

**Greater Manchester Transport Committee**

Date: 08 November 2019

Subject: Highways Annual Performance Report

Report of: Peter Boulton, Head of Highways, TfGM

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**PURPOSE OF REPORT**

Provide an overview of Greater Manchester's Highways' network performance.

**RECOMMENDATIONS:**

Members are asked to note the performance of Greater Manchester's Highways' Network.

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Risk Management – n/a

Legal Considerations – n/a

Financial Consequences – Revenue – n/a

Financial Consequences – Capital – n/a

Number of attachments included in the report: One

- Appendix 1: Monthly Journey Time Reliability for GM Zones

**BACKGROUND PAPERS:**

<b>TRACKING/PROCESS</b>		
Does this report relate to a major strategic decision, as set out in the GMCA Constitution		No
<b>EXEMPTION FROM CALL IN</b>		
Are there any aspects in this report which means it should be considered to be exempt from call in by the relevant Scrutiny Committee on the grounds of urgency?		N/A
GMTC	Overview & Scrutiny Committee	
N/A	N/A	

# **1 TfGM's HIGHWAYS ROLE & CONTROL CENTRE**

## **1.1 TfGM Highways**

1.1.1 With an estimated 2.5 billion trips made on the Greater Manchester (GM) road network (with an origin and/or destination inside GM) each year, Greater Manchester's road network is an essential part of GM's transport infrastructure.

1.1.2 Travel by road (by all modes) in GM comprises approximately 90% of all journeys; the highway network is a critical transport asset on which public transport, freight, business, visitors and commuters rely. A well-managed and maintained highway network is a vital part of creating a prosperous and forward looking regional economy. How the highway network and the traffic on it is managed is also critical to the safety and environmental well-being in GM.

1.1.3 The Local Highway Authorities are responsible for maintaining the safety and usability of roads. These responsibilities are set out in the Highways Act 1980

1.1.4 Transport for Greater Manchester (TfGM) fulfils its highways function, and its obligations delegated by the Greater Manchester Combined Authority (GMCA), primarily by working in collaboration with the 10 GM Local Highway Authorities and Highways England (as the Traffic Authority for the Strategic Road Network), GM Police and road users to achieve a reliable, resilient and safe highway network.

1.1.5 Specific Highway functions undertaken by TfGM are defined by delegations from the GMCA for areas of activity where a regional approach is required. These responsibilities are principally around GM-wide management of the major roads (the Key Route Network<sup>1</sup>), road safety, network management, traffic signals, urban traffic control (UTC) and intelligent transport systems, traffic forecasting and transport modelling.

1.1.6 The delegations are set out within 4 Protocols between the GM Combined Authority, TfGM and The Association of Greater Manchester Authorities (AGMA) Local Highway / Traffic Authorities.

- Protocol 1: Traffic Signals;
- Protocol 2: Transport Studies / Forecasting;
- Protocol 3: Network Management and Development; and
- Protocol 4: Road Safety.

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<sup>1</sup> TfGM have strategic oversight and management of the Key Route Network which makes up nearly 400 miles of Greater Manchester's busiest roads. Whilst this is just 7% of the total length of the highways network, it carries some two-thirds of peak-time traffic.

- 1.1.7 In addition to the Highway Protocols; and under Road Safety, TfGM is also responsible for direct delivery of driver re-training through referrals from GM Police. This is covered under the Memorandum of Understanding (MoU) between TfGM and the former Police and Crime Commissioner (PCC). A separate report is on the Agenda for this meeting covering Road Safety.

## **1.2 TfGM Control Centre**

- 1.2.1 TfGM Control Centre moved to a 24/7 operation on the 1st April 2018. The Control Centre is responsible for monitoring and reporting the transport network performance and ensuring that TfGM responds to incidents in timely and suitable fashion. The Control Centre monitors planned activity on the network, ensuring that any deviation from the plan is reported and escalated as appropriate. Working closely with internal and external stakeholders, the Control Centre aims to enhance GM commuters experience by providing upto date service disruption information, allowing commuters to make better informed decisions on their commute. A twice daily peak report is produced to inform stakeholders of the network performance during the AM and PM peak. The role TfGM's Control Centre performs is as follows:

### **Highway Monitoring**

- 1.2.2 The Control Centre uses passive highway sensors and Google data to monitor the highway network. In addition to data, the Control Centre has access to 76 TfGM highway CCTV cameras and 32 Rapid Deployable CCTV cameras. They also have access to Bury, Manchester, Stockport and Wigan highway CCTV. The Control Centre liaises with Highways England, accessing CCTV and having regular contact, particularly if there is an incident on the SRN.
- 1.2.3 The Control Centre also monitor the operation of the guided section of the Leigh Guided Busway via CCTV and act as first response to calls via the Emergency Call Points.
- 1.2.4 The Control Centre also has good links with bus operators with Stagecoach staff co-located in the Control Centre, helping to provide a broader understanding of the wider network, particularly in areas with limited CCTV and providing support when bus services are having operational difficulties. Urban Traffic Control (UTC) engineers are also present in the Control Centre, carrying out signal interventions when the highway network impacted.

### **Metrolink Monitoring**

- 1.2.5 The Control Centre is the first point of contact for the Metrolink operator, KAM. If there is an incident on the Metrolink network, KAM informs the Control Centre as soon as possible. In addition to the incident support, the Control Centre has a daily call with KAM to better understand if there are any events and or issues for the day that could impact service provision. Control have access to Metrolink infrastructure CCTV and the Metrolink systems which provides real time tram location information.

