

West Midlands Key Route Network

Birmingham to Stafford



Transport for
West Midlands

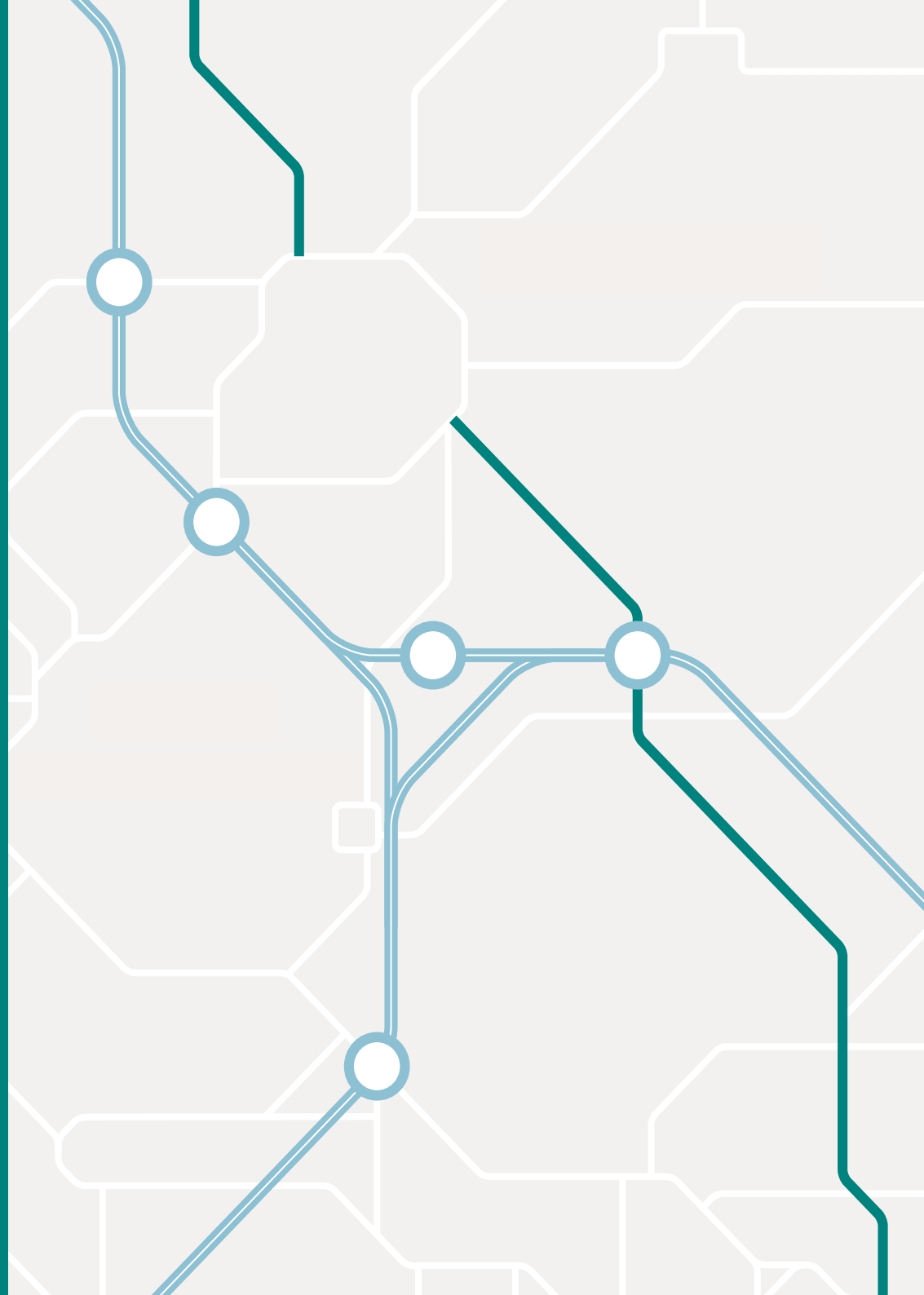
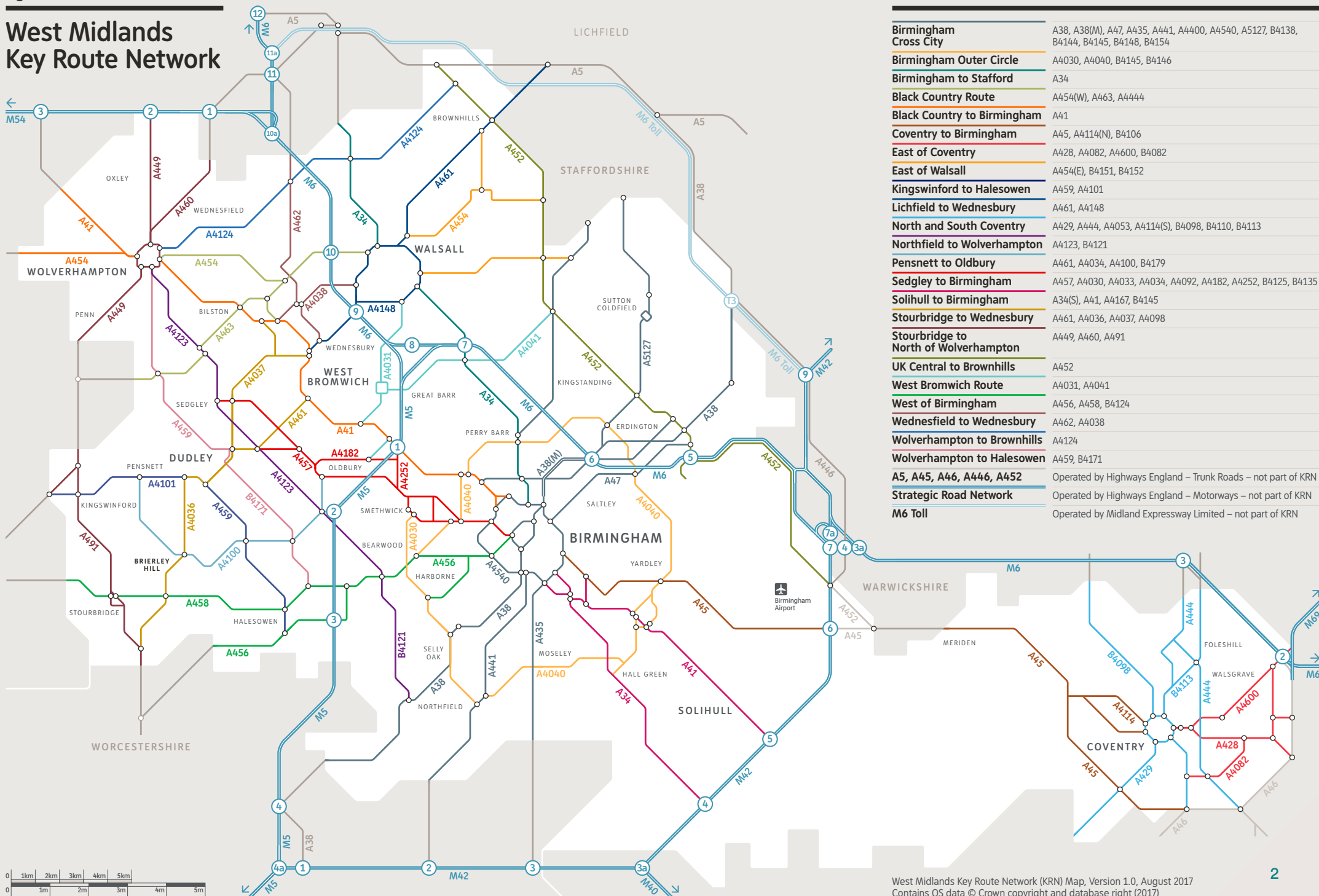


