

Design Manual for Roads and Bridges



General Principles and Scheme Governance
Maintenance & Operation

GM 704

Operational requirements for severe weather

(formerly Severe weather plan template)

Revision 0

Summary

This document sets out requirements in relation to the delivery of the severe weather service.

Application by Overseeing Organisations

Any specific requirements for Overseeing Organisations alternative or supplementary to those given in this document are given in National Application Annexes to this document.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

This is a controlled document.

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Release notes

| Version | Date | Details of amendments |
|---------|----------|---|
| 0 | Apr 2020 | GM 704 is a new DMRB document and has been written to make it compliant with the new Highways England drafting rules. |

Foreword

Publishing information

This document is published by Highways England.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This is a new document to cover the requirements for the management of severe weather impacting on the Overseeing Organisation's motorways and all-purpose trunk roads.

Severe weather includes snow, ice, frost, freezing rain, hail, strong winds, heavy rain, fog and high temperatures.

England and Wales have a duty to ensure, as far as reasonably practicable, that safe passage along a highway is not endangered by snow or ice, detailed in the Highways Act 1980 Section 41(1A) (England and Wales) Highways Act 1980 [Ref 2.N].

Scotland has a legal responsibility to keep their roads free from snow and ice, detailed in Roads (Scotland) Act 1984 Section 34 Roads(S) 1984 [Ref 4.N].

Northern Ireland has the discretionary power to prevent snow and ice interfering with safe passage as detailed in The Roads (Northern Ireland) Order 1993 Section 9 R(NI)O 1993 [Ref 5.N].

Severe weather service is planned in advance to allow a structured, disciplined, coordinated and controlled approach to safely manage and mitigate the impact of forecast and changing severe weather conditions. It is a systematic and coordinated use of human, institutional, mechanical and technical resources to provide an effective and efficient service to meet the legal obligation.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 3.N] apply to this document.

Terms and definitions

Terms and definitions

| Term | Definition |
|-----------------------------|---|
| Alert procedures | Predefined message to warn road users of severe weather affecting driving conditions. |
| Competent forecast provider | A recognised and industry leading organisation specialising in road weather forecasts. |
| Cross boundary agreements | Plans and procedures agreed with other highway authorities in the delivery of the severe weather service. |
| Decision making process | A predetermined process followed to deliver effective and efficient mitigation measures for severe weather. |
| Fog | Low cloud that impedes visibility to less than 1000 metres. |
| Forecast service | The application of science and technology to predict weather conditions for a given location and time. |
| Freezing rain | Precipitation that falls as a super cooled water droplet until it strikes a cold surface and almost instantly freezes. |
| Frost | A cover of ice crystals on objects below freezing that are exposed to the air. |
| Hail | Pellets of frozen rain. |
| Heavy rain | Rain expected to continue for at least two hours and to give at least 15mm within a 3-hour period or, following previous heavy rain events, 25mm/day, see Met Office Types of Weather [Ref 1.I]. |
| Heavy snow | Snow falling at a rate of approx. 2 cm/hour or more expected for at least two hours, see Met Office Types of Weather [Ref 1.I]. |
| High temperatures | Expectation of significantly higher than average temperatures. |
| High winds | Repeated gusts of 70 m.p.h or more over inland areas, see Met Office Types of Weather [Ref 1.I]. |
| Ice | Frozen water. |
| Precautionary procedures | Constitutes actions and alert procedures taken in advance of severe weather to minimise risk to customer safety and network disruption. |
| Reactive procedures | Constitutes actions and alert procedures taken during and after severe weather to minimise risk to customer safety and network disruption. |
| Severe weather | Meteorological phenomenon with the potential to endanger safe passage or cause disruption on the road network including heavy snow, ice, frost, freezing rain, hail, strong winds, heavy rain, fog and high temperatures. |
| Severe weather plan | Operational and reference document detailing the approach to the severe weather service including precautionary and reactive procedures. |
| Severe weather service | A service provided by the Overseeing Organisation and its contractors for the delivery of its precautionary and reactive procedures for severe weather. |

Terms and definitions (continued)

| Term | Definition |
|----------------------|---|
| Stakeholders | People and/or organisations who can be affected by the execution of precautionary and reactive procedures in the event of severe weather. |
| Strategic locations | Nationally important facilities such as transport hubs, emergency services and salt reserves both on and off network. |
| Vulnerable locations | Locations vulnerable to particular severe weather events. |

1. Scope

Aspects covered

- 1.1 The requirements in this document shall be followed for the management of all aspects of severe weather impacting on the Overseeing Organisation's motorways and all-purpose trunk roads.

