

**RESILIENT NETWORK REVIEW****Report of the Corporate Director for Place Management & Regeneration****1. INTRODUCTION**

- 1.1. The Government's response to the 2014 Transport Resilience Review identified a need for local authorities to develop and identify a resilient network for their highway network. This network is expected to be based on risk and need as well as the road classifications of the network. The action was included in the Department for Transport (DfT) incentive fund self-assessment as a requirement to access the funds. The designated resilient network provides a prioritisation for the overall highway network on where to direct resources to ensure the network remains open or is reopened first after an incident.
- 1.2. The resilient network was initially set up to ensure that during extreme weather conditions, access to key services and necessary support to the economy are maintained. Extreme weather is considered to be: Heatwaves, High Winds, Heavy Rain and Flooding, Extreme Cold, Snow and Ice. The network identified was also of relevance for other incidents where the prioritisation of route clearance/repair was required.
- 1.3. The Council is now by the DfT also being asked to provide consideration of industrial action, major incidents and other local risks beyond weather related incidents impacting on the highway. The document has been updated to reflect this. The Government also recommends that the network is reviewed every two years. It has been 2 years since the original network was identified and so this review has been undertaken.

**2. PRIORITISATION PROCESS FOR THE NETWORK**

- 2.1. In order to review the resilient network there is a need to consider the identified:
  - Key service locations.
  - Key locations of economic value.
  - Priorities for keeping the different locations accessible under extreme service pressures, for example, constant snowfall.
  - Locations which under certain conditions should be closed and bypassed for safety purposes.
- 2.2. The winter maintenance network is well established and remains an integral element of the development of the resilient network.

2.3. The routes will still need to be amended to ensure they can fulfil the more specific role of the resilient network for a range of issues beyond cold weather. This will need to include the consideration of potential industrial action, major incidents and other local risks.

2.4. Key services are classified as:

Primary (access to be maintained even when resources are scarce, or reopened as soon as possible)	<ul style="list-style-type: none"> <li>- Hospitals with Accident and Emergency Departments</li> <li>- Police, fire and ambulance stations</li> <li>- Bus and rail stations</li> <li>- Bus garages and depots</li> <li>- Major 'A' roads, bus routes and key transport routes (inc. priority 1 footways)</li> <li>- Salt storage depots (in Winter)</li> <li>- Rest centres as identified in the emergency plan: <ul style="list-style-type: none"> <li>o Houldsworth Village Target Fitness Centre, Broadstone Road, Reddish, SK5 7AT</li> <li>o Life Leisure Grand Central, Stockport Exchange, Stockport, Wellington Rd South, Stockport, SK1 3TA</li> <li>o Life Leisure Avondale Recreation Centre, Heathbank Road, Cheadle Heath, SK3 0UP</li> <li>o Sanderling Building, Bird Hall Lane, Cheadle Heath, SK3 0RF</li> <li>o Life Leisure Cheadle, Cheadle Road , Cheadle SK8 1JR</li> <li>o Stockport Sport Village, Lambeth Grove, Woodley, SK6 1QX</li> <li>o Life Leisure Romiley, Holehouse Fold, Romiley, SK6 4BB</li> <li>o Marple Hall School, Hilltop Drive, Marple, SK6 6LB</li> </ul> </li> <li>- Key nursing homes facilities to relieve bed blocking at hospitals</li> <li>- TfGM key route network</li> </ul>
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<p>Secondary (access to be prioritised where incidents persist and resources are available to be utilised on a priority basis)</p>	<ul style="list-style-type: none"> <li>- Secondary bus routes, school routes and feeder roads which carry high levels of traffic classified as secondary/tertiary gritting routes.</li> <li>- Priority 2 footpaths</li> <li>- Care homes with nursing care facilities</li> <li>- Educational facilities (weekdays)</li> <li>- Large medical clinics/ non A &amp; E hospitals</li> <li>- Utility facilities in need of access (on request)</li> <li>- Key economic locations: <ul style="list-style-type: none"> <li>▪ Town and District Centres</li> <li>▪ Large Retail/Business Parks</li> </ul> </li> </ul>

2.5. While under all but the most extreme conditions the presumption would be to keep the network open. However, in certain circumstances the closure of routes should be considered and alternatives planned. The locations listed below are likely to be closed for public safety if certain conditions are met:

- Sections of road liable to flood.
- Bridges in extreme weather conditions.
- Exposed locations in extreme weather conditions.
- Roads surrounding incidents, for example where smoke causes visibility issues or access needs to be maintained for emergency services only.