Figure 1

West Midlands Key Route Network



Birmingham Cross City	A38, A38(M), A47, A435, A441, A4400, A4540, A5127, B4138, B4144, B4145, B4148, B4154
Birmingham Outer Circle	A4030, A4040, B4145, B4146
Birmingham to Stafford	A34
Black Country Route	A454(W), A463, A4444
Black Country to Birmingham	A41
Coventry to Birmingham	A45, A4114(N), B4106
East of Coventry	A428, A4082, A4600, B4082
East of Walsall	A454(E), B4151, B4152
Kingswinford to Halesowen	A459, A4101
Lichfield to Wednesbury	A461, A4148
North and South Coventry	A429, A444, A4053, A4114(S), B4098, B4110, B4113
Northfield to Wolverhampton	A4123, B4121
Pensnett to Oldbury	A461, A4034, A4100, B4179
Sedgley to Birmingham	A457, A4030, A4033, A4034, A4092, A4182, A4252, B4125, B4135
Solihull to Birmingham	A34(S), A41, A4167, B4145
Stourbridge to Wednesbury	A461, A4036, A4037, A4098
Stourbridge to North of Wolverhampton	A449, A460, A491
UK Central to Brownhills	A452
West Bromwich Route	A4031, A4041
West of Birmingham	A456, A458, B4124
Wednesfield to Wednesbury	A462, A4038
Wolverhampton to Brownhills	A4124
Wolverhampton to Halesowen	A459, B4171
A5, A45, A46, A446, A452	Operated by Highways England – Trunk Roads – not part of KRN
Strategic Road Network	Operated by Highways England – Motorways – not part of KRN
M6 Toll	Operated by Midland Expressway Limited – not part of KRN

The Birmingham to Stafford route is a 10 mile/17km section of the West Midlands Key Route Network (KRN) and is entirely formed of the A34. The route provides strategic link access to sub-urban areas of Northwest Birmingham and Walsall.

Across the region the route also provides an important strategic link, particularly for sub-urban areas where it allows surrounding communities access to retail, leisure and employment opportunities. It also enables essential links for businesses in Birmingham and Walsall to provide products and services locally, regionally and to international markets.

This route provides access to the Alexander Stadium and Perry Barr Greyhound Stadium which are important leisure destinations and retail at One Stop Shopping Centre for retail within Birmingham. It is a key access route to the Walsall Town Centre from the North and South of Walsall.

The Birmingham to Stafford route has the following connection to the Strategic Road Network (SRN) operated by Highways England:

- A34 at M6 Junction 7

This connection to the M6 enables further regional access to the M1, M5, M40 and M6 Toll which links the West Midlands to other regions in England. These connections are essential for residents making long distance journeys and also for businesses providing services and transporting products across the country. The Route also forms crucial connections with five other Routes on the KRN, these are:-

Birmingham Cross City

- A34 New Town Row/A4540 New John Street West
- A34 Birchfield Road/A453 Aldridge Road

Birmingham Outer Circle

- A34 Birchfield Road/A4040 Aston Lane

West Bromwich Route

- A34 Birmingham Road/A4041 Newton Road (Scott Arms Junction)

Lichfield to Wednesbury

- A34 Birmingham Road/A4148 Broadway
- A34 Green Lane/A4148 Court Way

Wolverhampton to Brownhills

- A34 Stafford Road/A4124 Lichfield Road

The section of the route north of Walsall is comprised of mainly single carriageways and the section between Walsall and Birmingham City Centre are mainly dual carriageways. The route passes through the built up areas of Newtown, Perry Barr, Great Barr and Bloxwich. It also passes through suburban residential communities and local shopping centres. In most cases properties are well set back from the carriageway with off-street parking and there are Red Route restrictions in place along A34 Walsall Road and north of Walsall Town Centre.