## Rail Monitoring

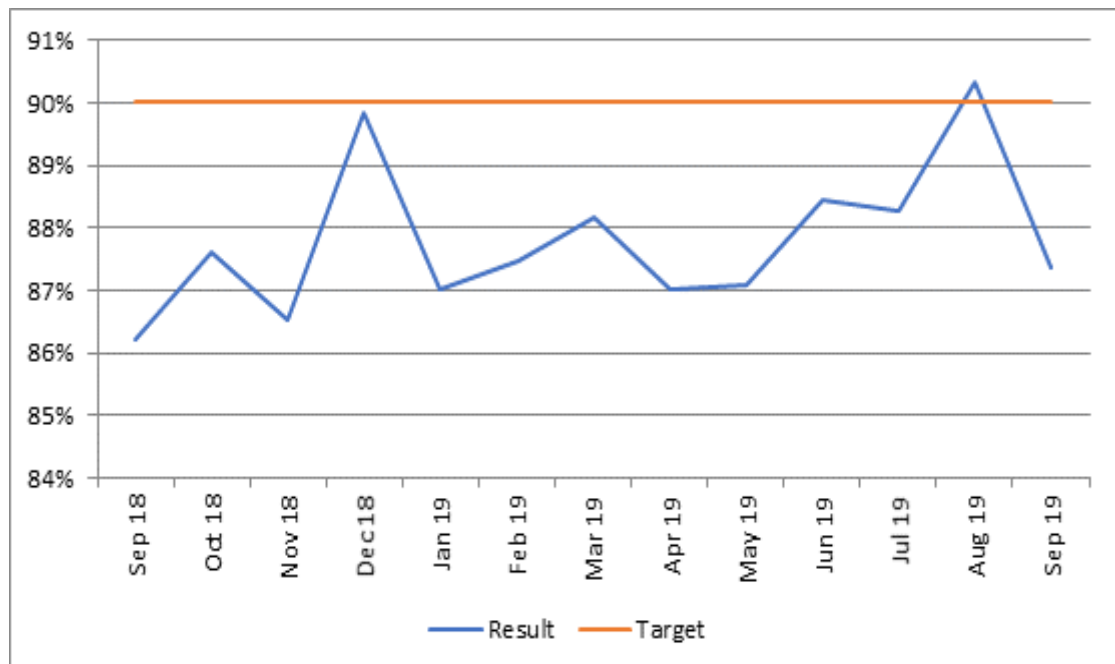
- 1.2.6 The Control Centre has access to software which provides real time train location and time adherence information. The Control Centre also receive disruption emails from Network Rail, providing details of rail incidents and their likely impact.

## 2 HIGHWAYS NETWORK PERFORMANCE

### 2.1 Key Route Network (KRN)

- 2.1.1 Highways key performance indicator of journey time reliability was developed in response to the 2040 strategy which outlines TfGM's commitment to working with Local Highway Authorities (LHA) in delivering reliable journeys on a resilient highway network. The metric measures the percentage of journeys completed within an acceptable journey time threshold (defined as the typical journey time plus a tolerance of 25%). The target benchmark is 90%

**Fig 1: Journey time reliability on the KRN**



- 2.1.2 The results show that there is an improvement in journey time reliability between September 2018 and September 2019. This improvement is in part due to the reduction in traffic management associated with the Water Street/ Regent Road, Manchester Salford Inner Relief Route (MSIRR) project with the greatest improvement recorded on the zones adjacent to the works. It is estimated that the traffic management for these MSIRR works reduced the capacity of the Regional Centre zone by approximately 12%. Reliability was lower than expected

during the months of April and May 2019 despite the spring half term holidays. The reduction during this period was caused by a combination of roadworks, adverse weather and events during PM peak periods, impacting the resilience of the highway network.

- 2.1.3 Whilst the MSIRR works are yet to be completed the scheme is already delivering benefits with improvements in journey times on Regent Road, Trinity Way and the Mancunian Way since the reduction in traffic management. Journey times westbound on the Mancunian Way have reduced 51% during the PM peak (period Monday 16<sup>th</sup> September 2019 to Friday 11<sup>th</sup> October 2019 compared to Monday 18<sup>th</sup> September 2017 to Friday 13<sup>th</sup> October 2017) - from an average of 16 minutes 22 seconds to 8 minutes and 2 seconds. Traffic volumes westbound on the Mancunian Way have also increased approximately 9% during these periods from an average of 1086 vehicles an hour to 1187 vehicles an hour.
- 2.1.4 Monthly Journey Time Reliability for the whole of GM is included in Appendix 1 to this report.

## **2.2 Strategic Road Network (SRN)**

- 2.2.1 The Strategic Road Network (or SRN) is made up of motorways and trunk roads (i.e. the most significant 'A' roads). The SRN is administered by Highways England.
- 2.2.2 The table below provides the latest performance data for the SRN in Greater Manchester as provided by Highways England. Data from previous years has also been presented to allow for comparisons to be made beyond the annual profile. There has been a general trend demonstrating improvements in acceptable journeys since January 2016. The latest performance figures include data up to 31 August 2019.
- 2.2.3 The latest data for August 2019 identifies an average delay of 12.1 seconds per mile, which is an improvement when compared to the previous month and reflects the performance associated with previous reporting periods. The Average Speed for August is 57mph which is the fourth highest output over the previous 3.5 year period. The Acceptable Journeys are 77.6% (August) which shows no significant deviation from the trend which is a generally on an upward trajectory when compared to outputs from previous years.

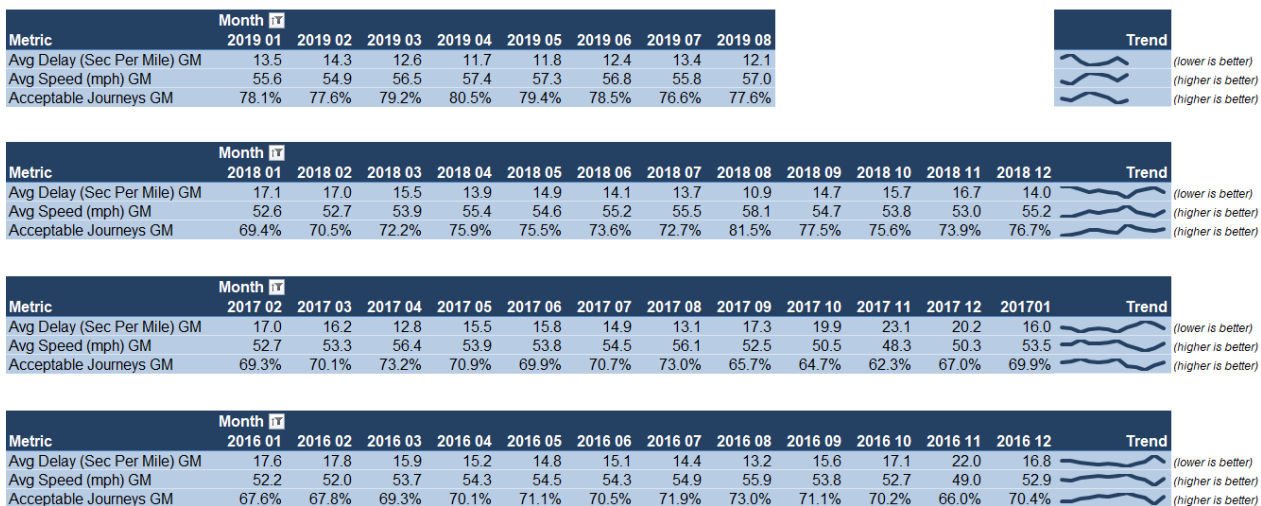
**Fig 2: SRN Performance Data 2016 - 2019**