2.6. **It is expected that this Resilient Network selected would work in coordination with the Greater Manchester (GM) Multi-Agency Generic Response Plan when necessary.**

### 3. RESPONSES BY POTENTIAL EVENT

3.1. The resilient network will be impacted on differently by different incidents. As part of this review, analysis has been undertaken for each incident type to identify the likely impact on the network and a series of actions that will be required.

#### 3.2. Flooding

3.3. The Table below taken from the GM Multi-Agency Generic Response Plan identifies the triggers for different flood risks.

Low Flood Risk / Flood Alert	
Triggers	<ul style="list-style-type: none"> <li>Flood Alert.</li> <li>Flood Guidance Statement.</li> <li>Severe Weather Warnings</li> <li>Recorded rainfall that is predicted to result in flooding (upstream).</li> <li>Recorded or forecast river water levels that will cause flooding.</li> </ul>
Impact on the Ground	<ul style="list-style-type: none"> <li>Flooding of low lying land</li> <li>Rivers, brooks swollen and approaching capacity.</li> <li>Activation of flood defences</li> <li>Surface water flooding</li> <li>Minor road, car park or open land flooding.</li> <li>Localised flooding due to heavy storms.</li> <li>Flooding of fields and recreation land/campsites</li> </ul>
Medium Flood Risk / Flood Warning	
Triggers	<ul style="list-style-type: none"> <li>Flood Warning.</li> <li>Heavy rainfall with potential to cause flash surface water flooding.</li> <li>Observed rising water levels - critical trigger point reached.</li> <li>Site observations (e.g. restrictions/blockages or defence failures).</li> <li>Actual flooding of properties reported.</li> </ul>
Impact on the Ground	<ul style="list-style-type: none"> <li>Flooding of homes, buildings and businesses.</li> <li>Flooding of major road and rail infrastructure.</li> <li>Significant flood plain inundation</li> <li>Damage to flood defences.</li> </ul>
High Flood Risk / Severe Flood warning	
Triggers	<ul style="list-style-type: none"> <li>Severe Flood Warning</li> <li>Forecasts predict a worsening situation and severe flooding likely</li> <li>Observations of severe flooding or major problems with infrastructure and services.</li> <li>Actual severe flooding incidents reported.</li> <li>Professional judgement, including consultation with Professional Partners.</li> </ul>
Impact on the Ground	<ul style="list-style-type: none"> <li>Risk to life.</li> <li>Large numbers of homes/businesses expected to flood.</li> <li>Large numbers of people are likely to be affected by flooding.</li> <li>Severe adverse impact on local infrastructure anticipated.</li> <li>Significant impact on the capacity of professional partners, organisations and the public (e.g. vulnerable groups) to effectively respond.</li> <li>Flood defence failures or overtopping resulting in extreme flooding.</li> </ul>
Recovery	
Triggers	<ul style="list-style-type: none"> <li>Rivers back in-bank, levels falling and no significant rain forecast.</li> <li>Rivers back below trigger levels which activated initial warnings.</li> </ul>
Impact on the Ground	<ul style="list-style-type: none"> <li>No further impact in terms of flooding with an improving situation.</li> <li>Property owners and local authorities take stock and consider clean-up/recovery operations.</li> </ul>

