liaison with Duty Engineers in neighbouring administrative basis and road operators.
- Liaison through Limerick City and County Council's out of office hours Emergency Notification.

4.3.4 Freezing Rain

Limerick City and County Council shall give special consideration to the treatments required before during and after freezing rain.

Measures/considerations taken by Limerick City and County Council for Low Humidity, freezing rain, and low sustained temperatures will be actioned the same 4.3.3

Met Eireann will advise in advance of such of an extreme event and LCCC will react in corporation with other statutory bodies. Public notices and social media platforms will be utilised to inform general members of public

4.3.5 Sustained Low Temperatures

Limerick City and County Council have access only to dry salt treatments and in the case of low temperatures the application of the dry salt will be at appropriate high spread rates. Additional treatments will be required and further treatments will be required during the day to ensure local services and Schools remain open and operational.

For further guidance in relation to sustained low temperatures, refer to the 'Treatments for Extreme Cold' section of the NWSRG Practical Guide.

4.3.6 Salt Heaps / Salt Bins

Salt depots TABLE 3.5.2

Appendix A7 Depots and Facilities

4.4 Treatments for Snow and Ice

4.4.1 General

It is impractical to spread sufficient salt to melt anything other than very thin layers of snow and ice. Ploughing is the only economical, efficient, effective and environmentally acceptable way to deal with all but very light snow.

4.4.2 Preparation before ice and snow

To prepare for and facilitate ice and snow treatments the following shall be considered:

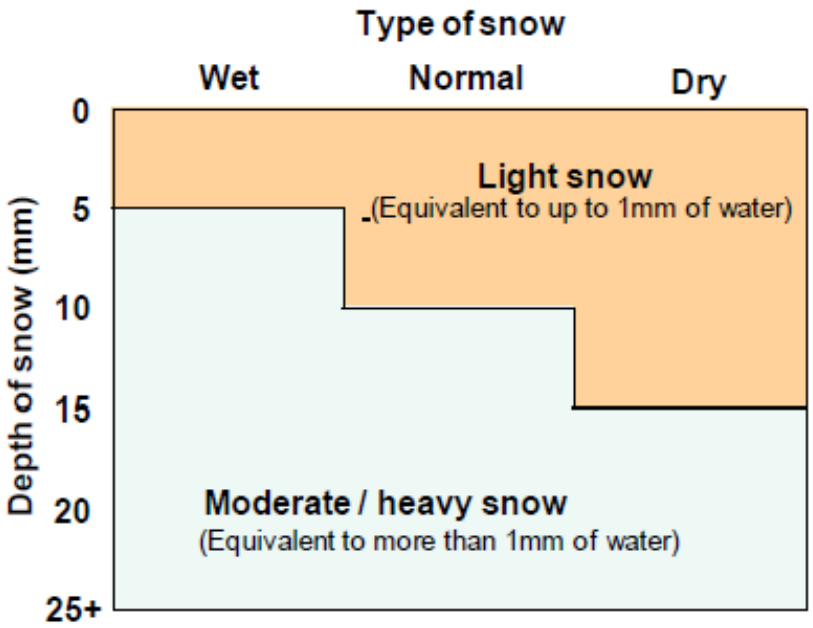
- When snow is forecast, ploughs and snow blowers shall be prepared and positioned in order that snow clearance can start without delay as and when required.
- To facilitate the breakup and dispersal of ice and snow by trafficking, treatments shall be made before snowfall or freezing rain so that sufficient de-icer is present on the surface to provide a debonding layer.
- Although it will increase salt usage, before snowfall and where practicable, consideration shall be given to spreading salt as close to the forecasted event on as much of national road network as possible. This will provide a debonding layer and facilitate the breakup and dispersal of snow by traffic before subsequent treatments take place.

4.4.3 Depths of snow (light snow, moderate to heavy snow)

Two main snowfall categories are defined here – 'light' snow and 'moderate/heavy' snow. 'Light' snow is taken to be snow equivalent to 1mm of water (or less) while snowfalls equivalent to more than 1mm are considered to be 'moderate/heavy', as shown in the diagram below.

The reasons for this are:

The highest *practicable* spread rates are considered to be 40g/m² of dry salt. When combined with the action of traffic, this is sufficient de-icer to melt snow depths which are equivalent to 1mm of water at temperatures down to -2˚C. Generally, there is approximately 1mm of water in 5mm depth of wet snow, 10mm depth of 'normal' snow and 15mm depth of dry, powdery snow.