**Delay Data for Greater Manchester Mainline Links (SRN)**

Calculated as per Performance Specification Metrics

(Refer to summary definition of metrics tab and technical summary tab for details)

Produced by the NWRU, Highways England

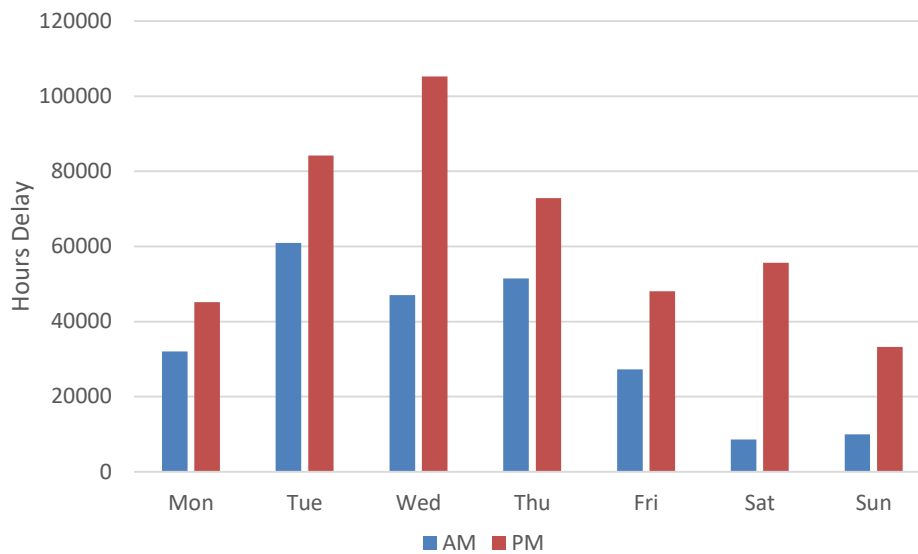


2.2.4 TfGM has identified the smart motorways works on the M56 Junction 6 to 8 which are due to start in Spring 2020 as a major challenge facing network performance on both the SRN and KRN and we will be working with Highways England and other key stakeholders to manage the impact of the scheme.

**2.3 Causes of delay**

2.3.1 The chart below shows the causes of delay on the 14 corridors reported by TfGM's Control Centre (representing approximately 40% of the KRN) between 1st March 2019 and 30th September 2019. Delays are for weekdays during the AM peak 06:00 to 10:00, PM Peak 16:00 to 20:00 and weekends 09:00 to 19:00.

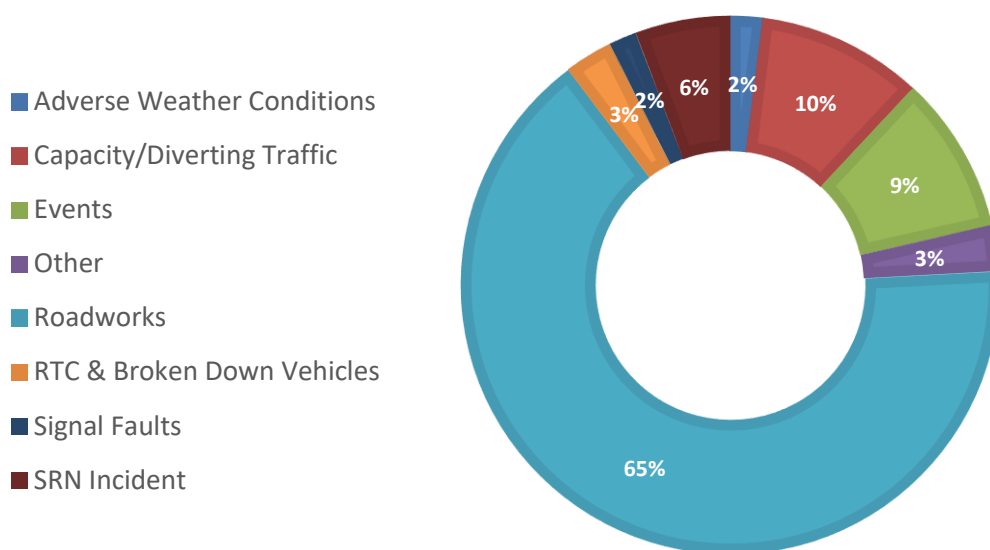
**Fig 3: Hours of delay by weekday and period.**



2.3.2 Wednesday’s PM can be identified as the period with the highest level of delay. This peak is predominantly related to delays caused by events, specifically match day events at The Etihad and Old Trafford.

2.3.3 Roadworks were the major cause of delay accounting for 65% of delay between March and September. TfGM are working with LHA’s to improve the way roadworks are managed across GM including improvements to Greater Manchester’s Roadworks Permitting Scheme (GMRAPS) and the development of the corridor management function.