Table Recognised Drainage Hotspots

River Name	Location	Area	Flood Defences/ Engineering Works
River Mersey	Manchester Road, Cheadle wood Farm, Railway cottages & Happy Days Garden Centre	Cheadle (Stockport – Manchester Boundary)	Protective Banking
Gatley Brook	Gatley Green	Gatley	-
Heald Green	Gatley (Williams Scholes Playing Field)	Gatley	Debris Screen
Poise Brook	Torkington Park	Hazel Grove	-
	Robins Lane	Bramhall	-
Drainage issue	Layfield Avenue	Romiley	-
Drainage issue	Junction of Stockport Road and Hyde Road, Bredbury Rail underpass	Bredbury	-
Drainage issue	Hulme Hall Road, Cheadle Hulme – Rail underpass	Cheadle Hulme	-
Drainage issue	Junction of Brabins Brow, Town Street and Lower Fold	Marple Bridge	Natural low spot, Capacity Issues

3.4. Flooding incidents may necessitate the closure of certain roads or footpaths. Procedures for assisting the police with road closures will be provided by Stockport Council. Ideally in the case of key routes, suggestions for alternative routing should be available.

3.5. Roads in the key network affected by flood zones are:

- St Marys Way, Stockport
- Great Portwood Street, Stockport
- New Bridge Lane, Stockport
- Brinksway, Stockport
- Chestergate, Stockport
- King Street West, Edgeley
- Manchester Road, Cheadle
- Stockport Road, Cheadle
- Councillor Lane, Cheadle
- Brabyns Brow, Marple
- Town Street, Marple Bridge
- Longhurst Lane, Marple Bridge
- Andrew Street, Compstall
- Dooley Lane, Chadkirk
- Otterspool Road, Chadkirk
- Torkington Road, Hazel Grove
- Buxton Road (A6)

**ACTION – Prioritise necessary drainage maintenance/improvement works for resilient network.**

**ACTION – Prioritise structural maintenance of routes and related structures for the resilient network.**

**ACTION - Prioritise post flooding clearance/repair on highways network to resilient network routes.**

3.6. Maintenance and improvement work of the resilient network will be captured in the Capital Programme and asset management planning for the council.

**3.7. Heavy Rain**

3.8. Heavy Rain increases the risk of landslip and reduces visibility and surface friction leading to increased risk of crashes (but not necessarily causing wide spread flooding).

**ACTION – Prioritise clearing/repair of resilient network to keep routes open.**

**3.9. Heatwaves**

3.10. Issues likely to arise as part of any heatwave emergency, such as power failures and transport disruption, will be dealt with by the departments concerned as part of a coordinated response unless they became the overriding concern, in which case the overall Government department lead may transfer responsibility.

3.11. Transport infrastructure:

- Road surfaces are susceptible to melting under extreme or prolonged temperatures (33°C for Tarmac); however, as the surface temperature may not be dependent on the air temperature, melting is more likely to be as a result of direct sunlight.
- Traffic congestion leading to delays on roads has potentially serious consequences for those in vehicles, particularly vulnerable people such as the elderly or young children.

**ACTION - In the very unlikely event of widespread road melt the prioritisation for spreading grit or sand would reflect that seen for the cold weather maintenance.**

**ACTION - Potentially consider delaying activities which could increase congestion such as none emergency road works on key routes.**

**3.12. High Wind**

3.13. Issues likely to arise as part of high wind are: Debris in the road; Difficult driving conditions (potential increase crash risk); electrical failure.

3.14. Weather warnings for high winds will provide the following advice on circumstances and likely damage:

- 50 mph gusts: Difficult driving conditions for high-sided vehicles especially on exposed roads and bridges.
- 60 mph gusts: Difficult driving conditions. Unladen high-sided vehicles at risk of being overturned. Some damage to trees and falling branches.
- 70 mph gusts: Hazardous driving conditions. Unladen high-sided vehicles at risk of being overturned and motorists advised to drive with particular care. Damage to trees, falling branches with some being uprooted. Minor damage to some buildings, particularly to tiles, slates and chimneys.
- 80 mph gusts: Dangerous driving conditions. High-sided vehicles at risk of being overturned and motorists advised to avoid driving if possible. Considerable damage to trees with significant tree uprooting. Extensive minor damage, particularly to tiles, slates and chimneys, with some structural damage to chimneys.
- 90 mph gusts: Driving extremely dangerous. Widespread uprooting of trees. Widespread damage to buildings, with potential for severe structural damage. Public advised not to venture out of doors unless really necessary.