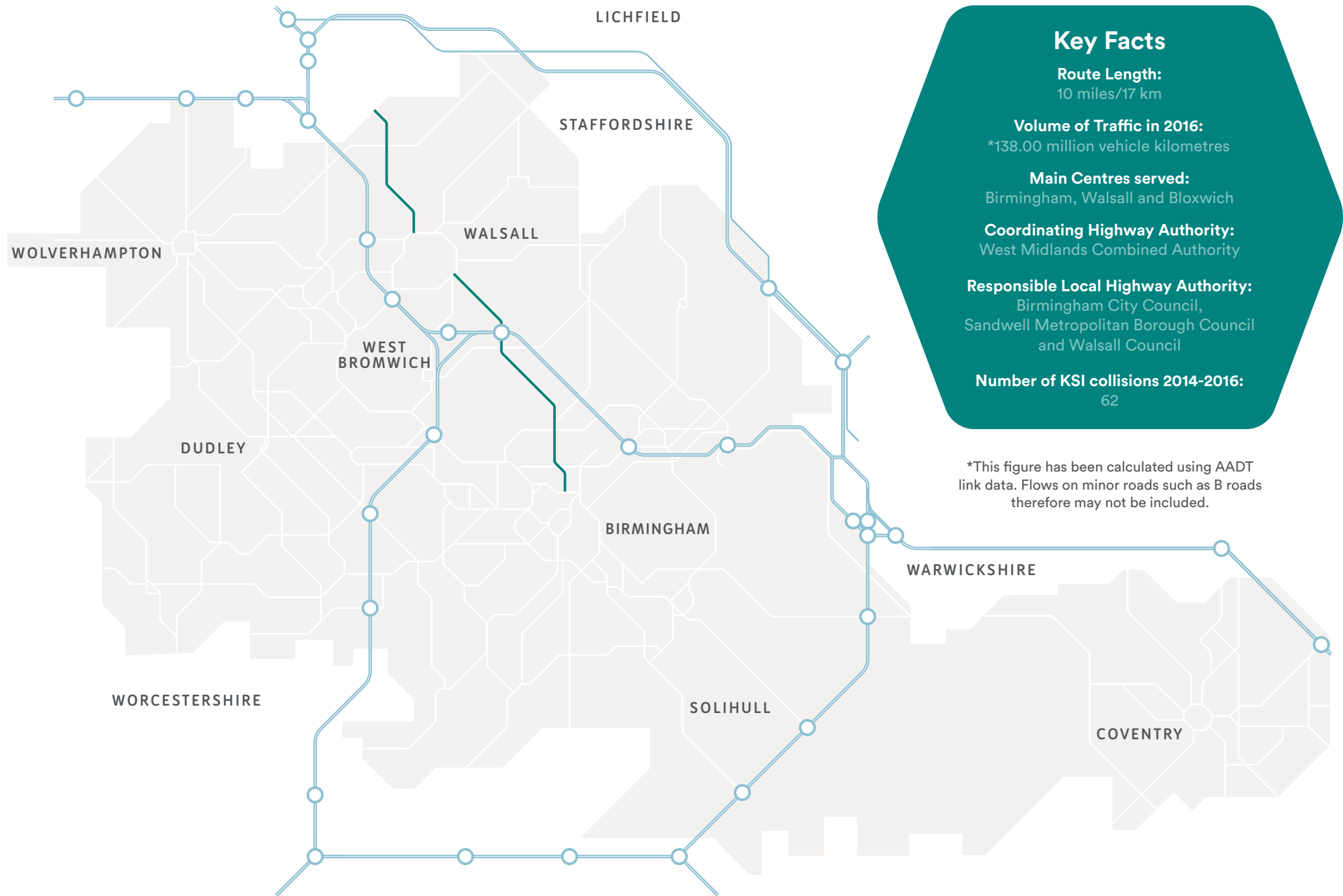


Figure 2

Congestion, Delay, Reliability

This route represents 3% of the total length of the West Midlands Key Route Network. According to the latest data available from 2016, this route had a minimum annual average daily flow (AADF) of 11,600 vehicles, a maximum of 56,700 with an average of 22,600 AADF.

The route experiences large volumes of traffic, particularly on:

- New Town Row/Birchfield Road between A41 New John Street West and Perry Barr
- Walsall Road/Birmingham Road between A4014 Newton Road, Scott Arms, and A4148 Broadway; and
- Green Lane/High Street between Leamore Lane and A4124 Bell Lane/Lichfield Road.

The locations of the most significant congestion - related delays (>60 sec/km) are set out in Tables 1 and 2.

Table 1: AM Peak Congestion Related Delays

Road	Location	Direction
A34	New Town Row/High Street, Victoria Road grade-separated junction to A4540 Newtown Middleway	Southbound
A34	New Town Row, Porchester Street to Newbury Road	Northbound
A34	Walsall Road, B4124 Old Walsall Road to Rocky Lane, Perry Barr	Southbound
A34	Walsall Road/Birmingham Road, Old Walsall Road to M6 Junction 7	Northbound
A34	Birmingham Road, Merrion's Close to A4041 Queslett Road, Scott Arms	Southbound
A34	Birmingham Road, Beacon Road to A4148 Broadway, Highgate	Northbound
A34	Green Lane, A4148 Blue Lane West to Short Acre Street, Birchills	Northbound
A34	Green Lane, Hospital Street to A4148 Court Way, Birchills	Southbound
A34	Somerfield Road, Addenbrooke Street to Leamore Lane, Leamore	Southbound
A34	Somerfield Road/High Street, B4210 High Street to A4124 Bell Lane, Bloxwich	Northbound
A34	Stafford Road/High Street, Francis Drive to B4210 Elmore Green Road, Bloxwich	Southbound

Peak hour journey time on the sections of the route experiencing the highest delays has been found to be 150% higher than (i.e. 2½ times) the equivalent free flow time, which is based on the average journey time between 22:00 – 06:00.

A particular impact of the congestion is that it creates problems with access to the Birmingham Children’s Hospital, Walsall Manor Hospital and TRW Electronics, Holford Drive Industrial Estate and other businesses in north Birmingham and North Walsall which may be providing or reliant upon just-in-time deliveries.

Average Speeds

The average speed for this route in the AM peak is between 10-20 mph throughout its busiest sections. The areas approaching Birmingham City Centre and Walsall Town Centre are particularly slow during the morning and evening peaks and speed can be as low as less than 10 mph. The sections where average peak speeds are lower than 10 mph are as follows:

- A34: Booths Farm Rd-Church Rd (Alexander Stadium)
- A34: B4124-A4041
- A34: Walstead Rd/Bell Rd- Broadway (Walsall Ring Road)
- A34 High St: B4210- Bell Lane/Lichfield Rd.

Table 2: PM Peak Congestion-Related Delays

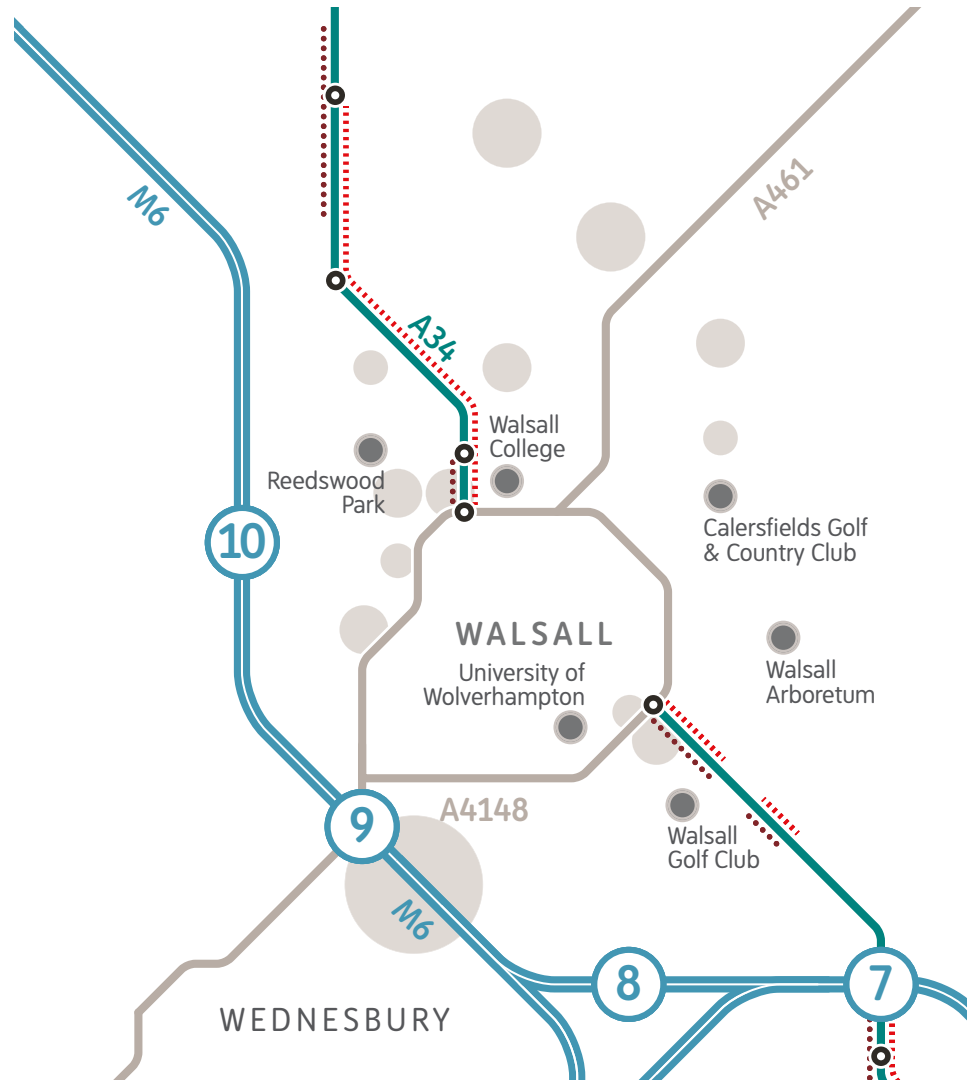
Road	Location	Direction
A34	High Street/Birchfield Road/Walsall Road, A4540 New John Street West to A453 Aldridge Road, Perry Barr	Northbound
A34	Walsall Road, Regina Road to Church Road, Perry Barr	Northbound
A34	Walsall Road, Booth Farm Road to A4041 Queslett Road, Scott Arms	Northbound
A34	Birmingham Road, M6 junction 7 to A4041 Queslett Road, Scott Arms	Southbound
A34	Green Lane, A4148 Blue Lane West to Short Acre Street, Birchills	Northbound
A34	Green Lane, Reedswood Way to Hospital Street, Birchills	Southbound
A34	Green Lane, Reedswood Way to Leamore Lane, Leamore	Northbound
A34	Somerfield Road/High Street, Stokes Street to A4124 Bell Lane, Bloxwich	Northbound
A34	High Street, Wolverhampton Road to B4210 High Street	Southbound
A34	Somerfield Road/High Street, B4210 High Street to A4124 Bell Lane, Bloxwich	Northbound
A34	Stafford Road/High Street, Francis Drive to B4210 Elmore Green Road, Bloxwich	Southbound

