

Highway Resilient Network Strategy 2025



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Document Information

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| Title | Highway Resilient Network Strategy |
| Description | Describes the Council's approach to the strategic development of its Resilient Highway Network. |
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The authority for the approval of this document is granted to the Executive Director for Growth, Enterprise, and Environment / Managing Director / Assistant Director – Environment as prescribed by the Councils Constitution, delegated power number 240, Highway Maintenance plan preparation and implementation.

Document Revision Summary

Minor amendments to the documentation to align with current legislation. Consultation undertaken with stakeholders and minor amendment to the Resilient Network.

1. Resilient Network - Introduction

The **Highway Infrastructure Resilient Network** provides the minimum network of roads which will be maintained within the borough of Redcar & Cleveland Council in times of extreme weather and other significant disruptions. The resilient network will be given priority, in order to maintain economic activity and access to key services during extreme weather.

The resilient network is not intrinsically a maintenance hierarchy; however, this network of roads is contained within a range of maintenance hierarchy categories reflective of factors of risk, usage, priority, etc.

The resilient network is the network of roads used to maintain economic activity, access to key services and to enable the citizens, businesses, and visitors of Redcar & Cleveland to go about their daily business in times of extreme weather, or as a consequence of other significant disruption.

During periods of prolonged extreme weather, the highway network can be disrupted. This was highlighted during the winters of 2013/14 and 2017/18 where many areas of the Country suffered disruption due to the severe weather. In response, the Secretary of State commissioned an Independent Review of the resilience of the nation's transport network, resulting in the '2014 Transport Resilience Review' by Department for Transport (DfT). This review made sixty-three recommendations; fourteen of which were directed at Local Authorities.

The DfT 2014 - 'Transport Resilience Review' recommended that Local Highway Authorities should.

"Identify a 'resilient network' to which they will give priority, in order to maintain economic activity and access to key services during extreme weather".

This is reinforced in the the **Well-managed Highway Infrastructure Code of Practice (2016)**: Recommendation 20 which states.

"Within the highway network hierarchy, a "Resilient Network" should be identified to which priority is given through maintenance and other measures to maintain economic activity and access to key services during extreme weather".

1.1 Process in Developing the Resilient Network

The process for identifying the Resilient Network considers which routes are absolutely essential and those which can be considered less of a priority and may be subject to access and trafficking restrictions for a period of time.

The process considers priorities in a time of difficulty when resources may be limited or otherwise engaged, and it also takes account of which roads are key to.

- The preservation of life and property
- The protection of those who are vulnerable.
- Providing access for emergency services
- The availability of food, water electricity, gas, and communications
- Maintaining a viable economy
- Providing serviceable access to critical infrastructure assets

It is implicit that these decisions will not simply follow road classification or categorisation and that the process in determining the resilient network for Redcar and Cleveland should engage key business stakeholders. Appendix A denotes a typical consultation letter to key stakeholder service providers inviting them to engage in this development process.

The resilient network is based on risk and priority needs and it should also align with the cross-boundary networks of neighbouring areas and be consistent with the wider 'Resilience Strategy' for the five Tees Valley Combined Authorities and surrounding areas. In addition, the resilient

network for Redcar & Cleveland should engage key business, stakeholders, and interest groups.

The Government considers asset management to be a key part of the provision and ongoing maintenance of an available resilient network, as well as effective contingency planning and prioritisation.

The increase in potential for extreme weather events is generally acknowledged to be an impact of climate change, and this is likely to increase the severity and magnitude of weather events.

Local authorities are expected to make the best use of the most up-to-date climate change forecasting information available. This information shall be considered in the prioritisation of works to increase the resilience of the highway infrastructure assets to the extreme effects of climate change.

Drainage is considered an important function in addressing the increase in localised flooding issues as a consequence of climate change and in the understanding of the condition of the drainage network. This ensures its effective maintenance and performance and assists in minimising the damage caused by extreme weather events. The Government's response to the 'Transport Resilience Review' identifies the importance of maintaining an effective drainage infrastructure to ensure a reduction of scale and threat of flooding with a focus on known problem areas.