4.4.4 Precautionary Treatments before snow or freezing rain

Spread rates for Precautionary Treatments before snow or freezing rain are given in the table below.

Treatments Before Snow or Freezing Rain	
Weather conditions	**Spread Rates (g/m²)**
Light to Moderate/Heavy snow forecast	*Spread:* • *20-40g/m² of dry salt, or* • *20-40g/m² of pre-wetted salt, or* • *15-30g/m² of treated salt*
Freezing rain forecast	*Spread:* • *20-40g/m² of dry salt, or* • *20-40g/m² of pre-wetted salt, or* • *15-30g/m² of treated salt*
Note 1: In situations where time constraints dictate, a treatment of 20g/m² 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/m² on only part of the network.	

4.4.5 Treatments during snowfall or freezing rain

Spread rates for Precautionary Treatments during snowfall or freezing rain are given in the table below.

<table>
<tr><th colspan="3">Treatments During Snowfall or Freezing Rain</th></tr>
<tr><td colspan="3">Plough to remove as much material as possible e.g. slush, snow, compacted snow
Ploughing should be down to as close to the level of the road surface as possible
Ploughing should start and, where necessary, be continuous to prevent a build-up of snow
As snow melts under the action of salt, keep ploughing to remove slush</td></tr>
<tr><th>No ice or compacted snow on surface</th><th colspan="2">Ice or compacted snow on surface</th></tr>
<tr><td rowspan="2">To provide a debonding layer, spread:
• 20-40g/m² of dry salt, or
• 15-30g/m² of treated salt or
• 20-40g/m2 of pre-wetted salt</td><td colspan="2">Is traffic likely to compact subsequent snowfall before further ploughing is possible?</td></tr>
<tr><td>YES</td><td>NO</td></tr>
<tr><td>To provide a debonding layer, spread:
• 20-40g/m² of dry salt, or
• 15-30g/m² of treated salt or
• 20-40g/m2 of pre-wetted salt</td><td>No de-icer should be spread</td></tr>
</table>

4.4.6 Treatment when thin layers of ice (up to 1mm) have formed

When a thin layer of ice has formed, including after freezing rain, treatments shall be made in accordance with the following table.

Treatment for Thin Layers of Ice (Less Than 1mm Thick)	
Forecast weather and road surface conditions	
Lower of air or road surface temperature **Above -5ºC**	*Spread:* • *40g/m² of dry salt, treated salt or pre-wetted salt, or* • *40g/m2 of salt/abrasive mix*
Lower of air or road surface temperature **At or below -5ºC**	*Spread:* • *40g/m2 of salt/abrasive mix (50:50)*
Note 1: Salt is ineffective in the short term at temperatures below -7°C. Abrasives only should be used when it is expected to be below -7°C for long periods. Other de-icers are available for low temperatures (refer to the 'Treatments for Extreme Cold' section of the NWSRG Practical Guide).	

4.4.7 Treatment for thicker layers of ice or compacted snow

When thicker layers of ice have formed, including after freezing rain, treatments shall be made in accordance with the following table.

Treatment for Layers of Compacted Snow and Ice	
Plough to remove as much material (e.g. slush, snow, compacted snow) as possible from the top of the compacted layer	
Medium Layer Thickness (1 to 5 mm)	**High Layer Thickness (greater than 5mm)**
For initial treatment, spread: • *40g/m² of salt/abrasive mix (50:50)* *For successive treatments, spread:* • *20g/m² of salt/abrasive mix (50:50)*	*For initial treatment, spread:* • *40g/m² of abrasives only* *For successive treatments, spread:* • *20g/m² of abrasives only* *After traffic has started breaking up the layer, spread:* • *20g/m² of salt/abrasive mix (50:50) so salt can penetrate the layer and reach the road surface*

4.5 Snow Clearance

4.5.1 General

Ploughing down to the road surface is preferred as this minimises salt usage and makes salt treatments more effective. However, snow ploughs shall be set to avoid risk of damage to the plough, the road surface, street furniture and level crossings.

Where possible, snow shall be ploughed to the low side of the carriageway and the build-up of snow on the high side of the carriageway shall be avoided. This is to avoid the later run-off from windrows or piles of snow from entering the traffic lanes, where it may dilute treatments and/or refreeze.