**ACTION – Prioritise clearing/repair of resilient network to keep routes open.**

**ACTION – Consider the need to minimise the risk of high winds in exposed areas by appropriate maintenance.**

**ACTION – Close routes identified as potential risks in high wind and divert as necessary**

3.15. Maintenance and improvement work of the resilient network will be captured in the Capital Programme and asset management planning for the council.

### **3.16. Snow**

3.17. Issues likely to arise as part of snow conditions include reduced visibility, reduced surface friction, failure in road signals, roads become impassable due to snow and vehicular accidents. The Winter Maintenance Plan and Policy which can be found here: <http://www.stockport.gov.uk/services/transport/highwayandstreetlightmaintenance/wintermaintenance/grittingtheroads/whenwegrit> looks at this in detail.

**ACTION – Gritting as outlined in the winter maintenance plan and policy.**

**ACTION – Prioritise clearing /repair of resilient network to keep network operational.**

### **3.18. Extreme Cold**

- 3.19. The effectiveness of salt decreases with temperature and the use of alternative materials may be required to ensure effective treatments in extreme cold. Extreme cold conditions are considered to be temperatures lower than  $-5^{\circ}\text{C}$  in low humidity conditions (below 80% relative humidity) and lower than  $-7^{\circ}\text{C}$  in normal UK winter humidity conditions (at or above 80% relative humidity). This decrease in effective de-icing would be expected to increase the risk of accidents.
- 3.20. The surface is also affected by extremes and extra maintenance to address post event damage may be needed. This would also be implemented on the prioritised resilient network first.

**ACTION – Gritting as outlined in the Winter Maintenance Plan and Policy.**

**ACTION – Prioritise clearing/repair of resilient network to keep network operational.**

### **3.21. Other Incidents**

- 3.22. Other none weather related incidents which impact on the highway will also have the same highway prioritisation applied where appropriate.

### **3.23. Industrial Incidents**

- 3.24. The predicted impacts include:
- Endangerment of life.
  - Damage to property and the local area.
  - Pollution of the local environment and water courses.
- 3.25. The consequences could include:
- Impact to UK oil and gas supplies.
  - Economic impacts through damage to local businesses.
  - Long term restoration and recovery of the local area.
  - Contamination of crops and agricultural land.

**ACTION – Prioritise clearing/repair of resilient network to keep network operational.**



**ACTION – Identify potential diversion plans for locations of high potential risk, for example waste disposal sites.**

**ACTION – Close routes identified as potential risks due to issues such as contamination or visibility, and divert as necessary.**

### **3.26. Industrial Action and other Mass Protest Events.**

3.27. Large groups will congregate to raise the profile of issues. This will normally focus around the location relevant to the issue or locations of high profile in order to achieve maximum effect. This will potentially impact on the resilient network and depending on the size and duration of the event could negatively affect use of the network. If the nature of the gathering becomes hostile, damage may also occur to the fabric of the highway.

**ACTION - Where possible it will be advised that, working with the involved parties, the routes and congregation areas for industrial action and other mass protest events should minimise their impact on the primary resilient network to not adversely affect the use of the Primary Resilient Network.**

**ACTION - Identify diversion routes for key points of attraction for such groups such as the Stockport Town Hall, the town centre and arrival points such as rail and bus stations.**

**ACTION – Work with the police and other relevant groups to limit and remove blockages of the resilient network as soon as reasonably practicable.**

**ACTION – Clean debris and address other issues caused by events to return the highway to its normal state prioritising primary and then secondary resilient network.**

### **3.28. Terrorism**

3.29. As with mass protest, high profile targets which would generate the most damage and attention are likely to be the potential location for such incidents. Locations with large numbers of users close together for example transport interchanges, music venues and public outdoor events have all been recent targets for such attacks. Consideration can be given to physical amendments to the network to limit the potential impacts of terrorism as well as ensuring that in the aftermath of any such event, the necessary transport support is available to assist the emergency services and that any repairs are undertaken rapidly.