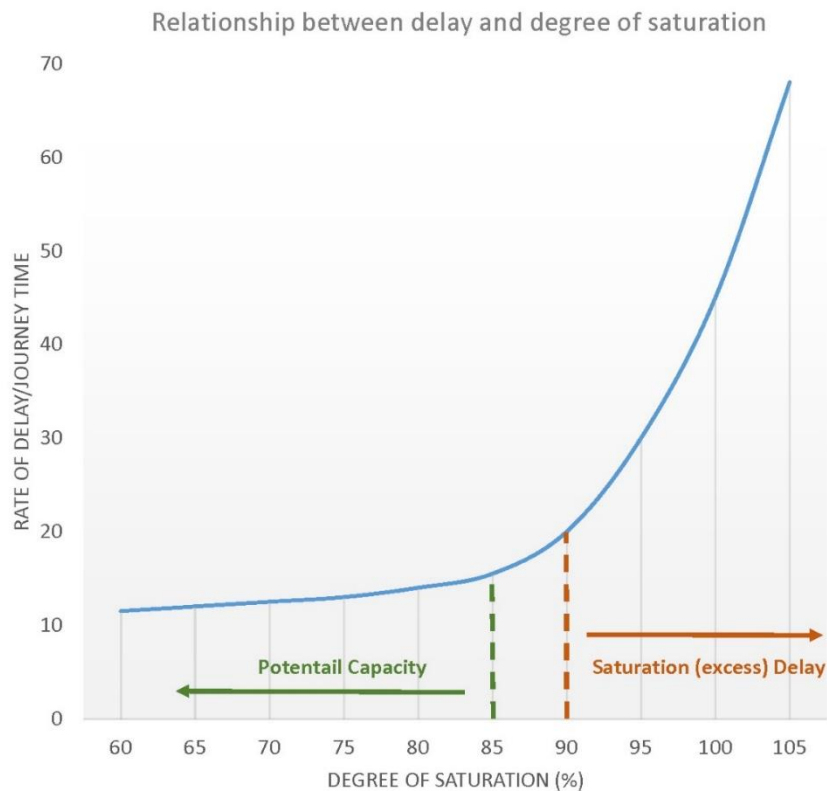
**Fig 4: Causes of delay**





- 2.3.4 The amount of traffic travelling along a corridor can increase with little impact on journey times until a critical point where the volume of traffic is close to the capacity of the road.
- 2.3.5 Beyond this tipping point a small increase in the number of vehicles or slight reduction in the availability or road space leads to a large increase in congestion.

**Fig 5: Relationship between delay and degree of saturation.**



- 2.3.6 Analysis of journey time data suggests that almost a third of the classified road network in GM (Motorways, A Roads and B Roads) are operating beyond this tipping point at some time during the day.
- 2.3.7 However this also means a small reduction in traffic leads to a large decrease in congestion. During the School Holiday period there is a reduction in AM peak traffic of 8-10%. This results in a reduction in journey time on some corridors of up to 60%. Many of TfGMs activities such as the delivery of Travel Demand Management initiatives are focused on achieving some of the benefits of reducing traffic levels to within these tipping points.

### **3 HIGHWAYS DEVELOPMENT**

#### **3.1 Major schemes**

3.1.1 A number of major highway improvement projects have been completed (or will be completed shortly) within Greater Manchester over the last twelve months. Projects completed are:

- Water Street/ Regent Road, Manchester Salford Inner Relief Route (MSIRR). These works provide an improvement in highway capacity at a major junction between the radial route from M602 and the regional centre ring road. They also provide improved pedestrian crossing facilities. Works have been designed and delivered by Manchester and Salford City Councils.
- Stockport Town Centre Access Package (TCAP). The TCAP works have provided significant improvements to routes around Stockport town centre including the construction of the Travis Brow link road. All works have been developed and supervised by Stockport MBC.
- A6MARR. The A6 to Manchester Airport Relief Road has provided a dual carriageway relief route from the A6 south of Hazel Grove to Manchester Airport. This project was led by Stockport MBC in partnership with Cheshire East and Manchester City Council. This new road opened in October 2018. 3.2.1 The A6MARR has delivered benefits to those who use the A6 by delivering a reduction in the amount of traffic using the route north of the A555/A6 junction. Northbound traffic volumes have reduced during the AM peak (10%), PM Peak (6%) and Inter Peak periods (7%).
- Salford Bolton Network Improvements (SBNI). This project has undertaken works to improve highway capacity provide walking and cycle improvements and improve bus reliability on roads between Bolton, Salford and the Regional Centre including the A6 and A666. Works have been designed and supervised By Bolton MBC and Salford City Council.

#### **3.2 Major Schemes in Development**

3.2.1 A number of highway schemes are also currently being developed by local authorities. Funding for these are being provided from the Government's Growth Deal.

- M62 Junction 19 South Heywood Link Road, Rochdale. To facilitate development in the area. The project is currently being tendered. Completion is programmed for Spring 2022.
- Carrington Relief Road, Trafford. To facilitate development in the area and provide traffic bypass. Works designs are being finalised. Completion is programmed for Summer 2022.

- Great Ancoats Street, Manchester. Environmental improvements and improvement of pedestrian and cycle crossing facilities of the Inner Relief Route. Completion programmed for Winter 2021.
- M58, Wigan. To facilitate development in the area and provide traffic bypass. Scheme design is progressing. Completion date yet to be confirmed.
- A49, Wigan. To facilitate development in the area and provide traffic bypass. Construction is in progress. Completion is programmed for Spring 2020.
- Trafford Road Improvements, Salford. To improve traffic flows and improve walking and cycling provision. Joint funding with the Mayor's Challenge Fund. Scheme design is progressing. Completion is anticipated Winter 2022.

3.2.2 In addition to these major projects, local authorities are developing and implementing a number of minor improvements projects utilising Growth Deal Minors funding to facilitate local improvements.

3.2.3 As required under the approved governance arrangements a formal Growth Deal projects update is provided to Greater Manchester Combined Authority on a six monthly basis. The latest update being November 2019.

### **3.3 Streets for All**

3.3.1 Streets for All is a new way of thinking about the role of streets in creating sustainable, healthy and resilient places. It focuses on balancing the movement of people and goods alongside the creation of more people friendly and less polluted streets and places, reflecting the recommendations set out in the Cycling and Walking Commissioner's report, Made to Move. The ten GM Local Authorities and TfGM have been developing thinking around the concept of Streets for All.

