PUBLIC

RESILIENT NETWORK PLAN

JULY 2018

AN ELEMENT OF THE HIGHWAY INFRASTRUCTURE ASSET MANAGEMENT SYSTEM

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Document Information

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Reviewed:	SM

Document Issue Status

TABLE OF AMENDMENTS					
NO	**APPROVAL DATE**	**SECTION**	**PARAGRAPH**	**DETAILS**	**AUTHOR**
1	25/07/2018	All	All	Cabinet Approval	NB
2	01/08/2020	See Review Schedule 1		First Review	PB

TABLE OF DEFINITIONS	
TERM	**DEFINITION**
RN	Resilient Network
HE	Highways England
SRN	Strategic Road Network
DCC	Derbyshire County Council
TDAT	Transportation Data & Analysis Team
GIS	Geographic Information Systems
MRN	Major Road Network
HMEP	Highways Maintenance Efficiency Programme
DfT	Department for Transport
SAMS	Single Asset Management System
TAMP	The 2008 Derbyshire Transport Asset Management Plan
AADT	Annual Average Daily Traffic Flow

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BACKGROUND

Following the impact on the highway network of a succession of severe events, the Department for Transport (DfT), in 2014, produced the document Transport Resilience Review: A review of the resilience of the transport network to extreme weather events. Furthermore, the Highways Maintenance Efficiency Programme (HMEP) has developed a selection of products and services that promote efficient and effective working practices. These resources have been developed and based on the existing good practice of highway authorities. The long term implementation and management of the highway network is further supported by the new Code of Practice for Well-Managed Highway Infrastructure which provides additional structure in developing good practice. The Code includes Recommendation 20 – Resilient Network 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”.

SCOPE OF THIS DOCUMENT

The main purpose of this document is to provide an all-weather, all circumstance network to keep Derbyshire in business.

The main objectives in establishing a Resilient Network are:-

- To develop, implement and embed good practice in relation to network resilience in order to protect the economic activity of the County, provide for emergency services and maintain access to key services for its residents during periods of extreme weather. The development of the Resilient Network directly supports the Council’s Local Transport Goal “Supporting a local resilient economy”.
- Ensures a risk based approach to an efficient and effective service delivery.
- Accords with best practice as advocated by the new Code of Practice for Well-Managed Highway Infrastructure which embraces developing a Resilient Network.
- Ensure that the development of the Resilient Network is systematic and repeatable to ensure that the overall process is auditable and transparent, whilst allowing future reviews to be carried out in a timely fashion.
- Maximises Derbyshire’s DfT grant to provide a safe and reliable network.

DEVELOPMENT AND REVIEW OF DERBYSHIRE’S RESILIENT NETWORK

A five stage development process was devised to provide a documented methodology to support the creation and management of the Resilient Network in line with current best practice prior to the creation of the original RN, see Figure 1 overleaf. This was developed by a working delivery group formed of a cross section of experts from the authority to create and review the Resilient Network.

This included experts from the two greatest risks to the highway network, snow/ice and flooding and allowed alignment with Derbyshire’s wider strategies, including the Council’s Climate Change Adaption Plan, and the Local Flood Risk Management Strategy (LFRMS). The development of the Resilient Network expanded on the work previously completed to develop the Derbyshire Network Hierarchy.

For the biennial review the working delivery group was re-established and considered that the development structure was still a valid approach and agreed that the same essential

principles would inform the review along with any lessons learnt and ongoing liaison with neighbouring authorities and other stakeholders.