Junction Capacity Issues

There are currently nine junctions along the route where the evidence suggest there are capacity issues restricting the free flow of traffic in peak hours; these are:

- A34 New Town Row/A4540 New Town Middleway
- A34 High Street/Witton Road/Lozells Road
- A34 Birchfield Road/A4040 Aston Lane
- A34 Walsall Road/A4041 Queslett Road (Scott Arms)
- A34 Birmingham Road/A4148 Broadway
- A34 Green Lane/A4148 Court Way
- A34 Green Lane/Old Birchills/Hospital Street
- A34 Green Lane/Leamore Lane
- A34 High Street/A4124 Lichfield Road/Bell Lane

West Midlands Key Route Network Birmingham to Stafford



Key

Roads	The Route
	Strategic Road Network operated by Highways England
Environment, Flows and Junction Capacity	Flooding area
	Congestion area
	Junction capacity issue
Route Safety	KSI hotspot zone – high number of serious or fatal incidents
Key Considerations	Housing development area
	Named site of strategic importance
	District and local centres

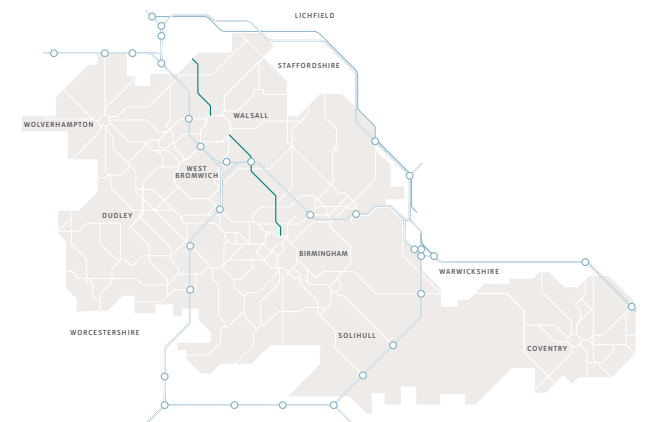
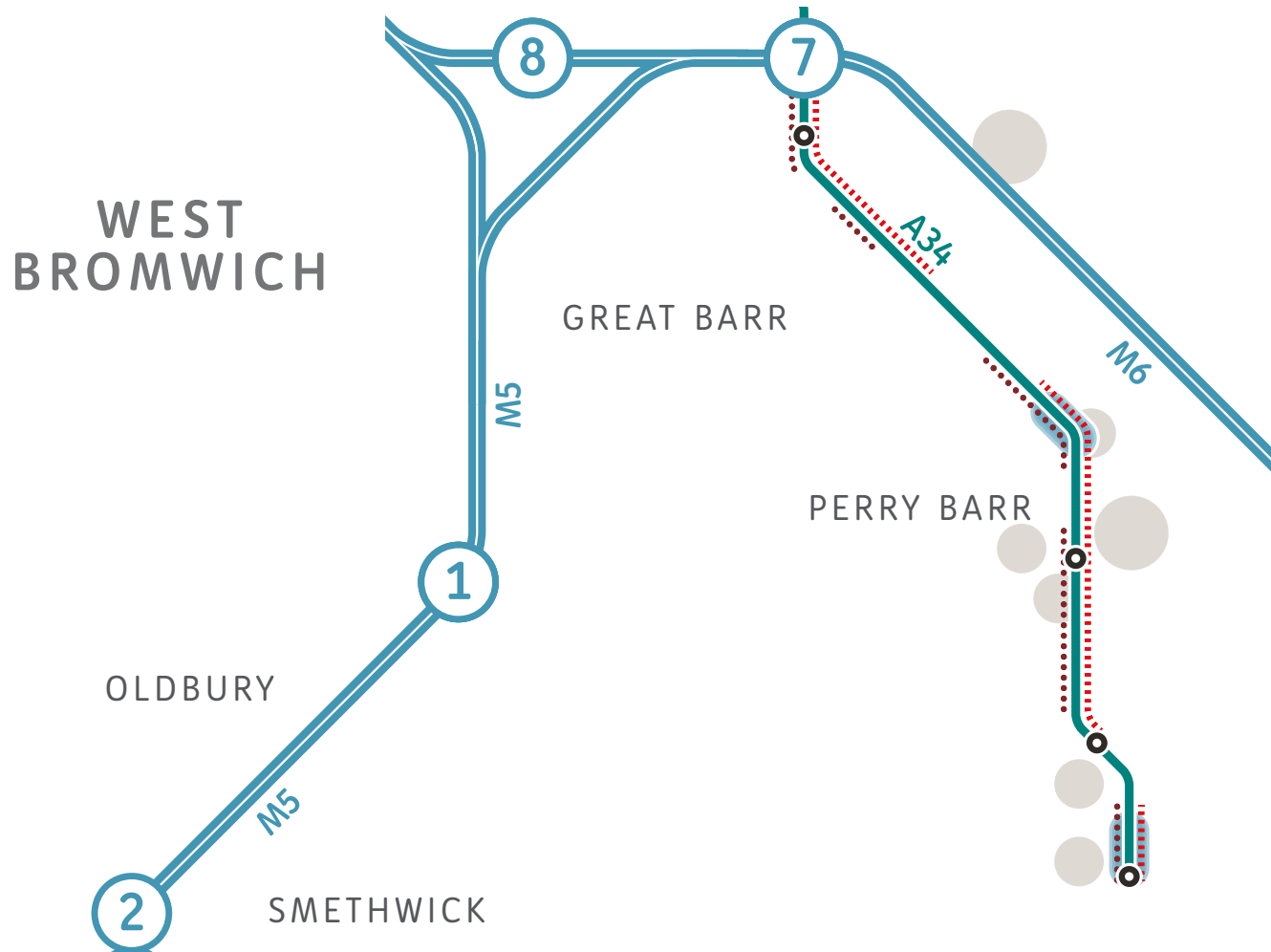