In order to develop the resilient network, there is a need to identify routes that can fulfil the more specific roles of resilience for a range of issues beyond extreme weather events. The resilient network is the bare minimum that a highway authority needs to maintain when resources are scarce, and in this context the following key service locations and critical infrastructure assets have been considered;

Key Service Locations

- Highway Depots
- Ministry of Defence
- Police stations
- Ambulance stations
- Fire stations
- Hospitals with Accident and Emergency
- Bus Stations
- Railway Stations
- Access to motorway network
- Critical infrastructure identified in the council's emergency plan
- COMAH sites
- Fuel Stations
- Power Distribution Points
- Communications i.e. essential fibre optic cables.

Key Locations of Economic value

- Main business parks
- Main industrial estates
- Main employment centre

Where appropriate it may also be necessary to consider.

- Care Homes with Nursing Care facilities.
- Educational Facilities (weekdays)
- Large Medical Clinics/ non-A & E Hospitals
- Critical utility facilities in need of access (on request), e.g. sewerage and land drainage pumping stations, electricity sub-stations, gas terminals.
- Town and District Centres
- Large Retail/ Business Parks
- Secondary bus routes and school routes

1.2 Responses to Potential Climatic Events

The availability of a resilient network route should also consider locations which under certain conditions should be closed and bypassed for safety purposes, i.e.

- Sections of road liable to flood.
- Exposed locations in extreme weather conditions.
 - ice or snow build up.
 - strong winds.
 - dense fog
- Where it is dangerous or impractical to maintain open routes for all road users.

When preparing and responding to a particular extreme climatic event, the Council will prioritise the inspection, clearing and repair of the resilient network routes to keep them open.

Redcar & Cleveland Borough Council will consider the need to minimise the consequential risk of.

- Snow & Ice
- Flooding
- Heatwaves
- High Winds
- Other incidents

Actions will include but will not be limited to gritting the roads, snow plough (removal of snow and debris), gully/drain cleansing, defect repairs and closing roads.

1.2.1 Snow

Issues that are likely to arise due to extreme snow conditions are:

- Reduced visibility
- Reduced surface friction
- Failure in road loops/signals
- Roads become impassable due to snow and vehicular accidents.

Redcar and Cleveland Borough Council will take priority corrective measures to address and mitigate the consequences of these occurrences should they arise on the resilient road network.

1.2.2 Flooding

A flooding event may result in the closure of roads and footpaths, therefore, to mitigate the consequential risk, Redcar and Cleveland have consulted with the Coastal, Flooding and Drainage Team to understand which routes may be affected and therefore to consider alternative routes as part of the resilient network. On the resilient network routes, the gullies and drainage systems may be additionally inspected and maintained in good working order to mitigate the effects and consequences of standing water and flooding should an extreme rainfall event be forecast.

1.2.3 Heatwaves

Issues are likely to arise as part of any heatwave emergency, such as power failures and transport disruption, road surfaces melting and distorting. These will be dealt with by the departments concerned as part of a coordinated response unless they are declared a national disaster/concern in which case the overall responsibility may be transferred to Central Government.

1.2.4 High Winds

Issues likely to arise as part of high wind include fallen trees or branches, debris in the road, difficult driving conditions, potential increase of crash risk or risk of vehicles over-turning, electrical failure.

Consultation on weather warnings for high winds will provide information on the risk and dangers of driving in such extreme weather conditions, the expectation of widespread uprooting of trees, widespread damage to signs, hoardings, and buildings, with potential for severe structural damage. The public may be advised not to venture outdoors unless necessary.

1.2.5 Other Incidents

Other incidents not related to weather, e.g. acts of terrorism, mass protests, major crash incidents, may impact on the highway availability and they will have the same resilience mitigation and maintenance prioritisation activities applied where appropriate.

1.3 Consultation

The following groups were consulted during the formulation of the resilient network.

- Tees Valley Combined Authorities (Neighbouring Highway Authorities)
- Tees Valley Business Board
- Fire and Rescue Services
- Ambulance Service
- Police
- Network Rail
- Bus Operators
- Chamber of Commerce
- Ministry of Defence
- Emergency Planning Department
- Utility Operators
- Redcar & Cleveland Borough Council Stakeholders
 - Highways Maintenance
 - Traffic and Safety
 - Street lighting
 - Structures
 - Public Rights of Way

A consultation letter was sent to these groups asking for their requirements for a resilient network (see Appendix A).