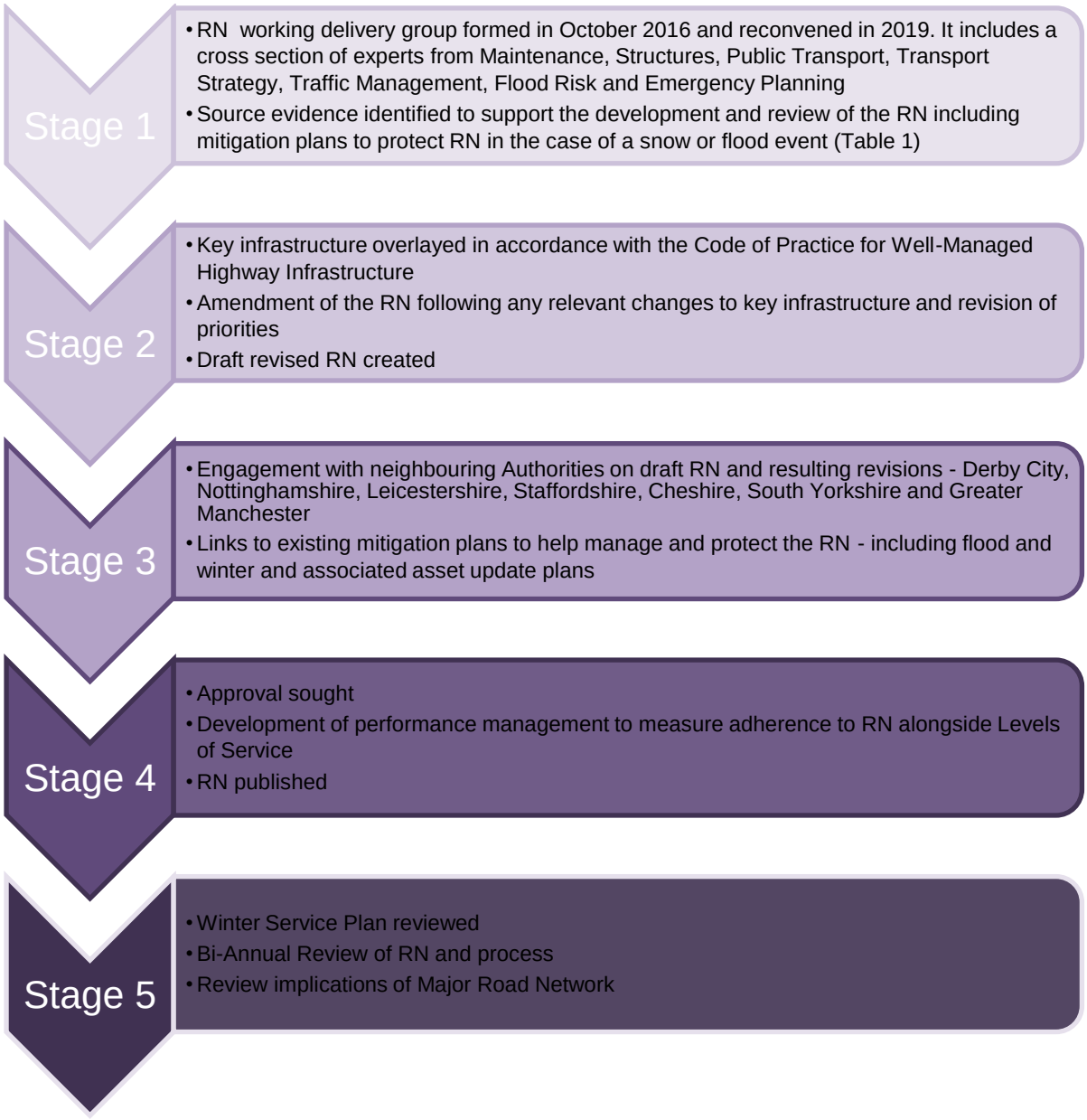

Figure 1: 5 Stage Development Process

Stage 1

A working delivery group was formed in October 2016 and reconvened in 2019 covering key areas of activity:-