Implementation

- 1.2 This document shall be implemented forthwith on all schemes on the Overseeing Organisation's motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 3.N].

Use of GG 101

- 1.3 The requirements contained in GG 101 [Ref 3.N] shall be followed in respect to activities covered by this document.

2. General service

Planning

- 2.1 Health and safety risk assessments shall be undertaken to cover the operational aspects of severe weather following the approach set out in the Overseeing Organisation's safety risk assessment document.
- 2.2 A severe weather plan shall be developed to demonstrate preparedness for severe weather, detailing precautionary and reactive procedures.
- 2.3 Flood risk management shall be undertaken as set out in CD 535 [Ref 1.N].

Vulnerable locations

- 2.4 Locations vulnerable to severe weather conditions that make driving hazardous shall be identified and documented.
- 2.5 Specific mitigation measures for vulnerable locations shall be identified and documented.

Strategic locations

- 2.6 Strategic locations reliant on the road network for access and egress shall be identified and documented.
- 2.7 Specific mitigation measures to maintain access and egress to strategic locations shall be identified and documented.

Cross boundary agreements

- 2.8 Cross boundary agreements shall be in place at the interface with networks adjacent to motorways and all-purpose trunk roads to ensure a coordinated service.
- 2.8.1 Arrangements made with adjacent highway authorities and stakeholders to provide a service should be documented and checks undertaken to ensure the service has been carried out.
- 2.9 Precautionary and reactive procedures shall be designed in collaboration with adjacent highway authorities and stakeholders.

Resources

- 2.10 All vehicles, plant, depot facilities, equipment and materials shall be prepared and operationally ready for the delivery of the severe weather service.
- 2.10.1 Being prepared and operationally ready for the delivery of the severe weather service should include vehicle servicing and maintenance, calibration of spreaders and salt saturators and maintaining stock levels of de-icing materials.
- 2.11 A forecast service shall be provided through a competent forecast provider.

Delivery

- 2.12 The decision making process for delivery shall include evaluation of pertinent information to determine the appropriate action(s) and communication for execution.

NOTE Pertinent information includes but is not limited to forecast, observed road state and traffic flow.

- 2.13 All decisions shall be evidence based and subject to continuous monitoring, recording and review in line with organisational processes.
- 2.14 Precautionary procedures shall be conducted in advance of forecast severe weather to mitigate the impact on motorways and all-purpose trunk roads.

- 2.15 Reactive procedures shall be conducted during and after severe weather where safe to do so to mitigate the impact on motorways and all-purpose trunk roads.
- 2.16 Alert procedures shall be formulated and action taken to minimise risk to safe passage on motorways and all-purpose trunk roads posed by severe weather.

Communication

- 2.17 An agreed resilient communication system for individuals involved in the delivery of the severe weather service shall be provided and maintained.

Record keeping

- 2.18 All decisions related to precautionary and reactive procedures shall be recorded in the Overseeing Organisation's agreed format.
- 2.19 All actions related to precautionary and reactive procedures shall be recorded in the Overseeing Organisation's agreed format.
- 2.20 All relevant qualifications and training of those who deliver the severe weather service shall be recorded and format agreed with the Overseeing Organisation.
- 2.21 All vehicle and equipment maintenance and calibration certificates shall be recorded in the Overseeing Organisation's agreed format.

3. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| | |
|---------|---|
| Ref 1.N | Highways England. CD 535, 'Drainage asset data and risk management' |
| Ref 2.N | The National Archives. legislation.gov.uk . Highways Act 1980, 'Highways Act 1980' |
| Ref 3.N | Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges' |
| Ref 4.N | The Stationery Office. Roads(S) 1984, 'Roads (Scotland) Act 1984' |
| Ref 5.N | legislation.gov.uk . R(NI)O 1993, 'The Roads (Northern Ireland) Order 1993' |

4. Informative references

The following documents are informative references for this document and provide supporting information.

| | |
|---------|--|
| Ref 1.1 | Met Office Types of Weather, 'Met Office Types of Weather' |
|---------|--|

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General Principles and Scheme Governance
Maintenance & Operation

GM 704

England National Application Annex to GM 704 Operational requirements for severe weather

Revision 0

Summary

This National Application Annex sets out the Highways England specific requirements in relation to the delivery of the severe weather service.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

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Release notes

| Version | Date | Details of amendments |
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| 0 | Apr 2020 | Highways England National Application Annex to GM 704. |

Foreword

Publishing information

This document is published by Highways England.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This National Application Annex sets out Highways England's asset delivery specific requirements in relation to the severe weather service. This document will contribute to facilitating a coordinated multi-agency approach to mitigate the impact of severe weather on the motorways, all-purpose trunk roads, cycleways and footways maintainable by Highways England.

Guidance and supporting information will be made available on the data management system.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 3.N] apply to this document.

Terms and definitions

Terms and definitions

| Term | Definition |
|--------------------------|--|
| Airwave | A nationwide private mobile radio network in Great Britain that is based on digital terrestrial trunked radio (TETRA) technology. NOTE: Airwave is restricted by its licence to offer services on the airwave network only. |
| Anti-icing | Application of materials in advance of the forecast severe weather, or as soon as possible in the event of unforeseen severe weather, to prevent formation of ice, frost or adhesion of snow. |
| Alert procedures | Predefined message to warn road users of severe weather affecting driving conditions. |
| Bronze command | Operational responsibility for controlling and coordinating Highways England's response to a situation. NOTE: Bronze command can also be referred to as operational command. |
| Cold debrief | Reviews held to resolve any issues determined during hot debrief and are carried out once all details of the severe weather event are known. |
| Competent person | Someone who has been assessed as having sufficient training and experience or knowledge and other qualities in relation to the subject at hand, allowing them to make decisions and carry-out actions. NOTE: The level of competence required depends on the complexity of the situation. |
| Cycleways | Right of way for cyclists and pedestrians along and across the motorway and all-purpose trunk road network. |
| Data management system | An electronic system, such as the severe weather information service, used to input, record and display information in relation to the severe weather service. |
| De-icing | Process of removing snow, ice or frost from a surface. |
| Escalation | Escalation includes operational (bronze), tactical (silver) or strategic (gold) command levels to align with incident hierarchy in-line with the Highways England Crisis Management Manual. |
| Footways | Right of way for pedestrians along and across the motorway and all-purpose trunk road network. |
| Gold command | Strategic level responsibility, sets the organisation's strategy and policy for the resolution of incidents. NOTE: Gold command can also be referred to as strategic command. |
| Head of service delivery | As per the operational structure. |

Terms and definitions (continued)

| Term | Definition |
|--------------------------------|---|
| Hot debrief | Reviews undertaken within 24 hours (where practicable) after the end of a severe weather event to discuss and document issues, share lessons learned and determine future best practice. |
| Mutual aid | Plans and procedures agreed with other highway authorities in the delivery of the severe weather service. |
| Operational assessment reports | A report to be completed annually reviewing the severe weather service. |
| Regional director | As per the operational structure. |
| Salt management plan | Is prepared by each area to provide evidence of storage and supply arrangements in line with the threshold levels. |
| Service delivery timetable | Is available on the data management system and sets out key dates for service delivery preparedness and the provision of reports. |
| Severe weather decision maker | The severe weather decision maker reviews forecast information, liaises with the forecast provider and monitors current conditions in order to select mitigation measures and notifies the contractor and stakeholders of proposed action once it has been verified by the severe weather verifier. |
| Severe weather desk | Part of the escalation process to coordinate efforts of those delivering the severe weather service and stakeholders to mitigate the impact of escalated severe weather. |
| Severe weather plan | Operational and reference document detailing the approach to the severe weather service including precautionary and reactive procedures. |
| Severe weather verifier | The severe weather verifier verifies the decisions made by the severe weather decision maker prior to the decision maker issuing notification of proposed action to the contractor and stakeholders. |
| Silver command | Tactical level, determines aims and objectives, makes decisions and provides direction and leadership to Highways England's bronze commanders to bring about early, effective and efficient resolution. NOTE: Silver command can also be referred to as tactical command. |
| Snow gates | Gates located along the all purpose trunk road network that can be used to close the road in the event of snow. |

E/1. Outcomes

E/1.1 The following outcomes shall be delivered:

- 1) safe passage on motorways and all-purpose trunk roads is not endangered by ice or snow in accordance with Chapter 66 of the Highways Act 1980 [Ref 2.N];
- 2) the risk to safe passage on motorways and all-purpose trunk roads posed by fog, high temperatures, heavy rain, high winds is minimised.