Figure 3 – 1 of 2

KRN 4 – Birmingham to Stafford

West Midlands Key Route Network Birmingham to Stafford



Key

Roads	The Route
	Strategic Road Network operated by Highways England
Environment, Flows and Junction Capacity	Flooding area
	Congestion area
	Junction capacity issue
Route Safety	KSI hotspot zone – high number of serious or fatal incidents
Key Considerations	Housing development area
	Named site of strategic importance
	District and local centres

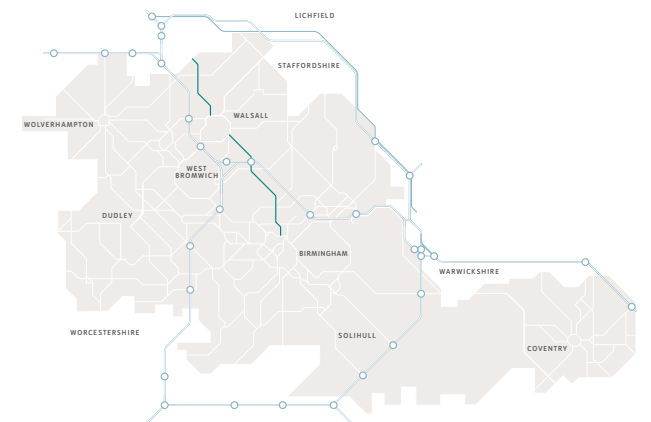


Figure 3 – 2 of 2

KRN 4 – Birmingham to Stafford

Improving Road Safety is critical to the overall vision of the West Midlands Strategic Transport Plan – Movement for Growth. The development of a new West Midlands Road Safety Strategy and Action Plan will have regard to the current West Midlands forecasts to achieve a 40% reduction in fatalities and serious injury casualties by 2020, from the 2015 baseline.

During the 2016 calendar year, we noted the following key statistics:

Collisions

- 124 collisions, involving 235 vehicles
- Main contributory factor: Failed to look properly (pedestrian) (19% of all collisions)
 - The KSI ratio for this group is one of the highest for this route at 17% with 20% of all serious injured being attributed to this group.
- Main contributory factors
 - Careless or Reckless or In a hurry (Driver) (7% of all collisions)
 - Failed to judge other persons path or speed (6% of all collisions)

Casualties

- Total casualties: 164
- Killed and Seriously Injured: 22 (15% of all casualties, up 3% when compared to 2015 figure of 25 of 209)
 - Killed: 4 (2% of all casualties, up by 2%)
 - Seriously injured: 18 (12% of all casualties, up by 0.2%)
- Slight: 140 (164% of all casualties)

Casualty Types

We noted the following key statistics in relation to casualties falling into specific groups:

- Pedestrians: 36 (an increase of 5% compared to 2015)
- Powered Two wheel vehicles: 13 (an increase of 0.3% compared to 2015)
- Pedal cyclists: 7 (a reduction of 0.1% compared to 2015)
- Car occupants: 108 (a reduction of 5% compared to 2015)

KSI Clusters

There is a spread of personal injury collisions for the overall route but there are KSI clusters at the following locations:

- On the urban single carriageway section around its junctions with the A4124 and the B4210 which is in a residential/high street environment.
- In the vicinity of the roundabout junction with the Broadway, this section being a mix of urban single/dual carriageway in a built-up residential environment.
- In the vicinity of the junction with the A4041, this section is a mix of urban single/dual carriageway in a residential environment.
- In the vicinity of the junction with the A4040, this section is a mix of urban single/dual carriageway in a residential environment
- In the vicinity of the junction with the A4540, this section is urban dual carriageway in a residential environment.



CYCLING

The A34 from Lancaster Circus to Perry Barry is currently being upgraded with a segregated cycleway as part of Birmingham Cycle Revolution. Throughout the remaining length of the A34 there is shared use bus lanes and advisory cycle lanes. The advisory and shared use have some constrictions due to residential parking.

The M6 at Junction 7 acts as a barrier for active travel. North of the Scott Arms Junction to the M6 Junction 7 there are no formal provisions for cycling. From Junction 7 through Walsall Ring Road, there is some shared use bus lanes. North of Walsall, the canal towpath is a parallel off road route to the A34.

The Sustainable Transport Delivery Excellence Programme (STDEP) for the West Midlands has defined a number of 'Priority Corridors' for a Strategic Cycle Network in the region. One of these corridors runs along the A34 between Birmingham City Centre and Walsall. The section of this route north of the Walsall Ring Road towards Bloxwich is not a priority corridor.



From the section of the route between Birmingham and Walsall, the Route is well served by service numbers 51/X51 operating at 5 – 10 minute intervals. On the section of the Route to the south of M6 junction 7, and especially to the south of Perry Barr these are supplemented by numerous additional high frequency bus services operating every few minutes. These services provide access to Birmingham City Centre, Walsall Town Centre, Perry Barr, Cannock, Birmingham City University and Wolverhampton University (Walsall Campus), shopping facilities, leisure destinations including Alexander Stadium and Birchfield Greyhound and Speedway track, employment sites (Gun Quarter, Witton, Leamore, Bridgetown (Cannock) and the surrounding communities.

To the north of Walsall, the Route is less well served although the X51 continues to provide a service as far as Cannock operating at 15-20 minute intervals.

The average bus speed along this route is 11.3mph (data taken from the 51 bus route).

The average total number of daily bus trips is 65,346.