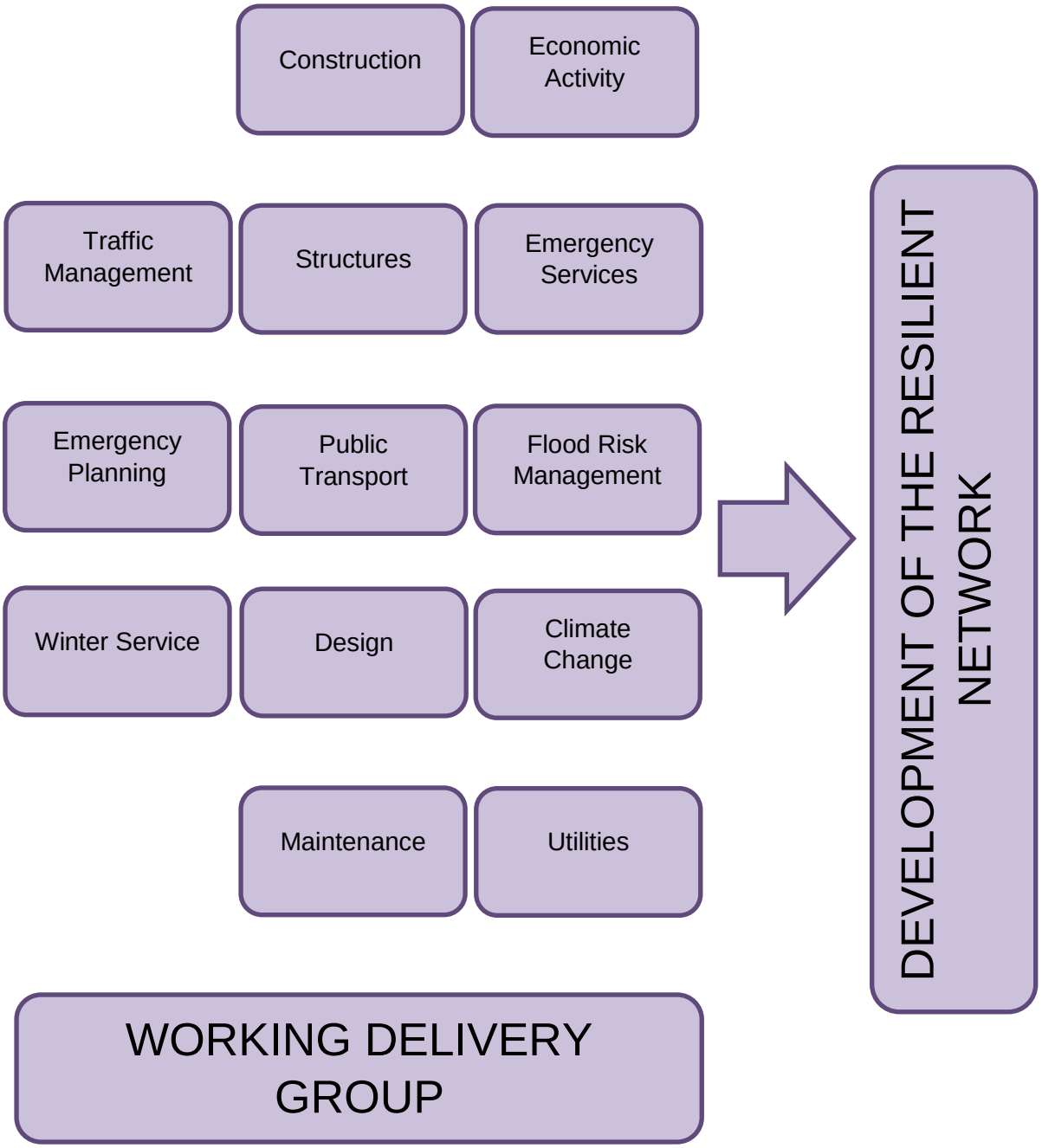

Figure 2: Working Delivery Group

The key evidence to support the development and review of the Resilient Network was agreed by the delivery group and sourced as per Table 1 overleaf.

Table 1: Key Evidence

Consideration	Description	Considered Essential	Non Essential/ Low Risk	Source	Format
Snow routes	Routes to provide indicative basis of RN -	✓	Use as a reference of roads to include where infrastructure dictates	Maintenance	PDF's available Routes digitised
Economic Activity	Locations of economic activity	✓	Industrial areas on a case by case basis	Planning	GIS
Public Transport	Locations of key bus service providers depots/garages	✓	Depots that house the majority of an operator's busses that run reduced routes in severe winter weather	Public Transport	GIS
Utilities	Key utility locations/sites • water treatment plants • electricity primary sub stations	✓	No action required, awareness that suppliers will also have their own emergency procedures in place	Emergency Planning	GIS
Hospitals/ community hospitals	• Main Hospitals • Minor Injury Units	✓	Community hospitals	Emergency Planning	GIS
Emergency services	Ambulance stations	✓	Ambulance stations on a case by case basis	Emergency Planning	GIS
	Police stations • Head Quarters • Divisional Head Quarters	✓	Remaining Police stations on a case by case basis Unlikely to include the community stations unless they overlap with the agreed RN	Emergency Planning	GIS
	Fire stations • Head Quarters • Manned stations	✓	Remaining fire stations on a case by case basis	Emergency Planning	GIS
DCC maintenance depots	6 no. countywide	✓		DCC Highways	GIS
Flood Zones/critical assets		✓	Be aware of where these intersect the RN	Flood Risk Team	GIS Layers