3.3.2 Over the past 12 months there has been a programme of Streets for All corridor studies, focused on key parts of our Key Route Network. These studies have identified a range of interventions which will be developed to produce a pipeline of "shovel ready" schemes. The interventions have been developed based on the principles set out in the 2040 Strategy and will take into account a wide range of emerging priorities including the Congestion Deal, Clean Air Plan, Made to Move, and the Local Cycling and Walking Infrastructure Plan (LCWIP).

3.3.3 The pipeline development will be based around new approaches to highways design and management and will initially focus on the KRN corridor. Whilst it is anticipated that the focus will be on improvements to the KRN, parallel routes will also be considered to identify opportunities to prioritise different users on different roads/streets within a corridor, e.g. identifying less busy cycleways on roads adjacent to major arterial routes.

### **3.4 Spatial Framework**

- 3.4.1 The Greater Manchester Spatial Framework (GMSF) seeks to influence the scale and distribution of housing and employment throughout the region. To support the scale of growth envisaged by the GMSF, TfGM and the Greater Manchester local authorities have examined the implications of the planned growth on the wider transport network to set out the critical transport challenges facing the transport system to accommodate planned growth. As with the Streets for All concept, a number of interventions will be investigated, developed and tested to support the planned growth and address the expected transport issues. The resultant transport and highway interventions will be included in the 2040 Delivery Plan.
- 3.4.2 In addition, there will also be the need for a range of more local interventions which will further enable access to GMSF locations. This pipeline local interventions will be developed by the TfGM Highways team in collaboration with the GM local authorities and developers.

### **3.5 Mayor's Challenge Fund**

- 3.5.1 Utilising Transforming Cities Funding, the GM Mayor's Challenge Fund has invited bids to provide improved walking and cycling facilities which will form part of the Greater Manchester Bee Network. A total of £160 million of funding has been allocated to these works, the delivery of which is administered on behalf of GMCA by the Mayor's Walking and Cycling Board.
- 3.5.2 Local authorities have been invited to propose walking and cycling improvements which will form part of the Greater Manchester Bee Network through a formal bidding process. Bids have been assessed in accordance with an agreed assessment process. To date 57 schemes have been approved for Programme Entry which ensures local authorities detailed development costs can be funded from the Mayor's Challenge Fund.
- 3.5.3 November's GMCA meeting will be recommended to approve the sixth tranche of bids for programme entry. Tranche Six approval will mean that 87 walking and cycling improvements have been approved for Programme Entry. The estimated total value of schemes approved now totals over £600 million. A further prioritisation exercise will therefore be undertaken to determine which projects are constructed using the current allocation. GMCA, TfGM and Local Authority partners will continue to seek additional funding to enable further projects to be delivered.
- 3.5.4 The aim of these projects is to make 'active' travel (walking and cycling) the preferred mode for all 'short' journeys.
- 3.5.5 Significant challenges with delivery of 'Bee Network' projects remain due to impacts on vehicular modes including bus, due to the reallocation of road space that is required to accommodate, primarily, new cycling facilities.

- 3.5.6 To endeavour to ensure the 'Bee Network' can be delivered with minimal impact on vehicular traffic, including bus, TfGM's Highways team has been working with Local Authority colleagues and has developed an innovative 'cyclops' junction layout. This layout ensures that safe walking and cycling facilities are provided whilst minimising the impacts on the vehicular capacity of the junction. The first of these junctions will shortly be delivered as part of schemes in Manchester and Bolton.

**Fig 6: 'Cyclops' junction at Royce Road / Chorlton Road, Hulme, Manchester.**

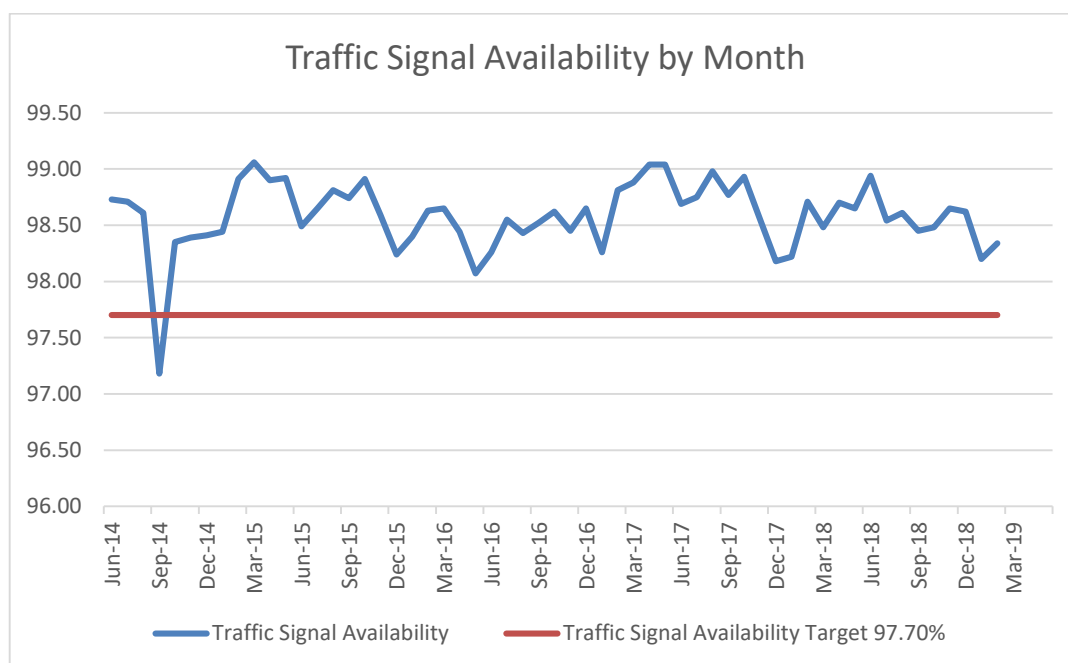


## **4 HIGHWAYS OPERATIONS**

### **4.1 Traffic Signals**

- 4.1.1 TfGM on behalf of the GMCA install, maintain, manage and operate all traffic signals within Greater Manchester.
- 4.1.2 Installation and maintenance of the traffic signals is undertaken on behalf of TfGM by Siemens, who are currently in Year 9 of a 15-year contract. A recently completed Year 8 review concluded that the contract continues to offer a 'best value' service and that it remains fit for purpose.
- 4.1.3 The contract operates on the basis of Siemens proactively maintain all traffic signals to ensure they remain 'available' for operation. Siemens are contractually required to maintain a traffic signal availability of 97.7%. Contract performance is continuously monitored, and availability is consistently more than this contractual availability level.