There are inbound and outbound bus lanes on the A34 between Birmingham City Centre and north of Perry Barr with bus gates over the Birmingham and Fazeley Canal – introduced through the bus showcase projects. There is a long northbound bus lane and a shorter

Table 3: Main Bus Routes

Road(s) Served	Frequency	Route No.
A34 Birmingham - Walsall	Every 10 mins	51
Perry Beeches – Great Barr	Every 12 mins	28
A34 Birmingham – Perry Barr	Every 10 mins	33
A34 Birmingham - Cannock	Every 15-20 mins	X51
A34 Birmingham – Perry Barr	Every 20 mins	997
A34 Birmingham – Perry Barr	Every 20 mins	907
A34 Birmingham – Perry Barr	Every 30 mins	937/937A
A34 Handsworth Wood – Perry Barr	Every 15 mins	46
A34 Birmingham – Perry Barr	Every 15-30 mins	935
A34 Birmingham – Perry Beeches	Every 30 mins	52
A34 Birmingham – Perry Barr	Every 30 mins	934
A34 Birmingham – Perry Beeches	Every 20 mins	52A
A34 Walsall - Birchills	Every 30 mins	69
A34 Bloxwich	Every 30 mins	1
A34 Bloxwich	Every 30 mins	2/2E
A34 Walsall - Birchills	Every 30 mins	70
A34 Walsall - Birchills	Every 15 mins	70A
A34 Birmingham – Perry Barr	Every 30 mins	936

*Note - All daily averages have been obtained by analysing 15 days data (Mon-Fri) during the month of March 2017.

southbound bus lane between Chapel Lane and Beacon Road on the A34 Birmingham Road and a southbound bus lane on the A34 Birmingham Road over M6 Junction 7 to Sundial Lane. There is a northbound bus lane on the A34 Walsall Road between Old Walsall Road and A4041 Newtown Road. There is a short southbound bus lane on the A34 Walsall Road before Beeches Road Junction. There are further sections of bus lane on the A34 Walsall Road between the Canal Bridge and Perry Barr. There are inbound bus lanes on B4210 Stafford Street north of Walsall Town Centre, inbound and outbound bus lanes on B4210 Bloxwich Road between Forest Lane and the railway bridge and southbound bus lanes on B4210 High St / Bloxwich Road between Nursery Road and Harden Road.

In terms of rail, the Birmingham – Rugeley (via Perry Barr, Walsall and Cannock) rail line provides 4 trains per hour on the electrified section between Birmingham and Walsall and 2 trains per hour north of Walsall. The trains are less competitive against buses due to the loop via Aston or Soho in Birmingham. The route between Walsall and Rugeley is being electrified including line speed improvement and removal of level crossings. The West Midlands Strategic Plan - Movement for Growth and HS2 Connectivity Package indicate further electrification and extension of Walsall services to a new station at Aldridge.

The following stations on this line have park and ride facilities:

- Rugeley Trent Valley
- Rugeley Town
- Hednesford
- Cannock
- Landywood
- Bloxwich North
- Bescot Stadium
- Tame Bridge Parkway

There are proposals for Sprint Rapid Transit along this route from Birmingham City Centre to Walsall Town Centre. In addition, there are also proposals for the development of a Rapid Transit (Tramtrain/ Rail) route between Stourbridge and Brownhills / Aldridge which would cross the route at Walsall.

The AADF data for 2016 has been used to analyse HGV flows on each respective route. The Birmingham to Stafford route is evidently an important route for the movement of freight in the region. The following sections have flows of greater than 1,000 HGVs per day:

- A34 between Newtown Row and Perry Barr;
- A34 between the A4041 Queslett Road and M6 J7; this connection to the M6 is of national significance; in total, between the Midlands and North West in 2014, approximately 45.5m tonnes of goods were transported according to MDS Transmodal (MDST) data; a significant amount of this travels on the M6.

Many other sections have flows of between 500 and 1,000 HGVs. The average number of Heavy Goods Vehicles using the route on a daily basis was 629, which represents 3% of all vehicular traffic.



Resilience

The route has parallel strategic roads including the M6/A38(M) for end to end traffic, B4124 Hamstead Road in Birmingham and B4210 north of Walsall. There is a considerable degree of resilience contained within the Birmingham networks for radial journeys. However, certain critical sections can cause grid-lock including on the motorway network, in particular at Perry Barr, where two key routes serving North Birmingham converge at an underpass susceptible to flooding (affecting M6 junction 7).

There is a lack of effective intermodal network resilience through Perry Barr. Given the existing capacity constraints in the peaks in the Birmingham network, a restriction on any of the roads will have considerable adverse implications for journey times on the remainder of this route and surrounding routes.

Diversion Route

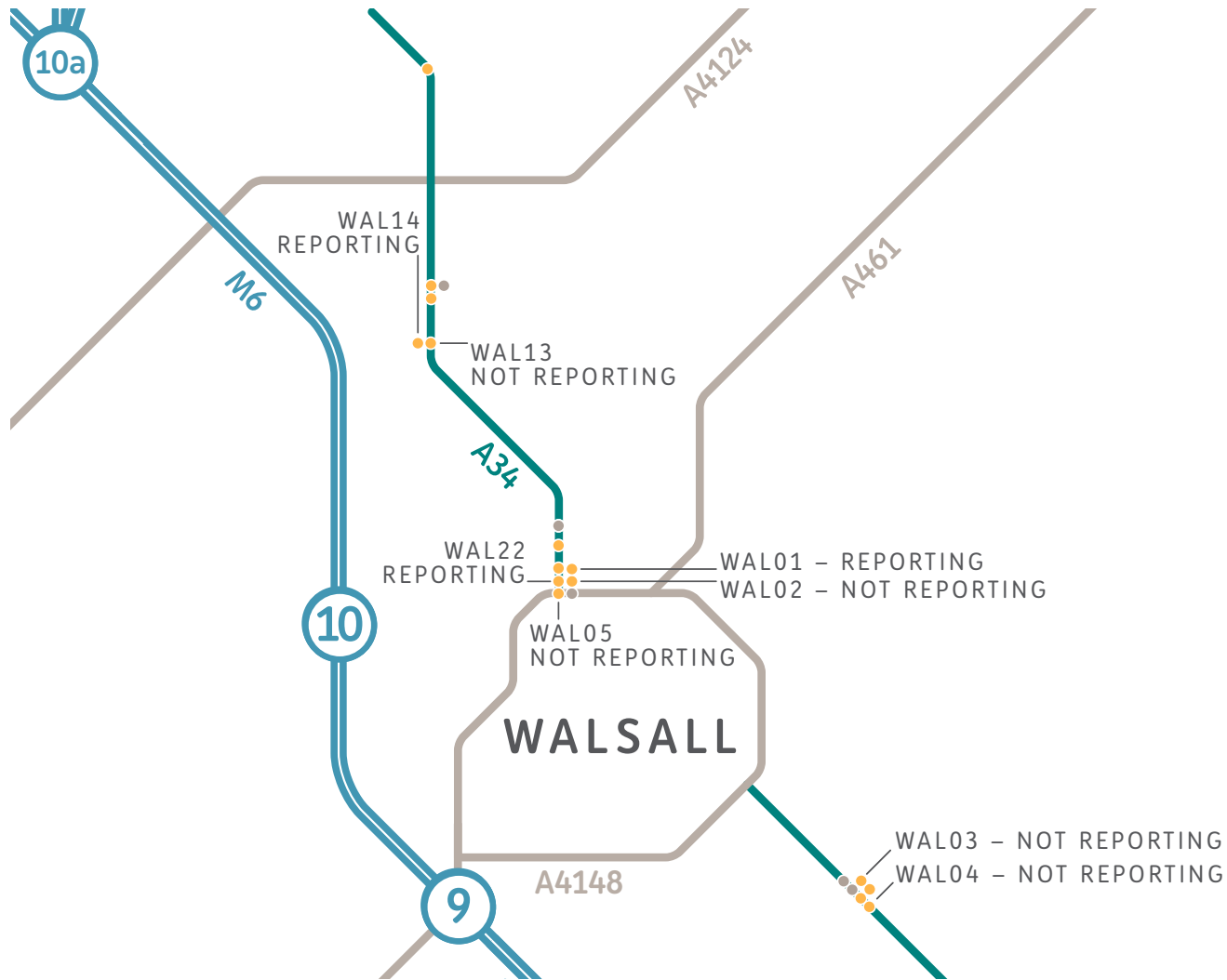
The A34 between Birmingham and Great Barr is a signed Emergency Diversion Route (EDR) for the M6 when there are closures or incidents between junctions 6 and 7 of that motorway, which puts severe stress on this route.