Consideration	Description	Considered Essential	Non Essential/ Low Risk	Source	Format
			for future risk mitigation measures		
Key petrol stations	Resilient petrol stations • National • Local?	×	Be aware of	Emergency Planning	GIS Layers
Links to HE network?	Key access to SRN • J29a? • A38 at Horsley	✓	Yes J29a, No Horsley	HE	
Schools	All Schools	×	No schools included		
Road Use	Road usage based on AADT Network Hierarchy based on AADT to determine maintenance priorities	×	Not considered	TDAT	GIS Layers
Travel to work	Analysis of census data to determine travel to work into and out of Derbyshire	✓	Checked to ensure major travel patterns are accounted for	Transport Strategy	Report
Rail stations	Railway stations	×	Case by case basis		GIS Layers

Stage 2

All of the evidence was collated in spatial form to allow a GIS representation of the information for the delivery group to discuss and debate the proposed changes to the existing Resilient Network with reference to the Code of Practice Well-Managed Highway Infrastructure.

Various amendments were made to the existing RN based on feedback from neighbouring authorities, emergency services and input from Public Transport to ensure that appropriate links could be made that would connect key infrastructure and locations with the local and strategic highway network, whilst ensuring that the resulting network is sufficient at times of an extreme event.

The working group also agreed that un-adopted roads would no longer be included in the RN on the basis that the county council has no jurisdiction and responsibility for the setting of service levels on such roads.

The resulting revised Resilient Network that was developed can be seen in Figure 3 overleaf.

