

# Knowsley Metropolitan Borough Council



## Highway Asset Management

## Resilient Network



## Document Information

<b>Title</b>	<b>Knowsley Metropolitan Borough Council Highway Asset Management Resilient Network</b>
<b>Product Number</b>	004
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<b>Description</b>	The following document outlines Knowsley Metropolitan Borough Councils approach to producing a Resilient Network

## Document History

<i>Version No</i>	<i>Status</i>	<i>Author</i>	<i>Date</i>	<i>Changes from Previous Version</i>
01	Draft	JT		First release for Comment
02	Final Draft	JT	13/11/18	
03	Approved		05/12/18	
04	Reviewed		05/11/20	<p>Following consultation with neighbouring authorities to ensure route consistency across boundaries, the additional roads listed below have been added to Appendix A and map in Appendix B has been updated to reflect the changes.</p> <ul style="list-style-type: none"> <li>• Aintree Lane</li> <li>• Coplehouse Lane</li> <li>• Halewood Road</li> <li>• Mackets Lane</li> <li>• Princess Drive</li> <li>• Waterpark Drive</li> <li>• Wheathill Road</li> <li>• Manchester Road</li> </ul>
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## 1. Introduction

Appropriate management of the highway network requires local authorities to prepare for potentially disruptive events, therefore maintaining a network which is resilient to disruption is a critical function of a local highway authority.

Following a period of extreme weather in 2013/14, which saw high winds and heavy rainfall the Department for Transport (DfT) undertook a review of the resilience of the UK transport network to extreme weather events. Link to the [Transport Resilience Review 2014](#)

The review resulted in a number of short and long term recommendations covering all types of transport including local roads. The key short-term recommendation for the local highway network was:

*"It is recommended that Local Highway Authorities identify a 'resilient network' to which they will give priority, in order to maintain economic activity and access to key services during extreme weather. Where Authorities have held formal reviews of the winter's events, they should ensure that these are enacted; Authorities which were not affected should nevertheless continue to prepare themselves for future extreme weather."*

This recommendation aligns with our wider strategies, including our Winter Service Plan and Local Flood Risk Management Strategy.

## 2. The Resilient Highway Network

While our winter and severe weather plans are about preparing for and reacting effectively to adverse weather conditions, our Resilient Highway Network is defined as the portion of our highway network that is absolutely vital to maintaining economic activity and access to key services during extreme weather emergencies and other major incidents. The purpose of defining this network is to identify the most critical routes and associated highway assets, so that planned whole asset maintenance on that part of the network may be prioritised. In doing so, we can ensure that our defined Resilient Highway Network is less prone to failure and in turn improve the boroughs resilience to extreme weather events, industrial action and major incidents.

The overarching aims of Knowsley Councils Resilient Highway Network are;

- to protect economic activity in and through the borough;
- to protect access to key services; and
- to protect access to key infrastructure.

To achieve this, we have used the following criteria to identify and map a network of our most critical routes and highway assets;

- Roads which form a continuous network between 'primary destinations'. *In essence, these are the most important local roads identified by their green-backed road signs.*
- Roads connecting with main employment sites,
- Roads connecting with key operational services requiring emergency public access, such as hospitals with Accident and Emergency facilities,
- Roads connecting with key infrastructure, such as power stations and main transport facilities.

The Liverpool City Region Key Route Network (KRN) is a network of strategically important highway routes within the City Region in terms of maintaining economic activity across the Liverpool City Region. The roads that form the (KRN) within Knowsley, approximately 122km are all included within our resilient network.

Knowsley Council is responsible for approximately 760km of highway. The Strategic gritting routes cover approximately 144km and the Primary gritting routes cover approximately 156km. The Resilient Highway Network is approximately 153km, approximately 20% of the whole network.

The Resilient Highway Network defined by this plan will be reviewed at least every two years and after any major event to ensure it remains relevant as lessons are learnt and services and businesses within the Borough and Liverpool City Region change.