**Fig 7: Traffic Signal Availability**



4.1.4 The number of traffic signals in Greater Manchester continues to increase due to ongoing development and the requirements of various projects including those to establish and create the Bee Network. The increase in traffic signals means that the maintenance costs are continually increasing. These additional costs must be funded as part of TfGM’s overall levy funding. Efforts continue to ensure TfGM maintain the traffic signals as efficiently and effectively as possible to ensure demand on levy funding is minimised. Opportunities to reduce costs in terms of all aspects of traffic signal operation and maintenance are therefore taken whenever possible and feasible.

4.1.5 When improvement works are promoted and undertaken by a district council or TfGM, the increasing costs of maintaining the infrastructure is funded as part of the GMCA levy which is provided to TfGM. Significant increases in the maintenance and operation costs are considered and form part of the overarching levy discussions.

4.1.6 When a third party (such as a developer) installs or improves a traffic signal installation, they are required to pay a commuted sum to fund the operation and maintenance costs. TfGM, on behalf of GMCA, has undertaken extensive research to determine the level of commuted sum payable. Commuted sums in GM are based on guidance provided by the County Surveyors Society.

## 4.2 Adaptive Traffic Signal Control

4.2.1 In order to ensure the maximum highway capacity is achieved, TfGM on behalf of GMCA requires new traffic signal installations to include adaptive traffic signal control. Adaptive traffic control is a traffic management strategy in which traffic signal timing changes, or adapts, based on actual traffic demand. If the junction is part of a network of junctions this is provided by a SCOOT (Split Cycle

Offset Optimisation Technique) system. If the junction operates independently and without interaction with adjacent junctions, a system known as MOVA (Microprocessor Optimised Vehicle Actuation) is used.

4.2.2 Utilising Growth Deal funding, TfGM Highways, in conjunction with district colleagues, are currently undertaking a project to install adaptive traffic signal control at 97 existing junctions at various locations throughout Greater Manchester. Adaptive Traffic Signal Controlled junctions have the ability to improve junction capacity by up to 15% ensuring efficient movement of all traffic at junctions.

4.2.3 To date, improvement works have been undertaken at 46 locations, with the remainder programmed to be completed by March 2020. Additional funding continues to be sought that would enable all traffic signals in Greater Manchester to operate under adaptive control ensuring the maximum capacity of junctions is achieved and delays and congestion are minimised assisting efforts to improve air quality.

### **4.3 Bus Priority on the A6 between Hazel Grove and Manchester City Centre**

4.3.1 TfGM Highways works extensively with Local Authority colleagues to improve traffic flows for all transport modes. We have recently introduced additional bus priority on the A6 (Manchester to Stockport) through the use of SCOOT improvements specifically related to bus. Using information on bus location (supplied via its onboard ticket machine), TfGM are able to adjust traffic signal timings to improve bus reliability, thereby hopefully making it a more attractive travel choice. TfGM Highways will continue to work with Local Authority colleagues to identify further locations this technology could be rolled out if additional funding is identified.

### **4.4 Review and retime signalling; 'green' time for pedestrians**

4.4.1 As part of its commitment to consider all 'traffic' modes which use the highway network, TfGM continuously monitors and evaluates network performance. As part of its commitment to encourage 'active' travel and especially walking, TfGM is currently evaluating traffic signal timings with reference to time allocated to the 'green pedestrian aspect' for pedestrians to cross the highway. Work is currently being undertaken to ensure sufficient 'green' time is provided for all pedestrians crossing roads.

4.4.2 TfGM Highways, as part of the GM Mayor's Congestion Deal, is also undertaking a comprehensive review of traffic signal timings to ensure levels of delay and congestion are minimised as far as possible. Over the past 12 months, over 200 sets of traffic signals have been assessed and the timings of them adjusted, when required, to ensure they operate as efficiently and effectively as possible.

## 4.5 KRN Asset Management

4.5.1 KRN Asset Management is about the whole life management of assets, and will assist Local Highway Authorities (LHA's) to realise value from the KRN highway assets. The Government recognises that the following benefits can be achieved by deploying asset management techniques consistently across GM, they are;

- Long term reductions in reactive maintenance costs;
- Better decision making around planned works;
- Improved management of risks and network resilience;
- Reductions in third party accidents and associated claims;
- Better customer satisfaction and stakeholder awareness and involvement;
- Improved journey times and reduced delays;
- Better knowledge of asset performance/condition and the cost to maintain them;
- A clearer understanding of future demands and a better managed resilient network;
- Improved financial performance;
- Closer compliance/alignment with Codes of Practice;
- Enhanced reputation;
- Sharing of physical resources to spread the workload;
- Closer engagement with all stakeholders including LHA's elected members, contractors, transport providers and road users; and
- Smarter ways of working

4.5.2 A KRN Asset Management Strategy (AMS) was developed and agreed with the Greater Manchester (GM) LHA's in September 2017 incorporating a Performance Management Framework (PMF) for the four key KRN assets, which are;

- Carriageways;
- Footways;
- Bridges and Structures; and
- Street Lighting.

LHA's have built up consistent KRN condition data sets for both carriageways and structures with key current condition trends outlined below.