Between Great Barr and Walsall Ring Road it is a signed EDR for incident or closures of the M6 between J7 and the Ray Hall Interchange, between J9 and the Ray Hall Interchange or between J10 and J9

Flooding

Flooding on this route impacts the overall performance, safety of road users and affects the lives of those living in the vicinity. The evidence gathered indicates that there are two flood zones, both located on the A34 between Birmingham and Walsall.

West Midlands Key Route Network Birmingham to Stafford



Key

Roads	The Route
	Strategic Road Network operated by Highways England
Asset Location & Conditions (where known & information available)	CCTV
	Automatic Number Plate Recognition (ANPR) / Journey Time Monitoring System (JTMS) locations
	Traffic Camera locations

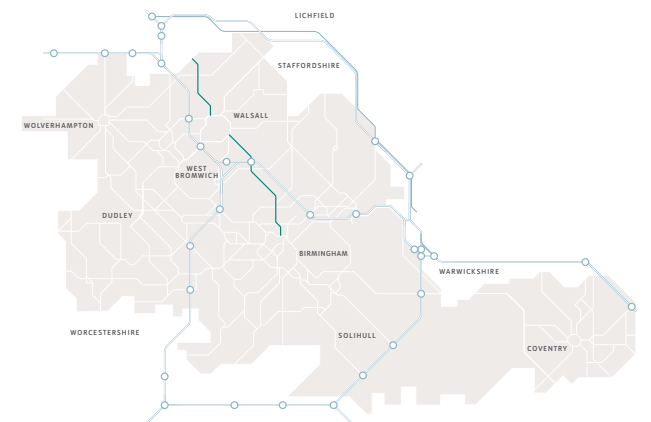
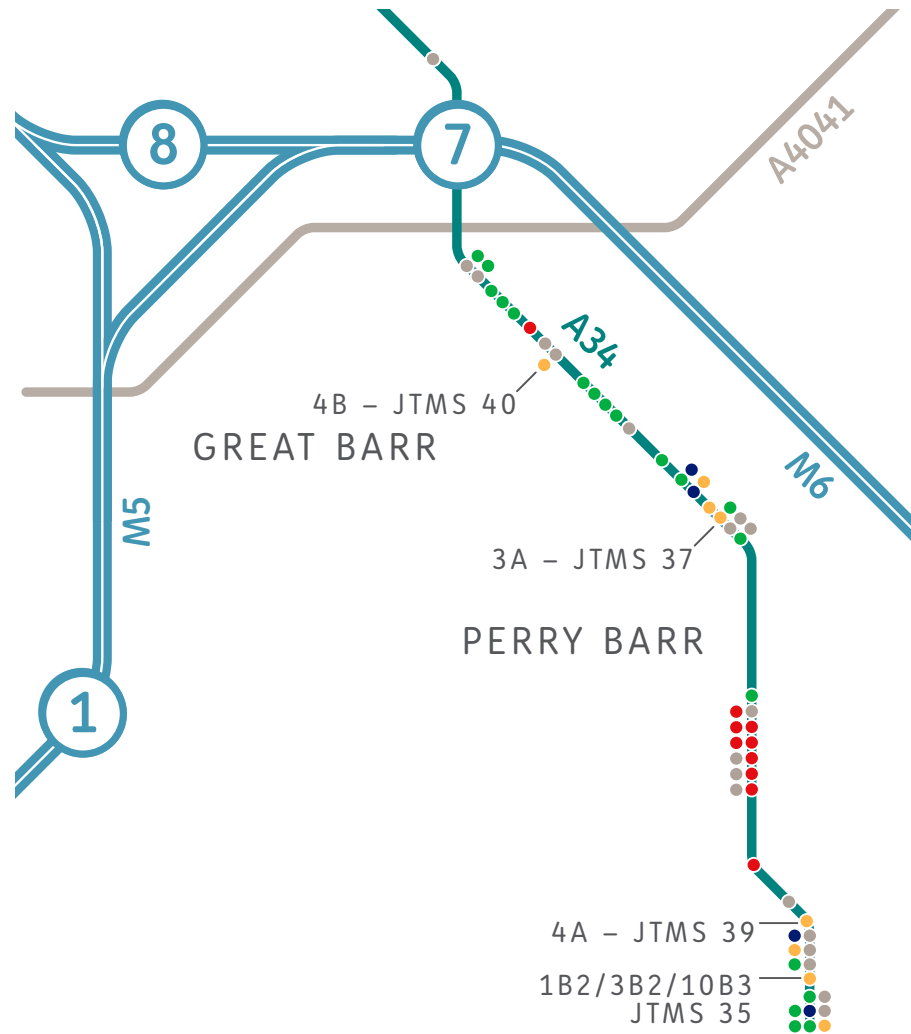


Figure 4 – 1 of 2

West Midlands Key Route Network Birmingham to Stafford



Key

Roads

- The Route
- Strategic Road Network operated by Highways England

Asset Location & Conditions (where known & information available)

- CCTV
- Split Cycle Offset Optimisation Technique (SCOOT) locations
- Variable Message Signs (VMS) locations
- Automatic Number Plate Recognition (ANPR) / Journey Time Monitoring System (JTMS) locations
- Traffic Camera locations

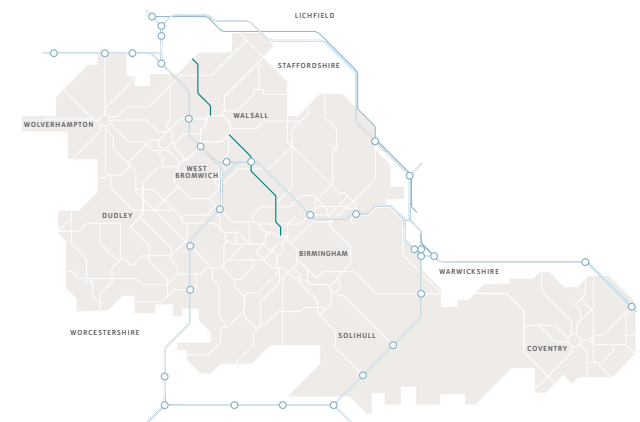


Figure 4 – 2 of 2

KRN 4 – Birmingham to Stafford

There are inequalities in health between the local authorities within the West Midlands – at local authority level the lowest healthy life expectancy at birth for men is 56.4 years, and the highest is 63.8 years. Amongst women the lowest is 59 years and highest 67.9 years. Similarly there are inequalities in healthy life expectancies within each local authority. Closing this gap in health inequalities and increasing the healthy life expectancy by 2030 is an objective of the WMCA's Strategic Economic Plan.