### 3. Key Service Locations

A number of key services have also been considered when developing our Resilient Network to ensure access is maintained as far as is practicably possible during extreme conditions. These include:

- Train Stations
- Bus Stations
- Hospitals
- Police Stations
- Fire Stations
- Ambulance Stations
- Key Council Buildings
- Tourist Attractions
- Town Centres
- Industrial Parks
- Retail Parks

#### 4. RISKS TO THE HIGHWAY NETWORK

The specific risks to the highway are established by reviewing past occasions when events have affected highways/transport and by assessing how the impacts may become more frequent or severe in the future.

Potential events and resulting impacts are shown below:

Risk	Direct Impact	Indirect Impact
<b>Increasing temperature</b>	<ul style="list-style-type: none"> <li>• Deformation of road surface</li> <li>• Subsidence &amp; heave</li> </ul>	<ul style="list-style-type: none"> <li>• Risk to travellers safety and workers</li> <li>• Change in travel patterns (tourism etc)</li> </ul>
<b>Intense rainfall and flooding</b>	<ul style="list-style-type: none"> <li>• Overwhelmed drainage systems</li> <li>• Flooding of the network and other routes</li> <li>• Flood damage to surfaces</li> <li>• Rising water tables</li> <li>• Weakening of structure foundations</li> <li>• Failure of power sources (traffic management)</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced visibility</li> <li>• Increase in collisions</li> <li>• Increased car use</li> </ul>
<b>High winds, storms</b>	<ul style="list-style-type: none"> <li>• Fallen trees, debris on road</li> <li>• Operational restrictions on exposed routes</li> </ul>	<ul style="list-style-type: none"> <li>• High sided vehicle travel restricted</li> </ul>

<b>Extreme winter weather</b>	<ul style="list-style-type: none"> <li>• Damage to road surface</li> <li>• Traffic disruption</li> </ul>	<ul style="list-style-type: none"> <li>• Risk to travellers safety and workers</li> <li>• Increased car use</li> </ul>
<b>Third party damage</b>	<ul style="list-style-type: none"> <li>• Damage to road surface</li> <li>• Traffic disruption</li> </ul>	<ul style="list-style-type: none"> <li>• Risk to travellers safety and workers</li> </ul>
<b>Event on the network</b>	<ul style="list-style-type: none"> <li>• Damage to road surface</li> <li>• Traffic disruption</li> </ul>	<ul style="list-style-type: none"> <li>• Risk to travellers safety and workers</li> </ul>

## 5. MITIGATION

Resilience will be achieved through a combination of activities which will include;

- Pre-planned diversions to allow continued movement of traffic;
- Improved drainage systems;
- Regular maintenance of existing drainage systems;
- Pre-salting of affected routes;
- Snow ploughing;
- Installation of hedging/fencing to aid drainage and restrict snow drifting

Knowsley has developed a Flood Risk Strategy to ensure the protection of residents, property and infrastructure from flooding. This can be found on the link below;