Following the consultation process, the Redcar & Cleveland 'Resilient Road Network' has been defined as shown in Figures 1a and 1b below.

Key Regional routes shown in Figure 2 with a map extract from the Tees Valley Combined Authority "*Strategic Transport Plan 2020-2030*".

Figure 1a - Redcar & Cleveland Resilient Network

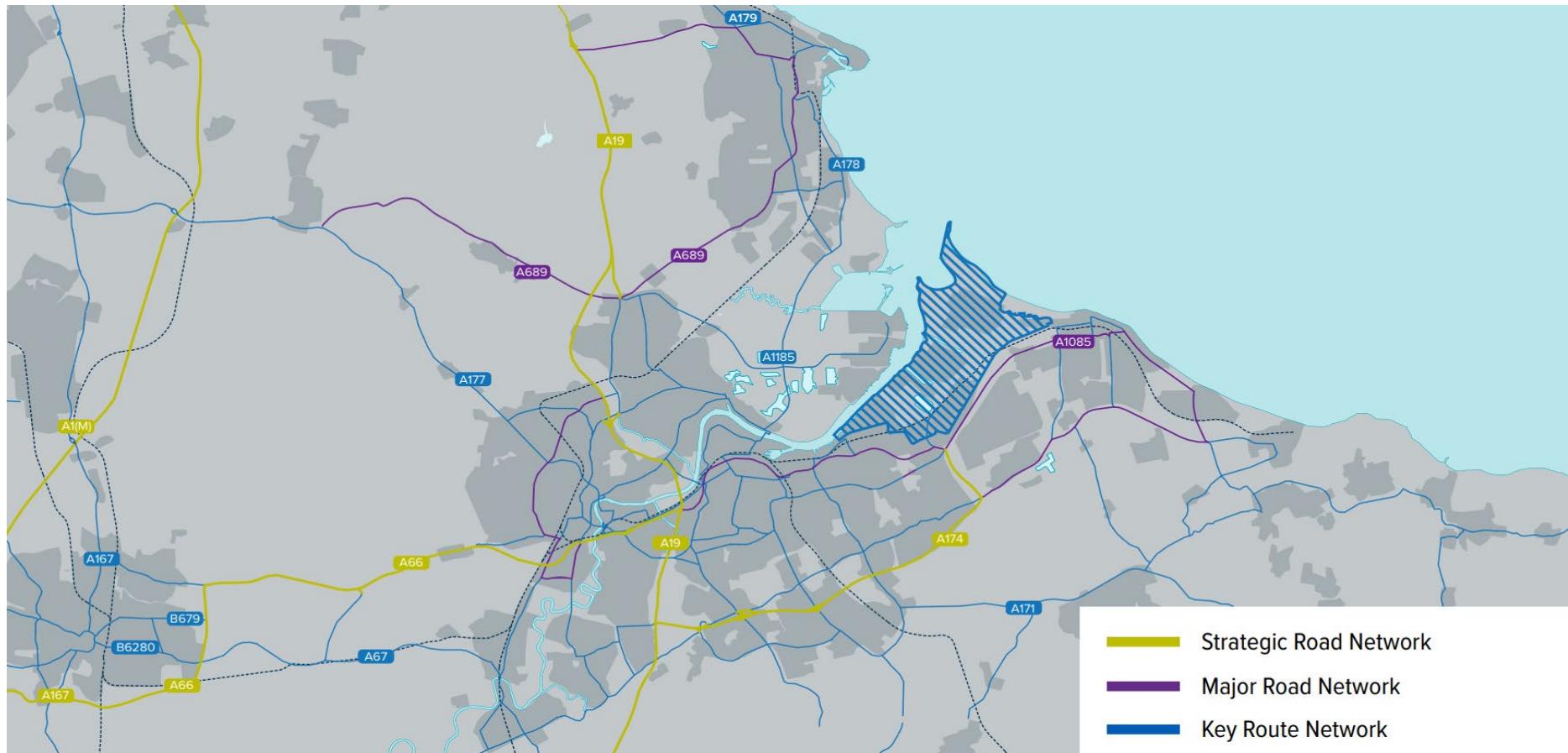


this is Redcar & Cleveland

Figure 1b - Redcar & Cleveland Resilient Network with satellite imagery.