E/2. Planning

Severe weather plan

- E/2.1 Response to severe weather, mitigation measures and escalation procedures shall be designed, tested and documented within the severe weather plan.
- E/2.1.1 The severe weather plan should be continually reviewed following hot and cold de-briefs to capture lessons learned and deliver a safe, resilient and efficient service.
- NOTE 1 *Headings for a severe weather plan, illustrating the necessary information required to demonstrate preparedness, is available within Appendix E/A.*
- NOTE 2 *The draft severe weather plan is submitted, reviewed, approved and implemented in accordance with the service delivery timetable.*
- E/2.2 An annual exercise shall be undertaken to test the severe weather plan.
- E/2.3 The regional director shall be accountable for assuring delivery of the outcomes defined in this National Application Annex (NAA) and for assuring the development and delivery of the severe weather plan.
- E/2.4 The head of service delivery shall be responsible for the development and the delivery of the severe weather plan.

Resources

Labour

- E/2.5 The driving of vehicles and operate plant and equipment shall be undertaken by competent persons in accordance with the requirements of GG 102 [Ref 4.N].
- E/2.6 The severe weather service shall be carried out by competent severe weather decision makers and severe weather verifiers.

Vehicles, plant and equipment

- E/2.7 All vehicles and plant shall be serviced and maintained in accordance with manufacturers' recommendations and be operationally ready.
- NOTE *Operationally ready includes roadworthy checks, calibrated equipment, adequate fuel and treatment materials for task and plough blade attached when appropriate.*
- E/2.8 All spreading vehicles shall be calibrated in accordance with BS 1622 [Ref 5.N].
- E/2.9 All equipment such as salt saturators, high volume pumps and environmental sensor stations shall be maintained and calibrated in accordance with manufacturers' recommendations.

Anti/de-icing materials

- E/2.10 The suitability of materials to be used for anti/de-icing shall be evaluated by reviewing health, safety, environment and effectiveness.
- E/2.11 Salt shall be stored and restocked in accordance with the salt management plan.
- E/2.12 Anti/de-icing materials shall be assessed and handled in accordance with SI 2002/2677 [Ref 1.N].

Communication

- E/2.13 All stakeholders shall be identified and liaison arrangements developed.
- E/2.14 A backup communication system shall be established to ensure liaison with operatives is maintained.
- E/2.14.1 The primary and backup communications systems may include airwave, emergency services network or mobile telephone.
- E/2.15 Relevant licences and authorisations for agreed communications systems shall be in place at all times.

E/3. Delivery

E/3.1 The impact of severe weather shall be mitigated in the interest of customer safety and minimisation of disruption to motorway and all-purpose trunk roads taking account of forecast, current weather conditions and information from adjacent highway authorities.

Actions for severe weather conditions

- E/3.2 Measures shall be implemented in line with operational procedures to mitigate the risk and impact associated with each severe weather type.
- E/3.2.1 Gullies and culverts on sections of road that are known to be susceptible to flooding should be checked in advance of forecast heavy rain.
- E/3.3 Alert procedures shall be initiated in line with operational procedures to mitigate the risk and impact associated with each severe weather type.
- E/3.4 Precautionary procedures shall be conducted in advance of and as necessary during the time ice formation, hail, frost, freezing rain or snow is forecast.
- E/3.4.1 For hard shoulder, carriageway marginal strips or emergency refuge areas, anti-icing/de-icing material coverage should be 50% at the full rate of spread.
- E/3.5 Precautionary procedures to mitigate the effects of ice formation, hail, frost, freezing rain or snow through treatment of anti-icing materials shall be completed within two hours.
- E/3.6 Reactive procedures shall be conducted as soon as reported ice on the network is confirmed.
- E/3.7 Reactive procedures for snow clearance, such as ploughing, shall be conducted in a safe manner to maintain an operational network.
- NOTE *An operational network is at least one unobstructed lane open to traffic in each direction on the motorway and trunk road network.*
- E/3.8 Snow clearance shall be conducted following the requirements detailed in Table E/3.8.