Figure 3: Resilient Network July 2020 Map

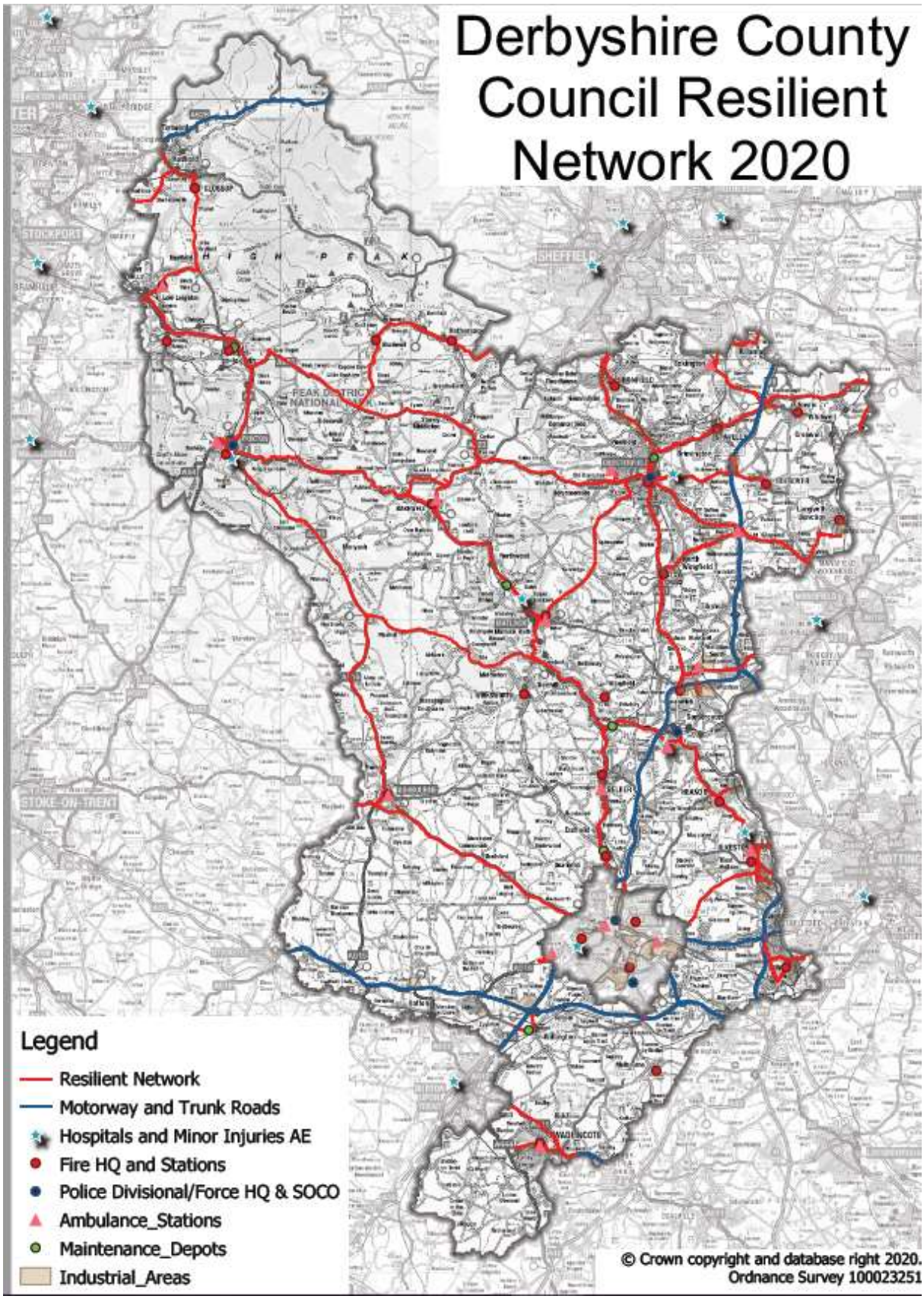

Table 2 provides a breakdown of the Resilient Network based on the Network Hierarchy that defines the strategic use of the highways network in Derbyshire. As can be seen the Resilient Network is composed predominantly of Network Hierarchy bands 1 to 3 with lower proportions for the remainder, as these link to the Strategic Road Network managed by Highways England, and also provide connectivity to areas of economic activity and access to key services.

Table 2: Resilient Network Breakdown

Network Hierarchy	Length (km)	Length (%)	Description
NH1	260.4	53.8%	AADT >= 9000
NH2	96.1	19.8%	AADT >= 6000 and AADT < 12000
NH3	102.8	21.2%	AADT >= 3000 and AADT < 8000
NH4	17.5	3.6%	Remaining Strategic Regional Routes, Main Distributor Roads and Secondary Distributor Roads
NH5	5.4	1.1%	Remaining Link Roads
NH6	1.5	0.3%	Remaining Local Access roads that are not a cul-de-sac
NH7	0.7	0.1%	Remaining Local Access roads that are a cul-de-sac
Total	484.3*	100%*	

* Subject to rounding errors

Stage 3

The draft revised Resilient Network was shared with neighbouring authorities to ensure that there was cross boundary alignment as far as possible, although network priorities meant that some minor roads on adjacent RNs were not included when another alternative route was available. The following authorities were contacted:-

- Derby City
- Staffordshire County Council
- Leicestershire County Council
- Nottinghamshire County Council
- South Yorkshire Authorities
- Cheshire County Council
- Greater Manchester authorities

All comments were collated and considered in finalising the draft revised Resilient Network in Figure 3. For completeness the changes to the original RN are outlined in Appendix A.

The existing documents in Table 3 were also referenced in supporting the development of the Resilient Network in order to ensure that appropriate mitigation measures and emergency plans were in place to protect the Resilient Network.

Table 3: Links to Existing Reference Documents required to support the Resilient Network

Area	Document Reference
Climate Change Adaptation	2013-01-22 Climate Change Adaptation_tcm44-218687.pdf Derbyshire Climate Change Policy
Emergency Planning	Flood Response Policy – March 2020 H18 Whole County (except HP) H18 HP V2 Severe Weather Plan V2.0 2016 10
Travel to Work	Travel to work
Winter Service Documentation	Winter Service

Stage 4

Derbyshire was one of the first authorities in the region to establish and publish its own RN. Relevant cabinet member awareness sessions were held to provide the necessary background information prior to seeking formal Cabinet approval as part of the Highway Infrastructure Asset Management Policy in July 2018.