**ACTION – Consider potential impact of terrorism on the primary resilient network and potential mitigation.**

**ACTION - Identify diversionary routes for key points of attraction for such groups such as the Stockport Town Hall, town centre venues, railway and bus stations.**

**ACTION – Consider basic awareness training of frontline staff in identification of potential threats.**

**ACTION – Ensure that information which may potentially be exploited by criminal or terrorist groups is not released to people who do not require it.**

**ACTION – Work with the police and other relevant groups to limit and remove blockages of the resilient network as soon as reasonably practicable.**

**ACTION – Clean debris and address other issues caused by incident to return the highway to its normal state, prioritising the primary and then secondary resilient network.**

### **3.30. Pandemic/Infectious Disease**

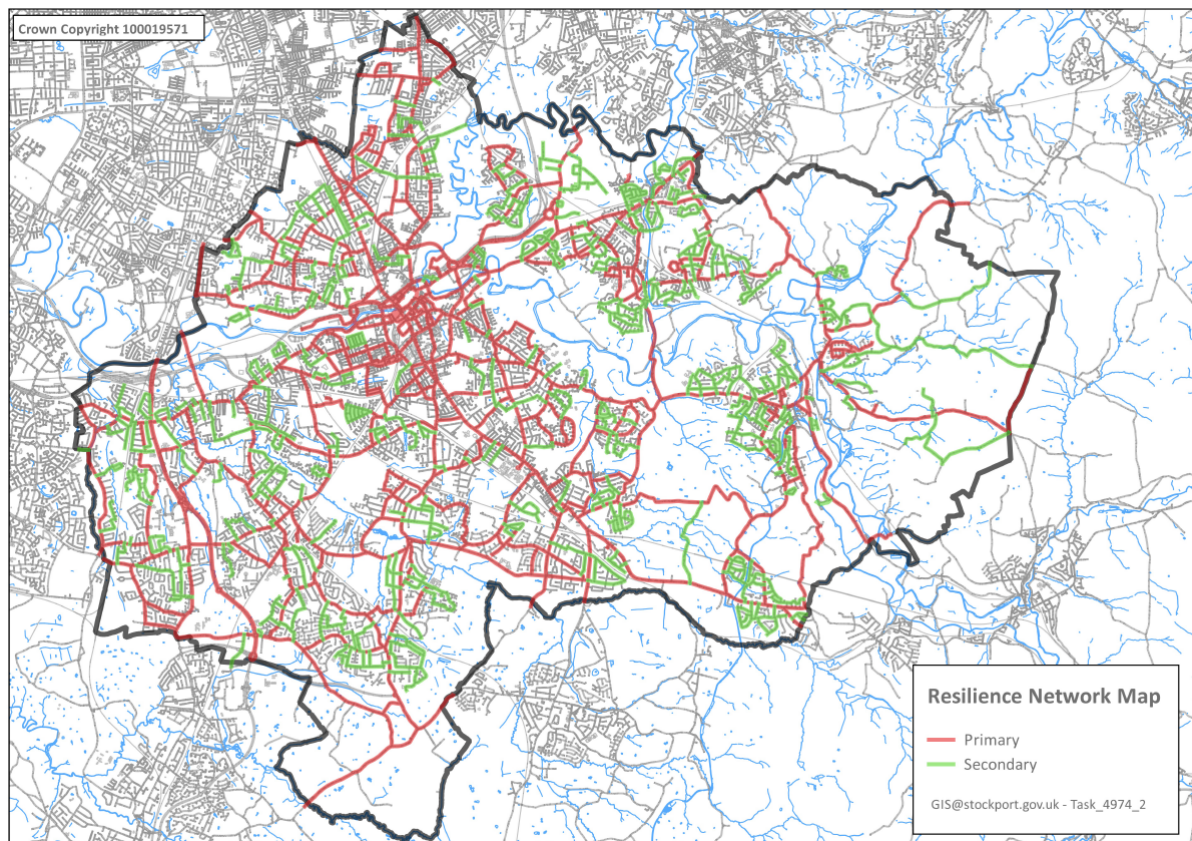
3.31. This is a slow-moving emergency but will still potentially impact on the transport network through both the need to keep key routes to medical facilities open and the potential impact of illness on the availability of staff. In the case of animal disease decisions may need to be taken about how the transport network can support the containment of the disease by amending movement.