Table E/3.8 Snow clearance requirement

| Route classification | Red | | Amber | | Green | | Slip and link roads |
|--|---|-----------|----------|-----------|----------|-----------|---|
| Number of existing lanes | 1 or 2 | 3 or more | 1 or 2 | 3 or more | 1 or 2 | 3 or more | Not applicable |
| Criteria | Minimum number of lanes to be kept clear of snow, as far as reasonably practicable. | | | | | | |
| Between the hours of 06:00 - 20:00 | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| Between the hours of 20:00 - 06:00 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| Following the cessation of snow all lanes are to be clear of snow within | 12 hours | | 18 hours | | 24 hours | | In accordance with route classification |

E/3.9 Existing snow gates shall be implemented to close the road when safe passage is compromised.

Escalation

E/3.10 Escalation shall be implemented prior to the forecast commencement of severe weather or soon after in the event of unforeseen severe weather.

NOTE *Escalation includes activation of the severe weather desk in line with operational (bronze), tactical (silver) or strategic (gold) command levels as set out in the 'Highways England Crisis Management Manual HE CMM [Ref 1.]*.

Reporting

- E/3.11 The data management system shall be kept up to date to ensure a true and accurate representation of the current situation.
- NOTE The data management system provides users with a single, consistent set of weather and winter treatment information to help manage the impact of routine and extreme weather events.*
- E/3.12 All requests to provide or receive support, mutual aid and subsequent decisions shall be documented in an agreed format.
- E/3.13 Debriefs shall be completed within the specified time frames, using the agreed debrief template, as prescribed within the 'Highways England Crisis Management Manual' HE CMM [Ref 1.1].
- E/3.14 Debriefs shall be conducted in collaboration with all relevant parties involved in response to the escalated severe weather event.
- NOTE Debriefs can be 'hot' or 'cold' depending on the escalation and response to the severe weather event.*
- E/3.15 Lessons learnt and outcomes from hot and cold de-briefs shall be recorded and shared with all relevant parties to allow continuous improvement.
- E/3.16 Operational assessment reports shall be completed in accordance with the service delivery timetable.
- NOTE Headings for an operational assessment report are in Appendix E/B.*

E/4. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| | |
|---------|---|
| Ref 1.N | The National Archives. Legislation.co.uk. SI 2002/2677, 'Health and Safety. The Control of Substances Hazardous to Health Regulations 2002' |
| Ref 2.N | The National Archives. legislation.gov.uk. Highways Act 1980, 'Highways Act 1980' |
| Ref 3.N | Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges' |
| Ref 4.N | Highways England. GG 102, 'Quality management systems for highway works' |
| Ref 5.N | BSI. BS 1622, 'Specification for spreaders for winter maintenance' |

E/5. Informative references

The following documents are informative references for this document and provide supporting information.

| | |
|---------|---|
| Ref 1.1 | HE CMM, 'Highways England Crisis Management Manual' |
|---------|---|

Appendix E/A. Severe weather plan structure

Each Highways England asset delivery region, in collaboration with the contractor, is accountable for the creation and maintenance of its own severe weather plan. This plan should be used to demonstrate the procedures and operational arrangements for the delivery of an effective severe weather service to uphold the outcomes as detailed in this document.