The Birmingham to Stafford route runs through two areas of lower healthy life expectancy, north of the ring roads of Birmingham and Walsall. In both cases communities on both sides of the road have lower healthy life expectancy than the national average of 83. North of Birmingham, the population is younger with around one in three residents younger than seventeen. Whilst this is true of the A34 just north of Walsall, the population is older closer to the Stafford boarder, and in this area greater proportions of adults aren't in employment or live with a disability.

Some sections of the route fall within the Birmingham Air Quality Management Area (AQMA) declared for Nitrogen Oxide (NO₂) and Particulate Matter (PM₁₀), as well as Walsall AQMA which is declared for NO₂ also.

The West Midlands has significant air quality problems. Every year there are between 2,000 and 2,400 deaths caused by air pollution. This is a huge health issue for people in the region, increasing the risk of lung disease and heart disease. There are parts of our region where considerable action such as the introduction of Clean Air Zones (CAZs) is required by Government to improve air quality.

Across the West Midlands the local authorities have a statutory duty to maintain its highway network in a safe condition. This also includes carrying out routine maintenance of highway assets which could include up to 12 specific groups. An Asset Management Plan is produced which aims to ensure that any future issues with the assets could be address in a proactive way.

Carriageway Condition

The majority of the carriageway across this route is in a good and safe condition but there are some sections rated as poor. Over the past five years there has been a systematic planned programme of capital maintenance carried out on the A34.

Footway Condition

The footway across the Birmingham to Stafford route is in a generally fair and safe condition. There is no systematic planned programme of capital maintenance carried out on the A34. Any defective footway repairs are identified and carried out on a reactive basis.

Structures

In Walsall, there are 2 highway structures identified consisting of 1 footbridge and 1 subway on the Birmingham to Stafford route, which are systematically inspected and maintained. The overall condition of these structures is fair.

Refer to the Technical Annex for further details on asset condition.



Development proposals directly affecting this route

Housing

- Birmingham City University/Wellhead Lane 250 dwellings (2020-25)

Employment

- No significant proposals

Development proposals indirectly affecting this route

Housing

- No significant proposals

Employment

- Food Hub 6000 jobs (2017-25)
- Aston Regional Investment Site 4000 jobs (2017-25)

Committed Transport Improvements

(as outlined in Movement for Growth - 2026 Delivery Plan for Transport)

- SPRINT: Walsall to Birmingham (A34)
- Walsall to Rugeley Rail electrification

GLOSSARY

- AADF** – Annual average daily flow
- AQMA** – Air Quality Management Areas
- DfT** – Department for Transport
- EDR** – Emergency Diversion Route
- HGV** – Heavy Goods Vehicles
- HLE** – Healthy life expectancy
- HS2** – High Speed Rail Two
- JTMS** – Journey Time Measurement Systems
- KRN** – Key Route Network
- KSI** – Killed or seriously injured
- LE** – Life expectancy
- LEP** – Local Enterprise Partnership
- LSOA** – Lower Layer Super Output Areas
- MDST** – MDS Transmodal
- MSOA** – Middle Layer Super Output Areas
- PIA** – Personal injury accidents
- SRN** – Strategic Road Network
- STDEP** – Sustainable Transport Delivery Excellence Programme
- TfWM** – Transport for the West Midlands
- TCG** – Tactical Co-ordination Group
- UKTI** – UK Trade and Investment
- UTMC** – Urban Traffic Management Control
- VMS** – Variable Message Sign
- WM** – West Midlands
- WMCA** – West Midlands Combined Authority

AADF Data:

AADF counts for A roads on each route:
<https://bit.ly/2fbapuc>

Route Safety:

Reported casualty and accident rates by urban and rural roads, road class, road user type, severity and pedestrian involvement, Great Britain, 2015.

Committed Schemes:

West Midlands Combined Authority. Movement for Growth: The West Midlands Strategic Transport plan.

West Midlands Strategic Cycle

Network:

West Midlands Combined Authority Board Report, 20 January 2017, item 4.3 - Strategic Cycle Network
<https://bit.ly/2hrrCAi>

Freight Information:

MDS Transmodal Data. Provided in Confidence for Midlands Connect Freight Study.

Enterprise Zones:

<https://bit.ly/2uZLDTe>
<https://bit.ly/2u7DCN1>

Road Haulage Companies:

UK Trade & Investment Road Haulage Industry, Midlands Hauliers. Provided in Confidence for Midlands Connect Freight Study.

National Cycle Routes, Sustrans:

<https://bit.ly/18FFBsT>

HS2 Connectivity Package:

HS2 Growth Strategy, Connectivity Programme. GBSLEP. <https://bit.ly/2woBqxp>

Average Speeds and Congestion Data:

West Midlands Strategic Highways Phase 2: Key Route Network Definition and Outline Performance. Produced by Mott Macdonald for West Midlands Integrated Transport Authority. March 2016.

Route Safety:

Department for Transport. Reported Road Casualties Great Britain, annual report: 2015.
<https://bit.ly/2hrclDb>

Air Quality Management Areas:

Department for Environment, Food and Rural Affairs, March 2017 AQMA Dataset.
<https://bit.ly/2fEduLf>

Male and Female Healthy Life

Expectancy:

Office for National Statistics. Life Expectancy (LE) and Healthy Life Expectancy (HLE) at birth for males by Middle Layer Super Output Areas (MSOAs) in England, 2009 to 2013. Published 2015. <https://bit.ly/2vwtxd1>

Childhood obesity:

Public Health England. National Child Measurement Programme data from 2012/13 to 2014/15, aggregated by MSOA. Published 2016
<https://bit.ly/2p3ocVV>

Younger population:

ONS: 2011 Census aggregate data. Population aged 0-17, as a percentage of total population by LSOA.

Older population:

ONS: 2011 Census aggregate data. Population aged 65+, as a percentage of total population by LSOA.

Living with a disability:

ONS: 2011 Census aggregate data. Households with at least one person living with a disability, as a percentage of all households by LSOA.

Unemployment:

ONS: 2011 Census aggregate data. No adults in employment in household, as a percentage of all households by LSOA.

West Midlands Cycling Charter:

<https://bit.ly/2xbg4oK>