Drainage shall not be obstructed when ploughing and windrows or piles of snow shall be removed or be positioned to allow melt water to reach the drains. Where possible*, [Limerick City and County Council]* shall remove piles of snow so that melted snow does not overload drainage systems or run back onto the road and refreeze to form sheet ice, particularly where drainage is blocked or piles of snow are to the high side of the road. Accumulations of snow at central reserves, especially those with vertical concrete barriers, shall be cleared where they create a hazard or impede drainage.

Windrows shall be avoided at junctions, entrances and level crossings. *[Limerick City and County Council]* shall contact Irish Rail before ploughing commences on roads that include level crossings. Windrows shall be removed or ploughed back when further periods of heavy snow are anticipated. This will provide space to plough the further snowfalls.

When planning and carrying out snow clearance on motorway and dual-carriageway routes, *[Limerick City and County Council]* shall ensure smooth merging/diverging of vehicles from the main carriageway can occur. Lanes shall be completely cleared and the windrows of snow remaining shall form a smooth and continuous line without sudden encroachments into the cleared path. Windrows may be left on hard shoulders but there shall be intermittent clear openings left in windrows at maximum intervals of 1km to provide refuge for broken down or abandoned vehicles.

All lanes shall be cleared by *[Limerick City and County Council]* as soon as possible and the hard shoulders, road markings and reflective studs cleared thereafter. Clearance work shall proceed continuously.

4.5.2 Ploughing & Clearance Techniques and Operational Considerations

General

- It is impractical to spread sufficient salt to melt anything other than very thin layers of snow and ice.
- Ploughing is the only economical, efficient, effective and environmentally acceptable way to deal with all but very light snow.
- Ploughing down to the road surface is preferred. However, snow ploughs shall be set to avoid risk of damage to the plough, the road surface, street furniture and level crossings.
- Ploughing to the road surface minimises salt usage and makes salt treatments more effective.
- Drainage shall not be obstructed when ploughing. Windrows or piles of snow shall be removed or be positioned to allow melt water to reach the drains. If necessary, piles of snow shall be removed so that melted snow does not overload drainage systems or run back onto the road.
- Windrows shall be removed or ploughed back when further periods of heavy snow are anticipated. This will provide space to plough further snowfalls.

Preparation before ice and snow

- To prepare for and facilitate ice and snow treatments the following shall be considered:
- When snow is forecast, ploughs shall be prepared and positioned in order that snow clearance can start without delay as and when required.
- To facilitate the breakup and dispersal of ice and snow by trafficking, treatments shall be made before snowfall or freezing rain so that sufficient de-icer is present on the surface to provide a de-bonding layer.
- Although it will increase salt usage, before snowfall and where practicable, consideration shall be given to spreading salt as close to the forecasted event on as much of the network as possible (i.e. beyond the normal precautionary salting network). This will provide a de-bonding layer and facilitate the break up and dispersal of snow by traffic in areas where subsequent treatments may not take place for some considerable time or at all.

Depths of snow (Light snow, moderate to heavy snow)

- Two main snowfall categories are defined here – light snow and moderate/heavy snow. The reasons for this are:

  The highest practicable spread rates are considered to be 40g/m2 of dry salt. When combined with the action of traffic, this is sufficient de-icer to melt snow depths which are equivalent to 1mm of water at temperatures down to -2˚C. Generally, there is approximately 1mm of water in 5mm depth of wet snow, 10mm depth of 'normal' snow and 15mm depth of dry, powdery snow. 'Light' snow is taken to be snow equivalent to 1mm of water (or less) while snowfalls equivalent to more than 1mm are considered to be moderate/heavy.

Precautionary Treatments before snow or freezing rain

Precautionary Treatments Before Snow Or Freezing Rain		
Weather conditions	**Heavy traffic** (Categories 1 and 2)	**Light or medium traffic** (Category 3)
Light snow forecast	Spread: 20g/m2 of dry salt, or 20g/m2 of pre-wetted salt, or 15g/m2 of treated salt	Spread: 40 or 2x20g/m2 of dry salt, or 40 or 2x20g/m2 of pre-wetted salt, or 30 or 1x15g/m2 of treated salt
Moderate/Heavy snow forecast	Spread: 40 or 2x20g/m2 of dry salt, or 40 or 2x20g/m2 of pre-wetted salt, or 30 or 2x15g/m2 of treated salt	Spread: 20-40g/m² of dry salt 20-40 g/m² of pre-wetted salt 15-30 g/m² of treated salt (see Note 1)
Freezing rain forecast	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: The lower rates (e.g. 20g/m2 for dry salt) can be used if the snow is likely to settle quickly, e.g. when the road surface temperature is below zero, the road surface is not wet and the snow is not wet, and/or there is little traffic after snowfall begins and settles.		