The following headings should be used, as a minimum, to create each plan:

Table E/A.1 Severe weather plan

| Headings | Description of content |
|----------------------------|---|
| Introduction | Purpose of the document, weather type risk periods, service timetable, contractual arrangements, description of area network, extent of area network, area features, vulnerable and strategic locations. |
| Roles and responsibilities | <p>To include as a minimum:</p> <ol style="list-style-type: none"> 1) details of key personnel responsible for the delivery of the severe weather service; 2) definitions and roles of personnel responsible for decision making; 3) duty rota; 4) organogram detailing the structure for the delivery of the severe weather service; 5) staffing levels 6) details of staff training; 7) statements on health and safety covering both Highways England's and the contractor's roles; 8) details on the command and control process. |

Table E/A.1 Severe weather plan (continued)

| | |
|--------------------------|--|
| Liaison and arrangements | <p>To include as a minimum:</p> <ol style="list-style-type: none"> 1) details of internal communication arrangements (including contingency arrangements); 2) details of external communication arrangements including stakeholders important to operational effectiveness; 3) details of communication arrangements with highway schemes; 4) statement on media liaison arrangements; 5) details of mutual aid agreements and cross boundary agreements; 6) details of abandoned vehicle arrangements 7) procedure for incidents involving winter service vehicles 8) details of escalation arrangements including the stages of severe weather desk establishment, reference to the crisis management manual and activation of the incident response plan; 9) information on the severe weather information system; 10) details of the forecast provider; 11) details of environmental sensor stations and domain arrangements. |
|--------------------------|--|

Table E/A.1 Severe weather plan (continued)

| | |
|---------------------------------|--|
| Reporting | <p>To include as a minimum:</p> <ol style="list-style-type: none"> 1) details on severe weather reporting including minimum daily reporting thresholds during the operational winter period; 2) details of reporting procedures for severe weather events, including reporting structure and times; 3) details of additional reporting including non-warranty defects, maintenance for Highways England owned winter service vehicles and vehicle off road figures; 4) details of record keeping arrangements for: <ol style="list-style-type: none"> a) weather forecasts; b) actual weather conditions; c) reports received; d) decisions made; e) instructions given; f) actions taken; g) liaison and communication logs; h) hot/cold de-briefs; i) conversations with the forecast provider; j) material usage; k) fleet breakdowns; l) vehicle data logging records; m) use of additional resources; n) road closures/blockages due to weather conditions; o) complaints received relating to conditions due to weather and end of season reports; 5) statement on the review process |
| Materials, storage and vehicles | <p>To include as a minimum:</p> <ol style="list-style-type: none"> 1) details of depots, fuel supply and storage arrangements; 2) details of treatment materials, production, storage and supply arrangements; 3) details of vehicles and plant including operational reserve winter service vehicles and contingency arrangements, vehicle maintenance arrangements, vehicle breakdown and recovery arrangements, vehicle preparation and supply chain partners. |
| Winter service routes | <p>To include as a minimum, summary of winter service routes including route id, route type, treatment type, length and target/design treatment time.</p> |

Table E/A.1 Severe weather plan (continued)

| | |
|---|---|
| Actions for weather conditions | <p>To include as a minimum:</p> <ol style="list-style-type: none"> 1) details of treatments for precautionary procedures including treatment types, spreading techniques and operational considerations; 2) details of treatments for reactive procedures including ploughing and snow clearance techniques, spreading techniques, aftercare, follow up treatments and arrangements for use of snowblowers; 3) details of vulnerable location mitigation plans, operational considerations and treatment types in relation to hazards posed by severe weather; 4) details of precautionary and reactive procedures for an area wide snow event. |
| Winter service route schedules and drawings | To include as a minimum, route schedules and drawings for each winter service route |
| Appendices | Appendices should be used to supplement the operational details provided in the severe weather plan. |

Appendix E/B. Operational assessment report structure

In line with the service timetable, Highways England, in collaboration with the contractor, is required to submit an operational assessment report detailing lessons learnt and good practice from the previous operational winter period.

The following headings should be used, as a minimum, to create each operational assessment report:

Table E/B.1 Operational assessment report

| Heading | Description of content |
|--|---|
| Introduction | Brief area specific introduction. |
| Winter preparations | Summary of what pre-season severe weather planning was conducted, aspects implemented for the summer service activities and the severe weather plan. |
| Actions completed | Number and type of treatments over the period. |
| Weather forecasting, ice prediction and environmental sensor station sites | <ol style="list-style-type: none"> 1) Brief review/analysis of forecast providers performance. 2) Details of environmental sensor station performance including failures, non-availability of equipment and impact on service delivery. |
| Decision making, treatment times and reports of ice | <ol style="list-style-type: none"> 1) Summary of decision making performance over the period. 2) Details of treatments that exceeded the time stipulated in the severe weather plan. |
| Fleet performance | Details of issues experienced with the winter fleet including breakdowns and defects. |
| Severe weather events and incidents | <ol style="list-style-type: none"> 1) Details of all severe weather events throughout the year. 2) Summary of how many severe weather desks were held, the date and duration of each, the reason they were held and how they were managed. 3) Summary of all severe weather related incidents. |
| Vulnerable locations | <ol style="list-style-type: none"> 1) Overview of any issues arising at vulnerable locations. 2) Overview of newly identified vulnerable locations. |