**ACTION – Prioritisation for necessary medical or veterinary transport needs.**

**ACTION – If workforce is reduced through illness prioritise the maintenance of the primary network.**

**ACTION – Work with relevant guidance to minimise unnecessary movement if required.**

#### 4. OVERALL RESILIENT NETWORK MAP (Appendix 1)



##### 4.1. Primary Road

##### 4.2. **Primary Gritting Routes as defined in Winter Maintenance Plan plus:**

##### 4.3. **Roads allowing access to Police Stations:**

- Parkfield Avenue, Marple
- Tannock Road, Hazel Grove
- Campbell Street, Reddish
- Asquith Street, Reddish
- Spectrum Way, Adswold

##### 4.4. **Roads providing access to key nursing care facilities:**

- Non-highway access clearance (private driveways) should be discussed between care homes and Solutions SK on an individual basis.
  - Berrycroft Manor Care Home - Berrycroft Lane, Stockport, SK6 3AU  
**Entrance off Warwick Road.**
  - Marbury House Care Home Marbury Rd, Stockport, SK4 5NU
  - Meadway Court Care Home, Bramhall, SK7 1JZ
  - Abney Court Abney Hall Park, Manchester Road, Cheadle, SK8 2PD

**4.5. Roads to rest centres as identified in the emergency plan:**

- Lambeth Grove, Woodley

**4.6. Secondary Roads**

**4.7. Tertiary Gritting Routes as defined in Winter Maintenance Plan plus:**

**4.8. Weekdays Roads accessing Education Facilities:**

Prospect Vale	Rushton Road
Loweswater Road	Heathbank Road
Keswick Ave	Bombay Road
Foxland Road	Calcutta Road
Matlock Road	St Johns Road
Acres Road	Poplar Street
Birch Road	Glenfield Road
Ashfield Crescent	Churchill Street
Vernon Close	Higgingson Road
Hulme Hall, School lane	Bedford Street
Kirkstead Road	Broomfield Drive
Whitehaven Road	Gorseway
Eskdale Ave	Westmorland Drive
Dalstone Drive	Warwick Road
Albany Road	Ashdown Ave
Gleneagels Close	Bowland Road
Mill Lane	Sherwood Road
Neville Road	Sandy Lane
Arnfield Road	Elmfield Drive
Neston Grove	Chapel Street

**5. CONSULTATION**

5.1. This document has been taken to relevant stakeholders for consultation.  
Stakeholders include:

- Police
- Fire Service
- Ambulance Service
- Public Transport Operators
- Utility Providers
- AGMA Civil Contingencies and Resilience Unit (CCRU)

5.2. Comments have been incorporated into the overall Resilient Network to ensure it meets the needs of relevant services.

## **6. NEXT STEPS**

- 6.1.** Following the adoption of the reviewed resilient network this document will be shared with all relevant members of staff and stakeholders for information. The actions will be undertaken as necessary both with regards to prioritising works to mitigate the effects of incidents and to guide decision making in the event of an emergency.

## **7. FUTURE REVIEWS**

- 7.1.** In order to expedite future reviews of the resilient network, which must be undertaken every 2 years, it is recommended that future approval of amendments to the network is delegated to the Director of Place in consultation with the Cabinet Member for Economy & Regeneration. This would not include amendments to the related strategy but purely to the network for the purpose of keeping it up to date for example: the removal of roads as facilities close within the guidelines of the related strategy resulting in the road no longer providing a key route.

## **8. RECOMMENDATIONS FOR CABINET**

- 8.1.** Cabinet is requested to approve:
- The proposed prioritisation process, network identified and the actions recommended for the different incident type.
  - That future approval of amendments to the network in line with the adopted guidelines is delegated to the Director of Place in consultation with the Cabinet Member for Economy & Regeneration.

## **BACKGROUND PAPERS**

There are none

Anyone wishing to inspect the above background papers or requiring further information should contact Sue Stevenson on Tel: 0161-474-4351 or by email on [sue.stevenson@stockport.gov.uk](mailto:sue.stevenson@stockport.gov.uk)