Figure 2- Key Regional Networks



*Extract above from the Tees Valley Combined Authority "Strategic Transport Plan 2020-2030".

2. Monitoring and Review

The highway network has been created and defined using data currently available. The identification of the resilient network is a dynamic process subject to transformation as the network grows, its usage changes and critical infrastructure is added or removed.

To ensure the network is kept current and up to date a review will be undertaken every 2 years to take consideration of any changes to the network status and to reflect any lessons learned.

This will involve the following:

- Review critical infrastructure and service locations and update GIS information.
- Update traffic flow data.
- Review the status of neighbouring Council's hierarchy and resilient networks to ensure cross-boundary continuity arrangements are in place.

It is evident that 'Resilient Network' is critical to the risk-based operational maintenance management of Redcar and Cleveland Borough Council's highways infrastructure assets and for the prioritisation and adequacy of its financial investment in support of asset condition and its durability.

Any changes to the designated resilient network should be registered, date stamped and evidenced, as this may have an impact on the Council's defense of legal challenges.

| Review Date | Comments | Reviewer |
|-------------|----------|----------|
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Appendix A: - Example Consultation Letter - Resilient Network

Dear Sir or Madam

Resilient Highway Network Review

A periodic review of the Resilient Highway Network is to be commenced shortly by Redcar and Cleveland Borough Council (RCBC); I am therefore engaging with Key external Stakeholders for their input.

Background to the review: During periods of prolonged extreme weather or unexpected events, the local and / or national highway network can be disrupted. This was highlighted during recent flooding and storm events across the country.

The Transport Resilience Review recommended that Local Highway Authorities should "Identify a 'Resilient Network' to which they will give priority to, in order to maintain economic activity and access to key services during extreme weather" (DfT, 2014). This has been reinforced with the release of the Well Managed Highway Infrastructure Code of Practice of October 2016.

The review includes contacting all key service providers and businesses to help us to identify areas of economic value and ascertain locations which are deemed essential to maintain access to, in the management of a Resilient Network.

As such, RCBC wish to determine whether you have any "critical" assets which you consider would need maintaining or areas that are vulnerable should the roads, footways, verges or structures that support or carry your assets become unusable in the event of a prolonged period of network disruption.

The process for reviewing the Resilient Network considers which routes are essential. The decision of essential routes will not follow road classification or categorisation; therefore, your information is essential to enable the authority to make an informed decision.

The Resilient Network will be the bare minimum that RCBC need to maintain when events or extreme weather reduce the capacity of the authority's resources.

I am contacting you, as I believe that you own or manage one of the following key assets, service locations and routes of economic / emergency importance.

- o Highway Depots
- o Costal Defence
- o Ministry of Defence
- o Police, Ambulance and Fire stations
- o Hospitals with Accident and Emergency
- o Schools / Colleges / University
- o Key Transport hubs (Bus / Rail)
- o Access to motorway network
- o Critical infrastructure identified in the council's emergency plan
- o COMAH sites
- o Key petrol stations
- o Power distribution points
- o Water distribution points
- o Communications networks, i.e., essential fibre optic cables.
- o Main Business parks
- o Main Industrial estates
- o Main employment centres

The above list is not exhaustive, so if you consider any asset under your ownership / management / that you use to undertake vital services or is needed to form part of the decision process, please inform me accordingly.

I would be grateful if you could respond within 28 days, with a plan (preferably GIS) or a description of your asset with bulleted reasons, justifying why you require access during periods of disruption or if you have any concerns over the delivery of your service in the event the road, footway, verge or structure is unusable.

Please accept my apologies if you have been selected in error. If you feel anyone has been missed of the circulation list, please feel free to forward this on accordingly.

Should you not be able to respond with the information required within 28 days, then please let me know at your earliest convenience, as otherwise the asset/infrastructure may not be included within the review.

If you require any further information, or would like to discuss this further, please do not hesitate to contact me.

I look forward to your reply.

Yours faithfully