### **KRN carriageway condition**

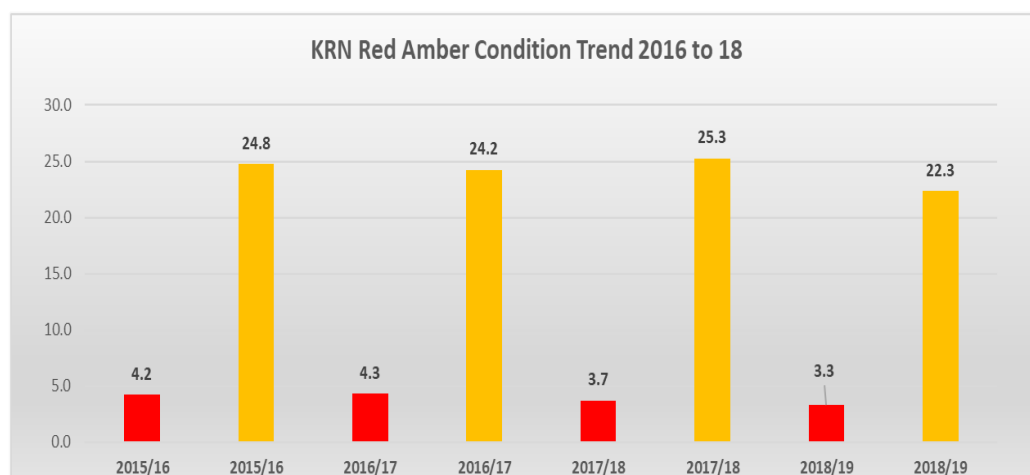
4.5.3 The KRN carriageway condition survey first carried out in March 2016 reported a red condition (requires planned maintenance soon) of 4.2% with an amber



condition (requires planned investigation) of 24.8%. Having embedded asset management principles through the KRN AMS in 2018, our PMF aspiration is for a KRN at 5% within the funding available across GM for all classifications of local roads.

- 4.5.4 The condition trend of the KRN carriageways to 2018 can be seen in figure 8 below.

**Fig 8: KRN Red Amber Condition Trend 2016-18.**



- 4.5.5 Figure 8 shows that the KRN carriageway has seen improved red condition of almost 1%, more importantly a stronger improvement in amber condition of 2.5% where the strategy has been to stop amber falling into red condition. This has been achieved by deploying preventative maintenance techniques and processes through timely intervention to slow deterioration and seal the road surface against water ingress.

### **KRN Structures investment and condition performance**

- 4.5.6 There are 929 structures on the KRN consisting of bridges, retaining walls, subways and culverts. Across GM, the total number of structures that LHA's are responsible for maintaining is 3,291. The KRN element of these assets is 24%.
- 4.5.7 TfGM in collaboration with the Local Authorities bridge engineers has developed a long-term programme of maintenance for structure's assets on the KRN. The programme developed in 2017/18 spans to 2022/23 and includes structural maintenance works and principal inspections to monitor condition trends which provides key data for forecasting deterioration trends.
- 4.5.8 In 2016, TfGM procured a bridge asset management system on behalf of the ten GM LHA's. The system went live in July 2016 and is now populated and fully operational.
- 4.5.9 KRN bridge condition is reported in the form Bridge Condition Indicator (BCI) and consist of two types of condition inspection, which are;

- General Inspection (GI) – every two years; and
- Principal inspection (PI)- at least every 6 years to a maximum of 12 years.

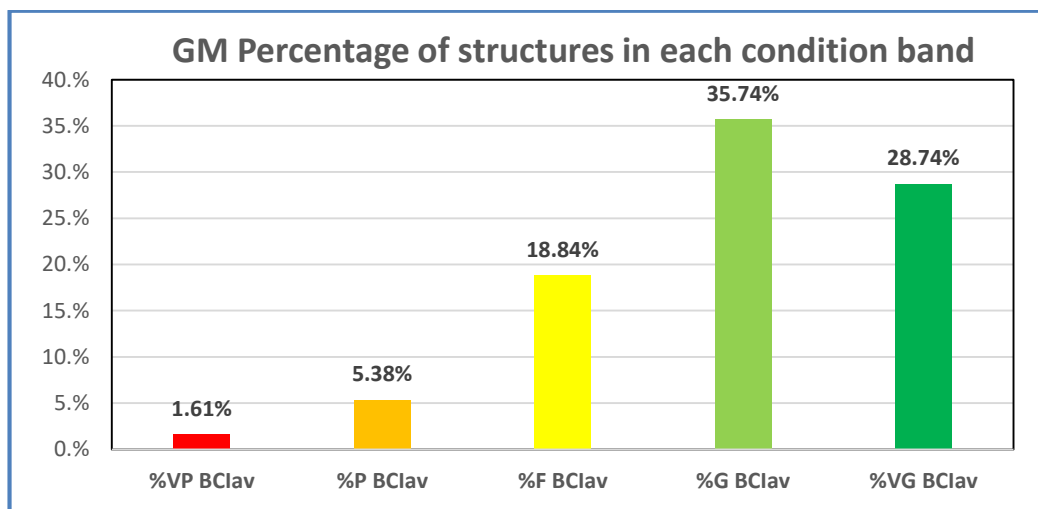
These are reported as BCI Average (BCIav) and BCI Critical (BCIcrit). For the purposes of this report, the focus is on BCIav.

4.5.10 The bridge asset management system records the condition of structures in 5 industry standard condition bands, which are;

- Very Good (VG)
- Good (G)
- Fair (F)
- Poor (P)
- Very Poor (VP)

The current overall condition of KRN structures across GM is good. Figure 10 below shows the percentage of structures in each condition band to date.

**Fig 9: % of structures in each condition band**



4.5.11 TfGM will continue to work closely with GM LHA’s to build on current good working relationships to secure ongoing KRN investment and developing asset management for long term resilience and sustainability of the KRN.