Treatments during snowfall

General

Ploughing shall start and, where practicable, be continuous to prevent a build-up of snow.

On heavily trafficked roads it is preferable to prevent a build-up of more than 10mm depth of snow, whereas the build-up shall be no more than 50mm depth where there is a risk of compaction by traffic.

Table Treatments During Snowfall	
Plough to remove as much material as possible (e.g. slush, snow, compacted snow) (ploughing shall be as near as possible to the level of the road surface)	
No ice or compacted snow on surface	**Ice or compacted snow on surface (see Note 2)**
To provide a de-bonding layer, spread: 20g/m² of dry salt, or 18g/m² of treated salt or 24g/m2 of pre-wetted salt (See Note 1)	**Is traffic likely to compact subsequent snowfall before further ploughing is possible?**

In all cases the defined treatment routes will be adhered to, and where conditions demand a more intensive treatment in specific areas, *[Limerick City and County Council]* shall achieve this by increasing the amount of resources in use in that area unless, in exceptional circumstances, agreed with TII.

4.5.3 Snow clearance and vertical concrete safety barriers

The presence of vertical concrete safety barrier/other solid barrier on the national road network can pose problems regarding snow clearance whereby traditional ploughing techniques may not be applicable. Ploughing to the left using echelon techniques is the preferred method of snow removal adjacent to central reservation vertical concrete barriers. Lanes shall not be abandoned or used for stacking snow without the written approval of TII.

Local Authority to produce a schedule identifying the locations of vertical concrete/other solid barrier on their network and a clearance plan for each location in Appendix A.14, if applicable. This schedule shall also be cross referenced to ***Table A.4 and Appendix H*** *- route drawings and schedules. Alternatively, the schedule may form part of the route schedules.*

4.5.4 Aftercare and follow up Treatments

Include details of aftercare and follow up treatments e.g. clearing side roads and lay-bys. Limerick City and County Council will utilise their resources that the network is clear throughout

4.5.5 Arrangements for use of snow blowers

Where *[Limerick City and County Council]* proposes the use of a snow blower, approval is required from TII who shall be contacted, and approval sought.

[Limerick City and County Council] has *[number]* operatives qualified to operate snow blowers as detailed at Appendix A.6.

Include full detailed arrangements and procedures for the use of snow blowers including details of transport arrangements.

4.6 Footways, bus lanes and integrated cycleways

4.6.1 Introduction

Include area specific introduction as appropriate.

4.6.2 Policy

Appendix Policy and Procedure for the Management of Winter Maintenance

4.6.2.1 Treatment of Footways and Integrated Cycleways

The treatment of footways, integrated cycleways pedestrian bridges, paved pedestrian areas and the likes shall normally be co-ordinated with neighbouring Managing Organisations.

Footpaths and Cycleways

In times of prolonged and extreme weather Limerick City and County Council may consider targeted treatment on Footpaths and cycleways in towns, villages and city environs as resources, particularly personnel availability and Health and Safety considerations, permit. Specific requests will be sent to the relevant Municipal districts and will be dealt with on a case by case basis and will be accessed on the basis of need and the availability of resources

The Metropolitan footways have been categorised into two categories as follows;

- **Priority 1 and Priority 2**

Table: Metropolitan Winter Maintenance Policy for Footpaths

Route Designation	Description	Street/Area/Location
Priority 1	Prioritised Pedestrian Areas in Metropolitan Area	Bedford Row, Thomas Street
Priority 2	Pedestrian Areas & Main Streets in Metropolitian Area	Catherine St; Little Catherine St; Little William St; Cruises St; Todd's Row and Chapel St
	Main Commercial Streets of Metropolitan Area	William St; Henry St; O'Connell St; Patrick St; Arthurs Quay & Francis St
	Route to Colbert Train Station from pedestrian Areas	Shannon St; Roches St; Parnell St; O Connell St.
	Route to St Munchins Maternity Hospital	Sarsfield St; Ennis Road
	Footpaths on Bridges in Metropolitan Area	Matthew Bridge, Sarsfield Bridge, Thomond Bridge, Shannon Bridge, Abbey Bridge, Baal's Bridge, O'Dwyers Bridge

Rural Operational Areas

There are a number of hand operated mini salt gritters available for pedestrian areas and footpaths in the County areas. Listed below are some of the areas where salting of footpaths using these hand operated mini salt gritters could be carried out where resources permit;-

Newcastlewest, Abbeyfeale, Rathkeale, Askeaton, Kilmallock, Kilfinane, Bruff, Adare, Croom, Cappamore, Doon, Castleconnell, Hospital, Dromcolligher

4.6.2.2 Bus lanes Response and Treatment Times

The treatment of bus lanes and bus stop areas shall be in line with adjacent networks.