<https://www.knowsley.gov.uk/residents/roads/flood-risk-management>

**Appendix A - Resilient Network – Road List**

ROAD	NEIGHBOURING AUTHORITY	ROAD CLASSIFICATION	KRN	GRITTING ROUTE
AINTREE LANE	SEFTON	B Road		Primary
ARCHWAY ROAD		B Road	Yes	Strategic
BAILYES LANE		C Road		Strategic
BANK LANE	SEFTON	A Road	Yes	Strategic
BLUE BELL LANE		C Road		Strategic
BRIDGE ROAD		C Road		Strategic
CABLES WAY		U Road		Strategic
CARR LANE		U Road		Strategic
CHERRYFIELD DRIVE		U Road		Strategic
COOPERS LANE		A Road	Yes	Strategic
COPPLEHOUSE LANE	LIVERPOOL	C Road		Primary
COUNTY ROAD		A Road	Yes	Strategic
CRONTON ROAD	HALTON	A Road	Yes	Strategic
DALE LANE		C Road		Primary
DELPH LANE		B Road		Strategic
DERBY ROAD		C Road		Strategic
DERBY STREET		A Road	Yes	Strategic
DRAGON DRIVE		C Road		Strategic
DRAGON LANE		C Road		Strategic
EAST LANCASHIRE ROAD	LIVERPOOL & ST HELENS	A Road	Yes	Strategic
GREENSBRIDGE LANE		C Road		Strategic
HALEWOOD ROAD	LIVERPOOL	C Road		Primary
HALL LANE		A Road	Yes	Strategic
HEADBOLT LANE		C Road		Primary
HIGH STREET		A Road	Yes	Strategic
HIGHER ROAD	LIVERPOOL	A Road	Yes	Strategic
HUYTON HEY ROAD		U Road		Strategic
HUYTON LANE		A Road	Yes	Strategic
IRLAM DRIVE		U Road		Strategic
KIRKBY ROW		C Road		Strategic
KNOWSLEY EXPRESSWAY		A Road	Yes	Strategic
KNOWSLEY LANE		B Road	Yes	Strategic
LATHOM ROAD		U Road		Primary
LEATHERS LANE		U Road		Strategic



LICKERS LANE		C Road		Strategic
LIVERPOOL ROAD	LIVERPOOL	A Road	Yes	Strategic
LONGMOOR LANE	LIVERPOOL	A Road	Yes	Strategic
LOWER ROAD	HALTON	C Road		Primary
M62 MOTORWAY	LIVERPOOL	Motorway	Yes	Strategic
MACKETS LANE	LIVERPOOL	C Road		Primary
MANCHSTER ROAD				
MARKET PLACE		B Road		Strategic
MOORGATE ROAD		A Road	Yes	Strategic
MOORGATE ROAD SOUTH		A Road		Strategic
NETHERLEY ROAD	LIVERPOOL & HALTON	B Road	Yes	Strategic
NORTH PERIMETER ROAD		C Road		Primary
ORMSKIRK ROAD		U Road		Strategic
PENNYWOOD DRIVE		U Road		Strategic
PERIMETER ROAD		C Road		Primary
POPLAR BANK		U Road		Strategic
PORTICO LANE	ST HELENS	B Road		Strategic
PRESCOT BY-PASS		A Road	Yes	Strategic
PRINCESS DRIVE	LIVERPOOL	U Road		Primary
ROBY ROAD	LIVERPOOL	A Road	Yes	Strategic
SCHOOL LANE		B Road	Yes	Primary
SETH POWELL WAY		A Road	Yes	Strategic
SEWELL STREET		U Road		Strategic
SOUTH BOUNDARY ROAD		A Road	Yes	Strategic
SPEKE BOULEVARD	LIVERPOOL	A Road	Yes	Strategic
SPEKE ROAD	HALTON	A Road	Yes	Strategic
ST CHADS DRIVE		U Road		Strategic
ST HELENS ROAD	ST HELENS	A Road	Yes	Strategic
STELEY WAY		U Road		Strategic
STOCKBRIDGE LANE		B Road	Yes	Strategic
TARBOCK ROAD		A Road	Yes	Strategic
VALLEY ROAD		A Road	Yes	Strategic
WARRINGTON ROAD	ST HELENS	A Road	Yes	Strategic
WATERPARK DRIVE	LIVERPOOL	U Road		Primary
WEBSTER DRIVE		U Road		Strategic
WHEATHILL ROAD	LIVERPOOL	C Road		Primary

WHITEFIELD DRIVE		U Road		Strategic
WHITEFIELD LANE		C Road		Strategic
WILSON ROAD		U Road		Strategic
WINDY ARBOR ROAD		C Road		Strategic

**Appendix B - Resilient Network – Map**