Even though the development of a Resilient Network is a key component of the Code of Practice for Well-Managed Highway Infrastructure, it could not be considered in isolation to a number of key policies that were developed these were:-

- Network Hierarchy
- Highways Infrastructure Asset Management Strategy and Plan

The resulting Cabinet Member awareness sessions were designed to not only provide context and background to the development of the Resilient Network, but to also provide the links and relationships to those policies indicated above. This also served in providing the timeline for the review of the Winter Service policy, which is key to maintaining and managing a Resilient Network.

Stage 5

A key component in maintaining an effective Resilient Network, is the bi-annual review taking on-board lessons learnt from events that have affected the network, responding to changes in the use of the highways network and County Council priorities. This will also go towards amending and adapting the existing emergency prevention and response plans that provide the operational responses in support of the Resilient Network.

The Major Road Network (MRN) consists of ‘A’ Class roads considered important to the local economy which have therefore been given a higher categorisation by the Department for

Transport. The MRN had not been confirmed when the original RN was created and it was intended that it would be considered in the first biennial review.

This review of the RN has included as many sections of the MRN as possible, particularly on a cross-boundary basis to ensure regional connectivity. However, certain lengths have been considered and not included due to known difficulties during adverse winter weather and/or other alternative 'A' roads included on the RN being available that would give more benefit to the local population in adverse weather events.

APPENDICES

APPENDIX A

Proposed Changes to 2018 Resilient Network:

A516 Mickleover Court Interchange – Agreed to add - A516 duals, roundabout and overbridge link to SRN and Derby City RN.

A514 Swarkestone Road, Chellaston – Agreed to add - Link to SRN and Derby RN.

Infinity Park Way, Chellaston – Agreed to add - Link to SRN and Derby RN.

Acorn Way, Derby – No – Other routes on Derby's RN are available nearby.

A61 Alfreton Road, Breadsall – Agreed to add - Link to SRN and Derby RN.

A608 Breadsall – No – Three other RN options to travel into/out of Derby (A6, A38, A6096).

A511 Ashby Road, Woodville – Agreed to add – connects to Leics RN and onwards to A42.

A511 Ashby Road East/Burton Road, Midway – Agreed to add – Links SRN (A38) to A42.

A444 Staffs boundary to Leics boundary – Remove – Closure of bus depot on A444 Woodland Road, Stanton.

A514 Cadley Hill Road (A444 to Tetron Point) – Remove – link to former bus depot (now closed) on A444 Woodland Road, Stanton.

Station Road/ Corporation Road/ Station Street, Ilkeston – Agreed to add these from the Nottinghamshire Boundary into entrance to disabled car park/taxi rank at Ilkeston Station.

Hallam Fields Road, Ilkeston – Remove unadopted section from limit of adoption to Canal.

A608 Station Road, Derby Road, New Derby Road, Langley Mill – Agreed to add from Cromford Road to A610 interchange.

A610 Woodlinkin (Nottinghamshire boundary to Codnor) – No – Although included on MRN there is an alternative (A608 & A6007) which gives benefit to more of the local population.

Heanor Gate Road, Heanor – Remove – Bus depot on this road has now closed.

A608 Derby Road, Heanor – Remove – Link to Heanor Gate Road above.

Police Headquarters, Ripley – Remove – Private road from A610 roundabout into car park.

A610 Butterley Park, Ripley (Police Headquarters roundabout to Wyatts Way roundabout) – Agreed to add – Link to both Police Headquarters and Divisional Headquarters.

Cotes Park Lane, Somercotes – Remove section from Birchwood Way junction to former DCC salting depot.

West Way, Birchwood Way (part), Somercotes – Agreed to add – NHS distribution depot.

A60 Mansfield Road, Creswell (boundary to boundary) – Agreed to add – Links to Nottinghamshire's RN.

A617 Pleasley – Agreed to add – Network continuity with Nottinghamshire's RN and the M1

Waterside Road, Ashbourne – Remove – Un-adopted road.

A515 Station Road, Ashbourne – Agreed to add – Link from bus station and the main route through Ashbourne.

A53 South of Buxton – No – Although included on MRN this route's topography suffers during snow conditions leading to regular road closures in the winter.

A626 Glossop Road/Marple Road (A57 to County boundary) – Agreed to add – Connecting route between Glossop and Marple/ Stockport and main route by ambulances from Glossop area to Stepping Hill hospital, Stockport.