4.6.3 Routes

Details of all routes to be treated are contained in ***Section 1.10.2.***

4.6.4 Operations

There are a number of hand operated mini salt gritters available for pedestrian areas and footpaths in the County areas where salting of footpaths using these hand operated mini salt gritters could be carried out where resources permit

4.6.5 Resources

In times of prolonged and extreme weather Limerick City and County Council may consider targeted treatment on Footpaths and cycleways in towns, villages and city environs as resources, particularly personnel availability and Health and Safety considerations, permit. Specific requests will be sent to the relevant Municipal districts and will be dealt with on a case by case basis and will be accessed on the basis of need and the availability of resources

APPENDICES & SCHEDULES

Route Drawings & Schedules

Include route details, including unique reference, length, treatment time, salt usage, vehicle, base, instructions and inclusions/exclusions.

A sample route schedule is shown below:

Winter Maintenance Report Sheets 2024/2025

Driver : **Rate of Spread:** **Salting Operation:** Pre salting/ Post salting

Reg No : 628-12LK3432 **Gritter Type:** 8t **Salt Depot:** Dock Rd **Route No**:1

Date:	**Salting Commencement Time:**	**Salting End Time:**
Road Surface Condition (Wet/Dry):	**Frost/Snow :**	**Heavy / Light:**

Ref No	Priority	Road No	From	To:	Length (km)	Treated Length (km)	Action
1	P1	N24	From its junction with the M7 off ramp at Ballysimon	Its roundabout junction with the N24/ L-1171 Old Ballysimon Road	0.650		
2	P1	N24	Roundabout with the N24/ L-1171 (Old Ballysimon Road)				
3	P1	N24	Its roundabout junction with the N24/ L-1171 Old Ballysimon Road	To the Tipperary County boundary at Ballylahiff	26.6		
4	P1	R507	Its junction with the N24 at Cluggin Cross Roads	Its junction with the R505 at Doon village	8.3		
5	P2	R506	Its junction with the R445 at Garraunykee	To the junction with the R505 at Cappamore Village	15		
6	P2	R505	To the junction with the R506 at Cappamore Village	Its junction with the Tipperary County Boundary at Toomaline	9.4		
7	P2	L1124	Its junction with the R506 at Maddyboy	Its junction with the L-1125 at Abbington	2.9		
8	P2	L1125	Its junction with the L-1126 at Abbington	Its junction with the R-506	1.4		

Routes	National Roads	Non National Roads	Total Tonnage Used	Total Kms Treated
Salt tonnage used				**64.25**

Route Specific Comments:_____
General Comments:_____

Drivers Signature:	Date:

SHEET MUST BE FULLY COMPLETE

[1] If the length salted is less than the overall length please clarify in the Comments section.

Description column shall include full and specific details of individual exclusions and inclusions such as lay-bys.

Where appropriate, include special 'snow ploughing', extra effort routes or supplementary high-level routes.

Include details for local problem areas or areas requiring special consideration due to e.g. different surfacing types

Where appropriate, separate 'route cards' giving more detailed instructions to drivers shall be prepared and included within this appendix.

Each treatment route card should be specific for each route, detailing the route to be driven and any specific hazards or increased risks that may be encountered on that route. Each treatment route should be issued to the drivers of the route on a laminated card and kept in the machine(s) used on each route.