Table E/B.1 Operational assessment report (continued)

| | |
|-------------------------------|--|
| Treatment material management | <ol style="list-style-type: none"> 1) Details on pre-season salt stock planning. 2) Actions proposed to implement the next salt restocking plan. 3) Details of treatment materials used during the previous period. |
| Mutual aid | Details of all mutual aid requests. |
| Depots and facilities | Details of issues and changes made to depots and facilities. |
| Liaison and communications | Details of any additional pre-season activities and any in-season and post season liaison and communication arrangements. |
| Health and safety | Details of any incidents relating to health and safety whilst delivering the severe weather service. |
| Innovations | Details of any innovations developed and/or delivered during the period including reasoning behind the change and the benefit it provides. |
| Operational issues | Details of any other operational issues. |
| Appendices | Include severe weather action tracker. |

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Design Manual for Roads and Bridges



General Principles and Scheme Governance
Maintenance & Operation

GM 704

Northern Ireland National Application Annex to GM 704 Operational requirements for severe weather

Revision 0

Summary

This National Application Annex sets out the Department for Infrastructure Northern Ireland specific requirements in relation to the delivery of the severe weather service.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated team in the Department for Infrastructure, Northern Ireland. The email address for all enquiries and feedback is: dcu@infrastructure-ni.gov.uk

This is a controlled document.

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Release notes

| Version | Date | Details of amendments |
|---------|----------|---|
| 0 | Apr 2020 | Department for Infrastructure, Northern Ireland National Application Annex to GM 704. |

Foreword

Publishing information

This document is published by Highways England on behalf of Department for Infrastructure, Northern Ireland.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This National Application Annex sets out the Department for Infrastructure Northern Ireland specific requirements in relation to the delivery of the severe weather service.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 1.N] apply to this document.

NI/1. Applicability of this document

NI/1.1 GM 704 shall not apply in Northern Ireland.

NOTE Department for Infrastructure Northern Ireland has a Winter service RSPPG E022 Departmental policy and procedures guide RSPPG E022 [Ref 2.], which relates to the provision of winter service operation to, as far as possible, permit main road traffic to move safely and freely in wintry conditions.

NI/1.1.1 Winter service RSPPG E022 RSPPG E022 [Ref 2.] should not be read in isolation but should be read in conjunction with the Emergency Response Plan RSPPG E035 Departmental policy and procedures guide RSPPG E035 [Ref 1.], describing the procedures to be followed by key personnel when responding to a range of possible roads related emergencies.

NI/2. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

| | |
|---------|---|
| Ref 1.N | Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges' |
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NI/3. Informative references

The following documents are informative references for this document and provide supporting information.

| | |
|---------|---|
| Ref 1.1 | Department for Infrastructure, Northern Ireland. RSPPG E035, 'Emergency Response Plan RSPPG E035' |
| Ref 2.1 | Department for Infrastructure, Northern Ireland . RSPPG E022, 'Winter service RSPPG E022' |

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General Principles and Scheme Governance
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GM 704

Scotland National Application Annex to GM 704 Operational requirements for severe weather

Revision 0

Summary

There are no specific requirements for Transport Scotland supplementary or alternative to those given in GM 704.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Transport Scotland team. The email address for all enquiries and feedback is: TSSStandardsBranch@transport.gov.scot

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General Principles and Scheme Governance
Maintenance & Operation

GM 704

Wales National Application Annex to GM 704 Operational requirements for severe weather

Revision 0

Summary

There are no specific requirements for Welsh Government supplementary or alternative to those given in GM 704.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Welsh Government team. The email address for all enquiries and feedback is: Standards_Feedback_and_Enquiries@gov.wales

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