The treatment route card should also show a map for the treatment route, to accompanying the driving instructions. The drawing should be to a scale, and of a size, to allow the information to be displayed clearly and concisely, and show

- *The depot location*
- *Those parts of the driving route when treatment is to be applied indicated in red*
- *Those parts of the driving route when treatment is not to be applied indicated in grey*

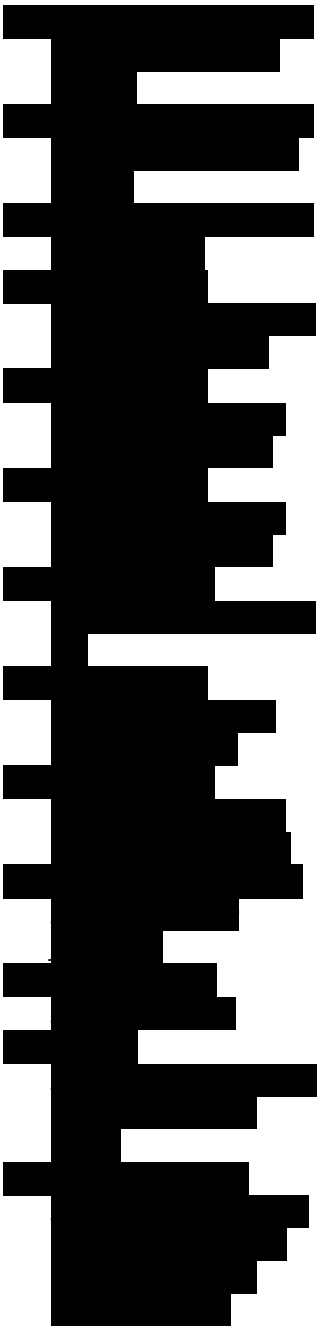
Any cross-boundary arrangements should incorporate the cross-boundary road(s) into the route treatment cards.

ROUTE CARD FOR PRECAUTIONARY TREATMENT ROUTE No. XXX N/A

Depot: XXX
Drivers/Teams: Insert names of drivers & their team(s)
Vehicle: XX tonnes, registration plate
Average Speed for route: XX km/hr
Average spread width for the route: XX m
Route Tonnage at 10 / 20 / 40 gms/m^2: XX / YY / ZZ tonnes

Road	Road Surface Material	From	To	Route Risks / Hazards	Action	Free run (km)	Spreading Distance (km)	Average Speed (km/hr)	Time (mins)
R999	HRA	Depot / Starting point for driving	Start of the R999 westbound off-ramp to the N99	Sharp RH bend at Doyles bar	Travel	0.000	--	00	00.0
N99	Porous Asphalt	Start of the R999 westbound off-ramp to the N99	End of the dedicated westbound off-ramp to R998	Increase spread rate by 25%	Salt	--	0.000	00	00.0
R998	HRA	End of the dedicated westbound off-ramp to R998	End of Regional Road at XX junction	Travel	0.000	--	00	00.0	R998
Spot Location	HRA	E.g. a particular crossroad, junction, or other, that requires a temporary increased spread width		'Boost' spread at junction with R997	Salt	--	Boost / Blast	00	00.0
L9995	HRA	Start of local road at XX junction	Landmark on L995	Steep and winding descent	Salt	--	0.000	00	00.0
L9995	HRA	Landmark on L995	Junction of L995 and L998	Parked vehicles on LHS of junction	Salt	--	0.000	00	00.0
L9998	HRA	Junction of L995 and L998	Depot / Finishing point for driving	Steep incline	Travel	0.000	--	00	00.0
			Totals		**0.000**	**0.000**			**00.0**
			Route Efficiency		**XX%**				

Vehicles and Plant Schedule

Operational Vehicle Schedule						
Owner	Location	Type	Capacity	VRN or ID	Plough No	Route
[Limerick City and County Council/Hired]	*[name] Dock Rd Depot*	*[type of vehicle] Limerick City and County Council operates:* 	*[m^3 for spreaders* *10.5 M3* *6.0 M3* *4.0 M3* *9.0 M3* *6.0 M3* *6.0 M3* *2.0 M3* *7.5 M3*	*[VRN of Identification Number]*	*[no.]* *2* *3* *1* *2* *2* *2* *1* *1* *3* *10* *4*	*[route reference]* *All*

Reserve Vehicle Schedule						
Owner	Location	Type	Capacity	VRN or ID	Plough No	Route
[Local Authority /Hired]	*[name]*	*[type of vehicle]*	*[m^3 for spreaders]*	*[VRN of Identification Number]*		*[route reference]*
LCCC	Mach Yard	[redacted]	9.0M3	[redacted]	B827	Any

Additional Vehicle Schedule – e.g. Temporary Hire Vehicles						
Owner	Location	Type	Capacity	VRN or ID	Plough No	Route
[Local Authority /Hired]	*[name]*	*[type of vehicle]*	*[m^3 for spreaders]*	*[VRN of Identification Number]*		*[route reference]*
None						

Operatives Schedule

Refer to AM-PAV-06051 – Winter Service Manual in the completion of this schedule.A.6

Operative Schedule								
Base	Name	Contact details	Winter Qualification held and their coverage	Winter Qualification Number	Qualification Expiry	Driving Licence No	Driving Licence Category	Driver CPC Modules completed
[base location]	*[name]*	*[phone number details]*	*[details]*	*[reference]*	*[date]*	*[reference]*	*[reference]*	*[Driver CPC and modules taken with dates]*
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date

[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date

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[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
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[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
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[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]				C	Up to date
[redacted]	[redacted]	[redacted]	[redacted]					

[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]						
[redacted]	[redacted]	[redacted]						

Depots and Facilities Schedule A.14

Include details of all Depots and other facilities including full postal address, contact details, and facilities available e.g. salt storage, loading hoppers, fuel storage, back-up power supply, communications, garaging, workshops, welfare, etc.

A sample Depot schedule is shown below:

Depot and Facilities Schedule						
Depot or Facility Name	Owner /Lessor	Postal Address	Purpose	Access Arrangements	Contact Details	Facilities
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Internal Contact List A.9

a) Role	Name	Title	Phone No
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

External Contact List A.10

Name	Role	Organisation	Telephone	Fax	Email
[redacted]					

Standard Forms

Pre and post treatments are archived on Viasala data base

This appendix includes the following standard forms:

i) Notification of Proposed Treatments

ii) Daily Operational Update

iii) Hourly Operational Update

Decision Maker Duty Rota A.11

Rota of personnel who have the authority to make decisions in relation to the provision of winter service, i.e. Decision Maker, on operational issues relating to the Local Authority's winter service.

Local Authority Name: Limerick City and County Council

Week starting Monday	Duty Engineer's Initials	Week starting Monday	Duty Engineer's Initials	Week starting Monday	Duty Engineer's Initials	Week starting Monday	Duty Engineer's Initials
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]		

Duty Engineer's Name & Initials	Office Phone No	Office E-mail Address	Mobile No
[redacted]	[redacted]		
[redacted]			

Send to: CAFO, Met. Éireann, Glasnevin Hill, Dublin 9. Attention: Duty SMO. E-mail: forecasts@met.ie

Winter Service Desk Decision Makers

Level of Preparedness for 2024-2025 Season.

Limerick City and County Council has the competencies to deal with all situations extending from prevention to dealing with extreme weather/climatic events and aftermaths.

A programme of training has extended to all operators involved in winter maintenance of both Priority 1 and 2 routes which involves the use of heavy unit gritters and mini gritter units. This has involved all drivers involved in Priority 1 units completing accredited training through national training centres. This has been extended to those involved in smaller units to the best available training though not accredited for personnel involved in Priority 2 routes only.

A roster will be prepared of all drivers including all Priority 1 & 2 drivers and an appropriately qualified standby for regular changeover and to provide adequate standby for intensive works during extreme weather condition.

Adequate salt supplies are in place and other stocks are on call as necessary. Lines of communication are open to all adjoining authorities to ensure that there is no conflict in terms of operations or omissions during periods of intensive operations or extreme events

Training Records

Refer to the TII Winter Service Manual and record staff other than the operatives defined in Appendix A.6 with relevant training of winter service delivery. Training shall be recorded and evidenced in respect of winter service decision making, weather forecast interpretation, etc.

5. Apendices

Appendix A

Depots and Staff Contact Details

Appendix B

Duty Engineer Roster & Arrangements

Appendix C

Mechanics, Fitters, Drivers Contract Details

Appendix D

Tipperary County Council Duty Engineer Roster

Appendix E

PPP Company / Private Winter Service Operators Details

Appendix F

Policy & Procedure for Management of Winter Maintenance

Appendix G

General Risk Assessment Winter Services Operations

Appendix H

Route Maps

Appendix I

Operator & Plant Guidance Notes

Appendix J

TII Circular

Appendix K

Protocols

Appendix L

Winter Maintenance Report Sheets

Appendix M

Maximum Load Capacity

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Ionad Ghnó Gheata na Páirce,
Stráid Gheata na Páirce
Baile Átha Cliath 8, Éire

Parkgate Business Centre,
Parkgate Street,
Dublin 8, Ireland

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