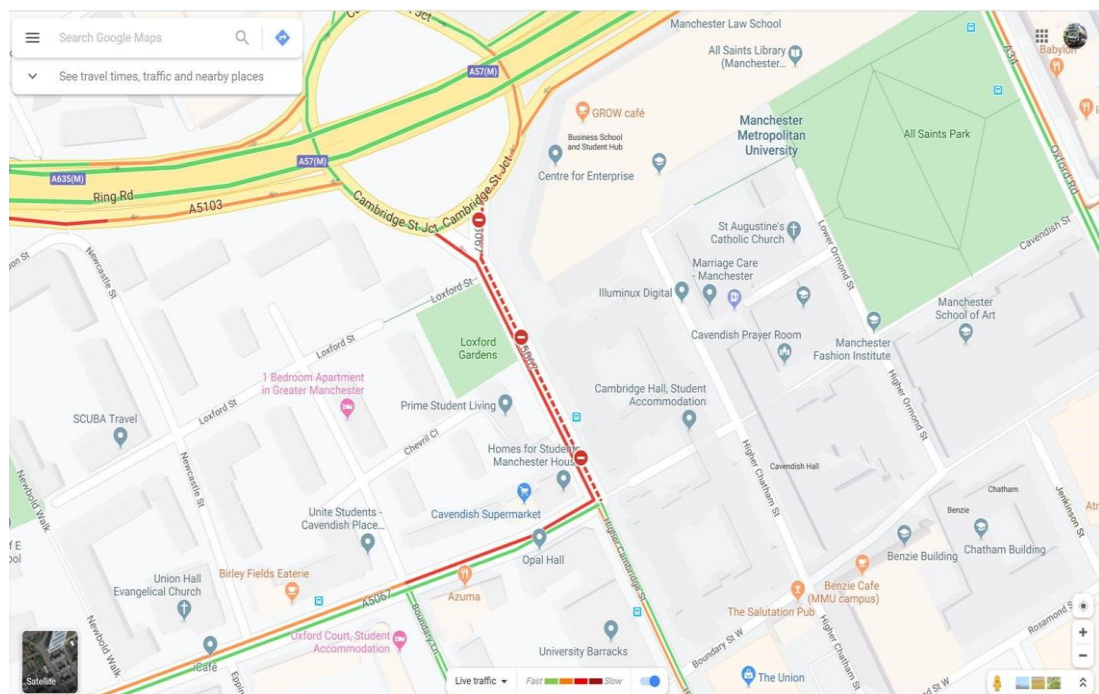
#### 4.6 Transport Network Incident Management

4.6.1 If there is an incident on the transport network, the Control Centre ensures that an escalation procedure is implemented. Depending on the gravity of the incident, this may be informing customers via social media of the incident, or deploying the TfGM Incident Management Team, who are responsible for ensuring TfGM’s response to major incidents is supportive of customer and stakeholder expectations.

## 4.7 Travel Demand Management

- 4.7.1 Where there is a planned or unplanned event the Control Centre use a number of tools to influence commuter behaviour, getting commuters to think about how they travel – whether they can remode, retime or reroute their journey to avoid the event.
- 4.7.2 The Control Centre also use Elgin’s one.network platform to plan, monitor, communicate and analyse traffic disruptions. This is a GIS system that allows planned and unplanned events to be plotted and uploaded to Satnavs and Google Maps.

**Fig 10: Road closures shown on Google Maps after being plotted on Elgin by the Control Centre**



- 4.7.3 The Control Centre utilise the 60 Greater Manchester Variable Message Signs (VMS). VMS are digital road signs used to inform road users about specific temporary events and real-time traffic conditions.
- 4.7.4 VMS provide drivers with mandatory and/or advisory information at the roadside. VMS can be used for many different purposes with the potential benefits of reducing car drivers’ stress, travel time and increasing traffic safety. VMS may ask drivers to change travel speed, change lanes, divert to a different route, direct to the available parking space, or simply to be aware of a change in current or future traffic conditions by providing information. The information is intended to assist drivers in selecting appropriate routes avoiding congestion and to reduce drivers’ anxiety.
- 4.7.5 The VMS are also being used by the Control Centre to engage commuters and provide information on up coming events that will potentially cause increased

traffic and to encourage commuters to remode, retime or reroute. This light hearted, topical and engaging method has received widespread media attention, with the added advantage of further spreading the messages we are giving to a wider audience than those who will pass on their daily journeys.

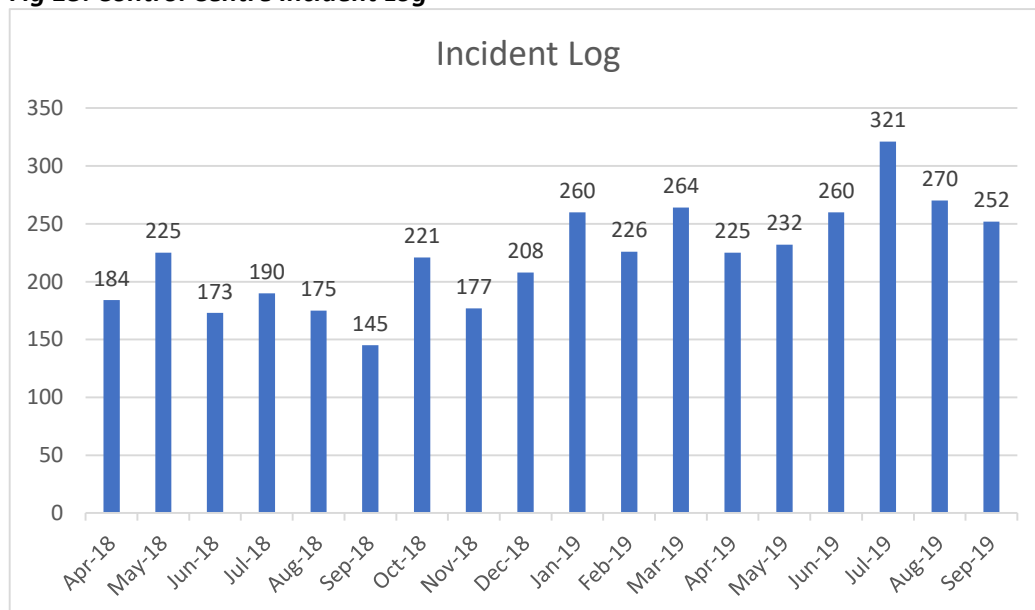
**Fig 12: GM Variable Message Signs – examples of advanced notification of events** (Left to Right: Spice Girls Concert, Etihad Stadium, May 2019; MCFC Victory Parade Manchester City Centre, May 2019)



#### 4.8 Transport Network Incidents

4.8.1 Since the Control Centre went to 24/7 operation, over 4,000 incidents have been logged and actioned. Incidents on the network are defined as something that impacts commuters travel pattern.

**Fig 13: Control Centre Incident Log**



4.8.2 Additionally, the Control Centre supports major events across GM, including most recently;

- Parklife
- Tour of Britain
- Pride
- Conservative Party Conference
- Great Manchester Marathon
- Football fixtures at the Etihad and Old Trafford

## **5 RECOMMENDATIONS**

5.1 Recommendations are set out at the front of the report

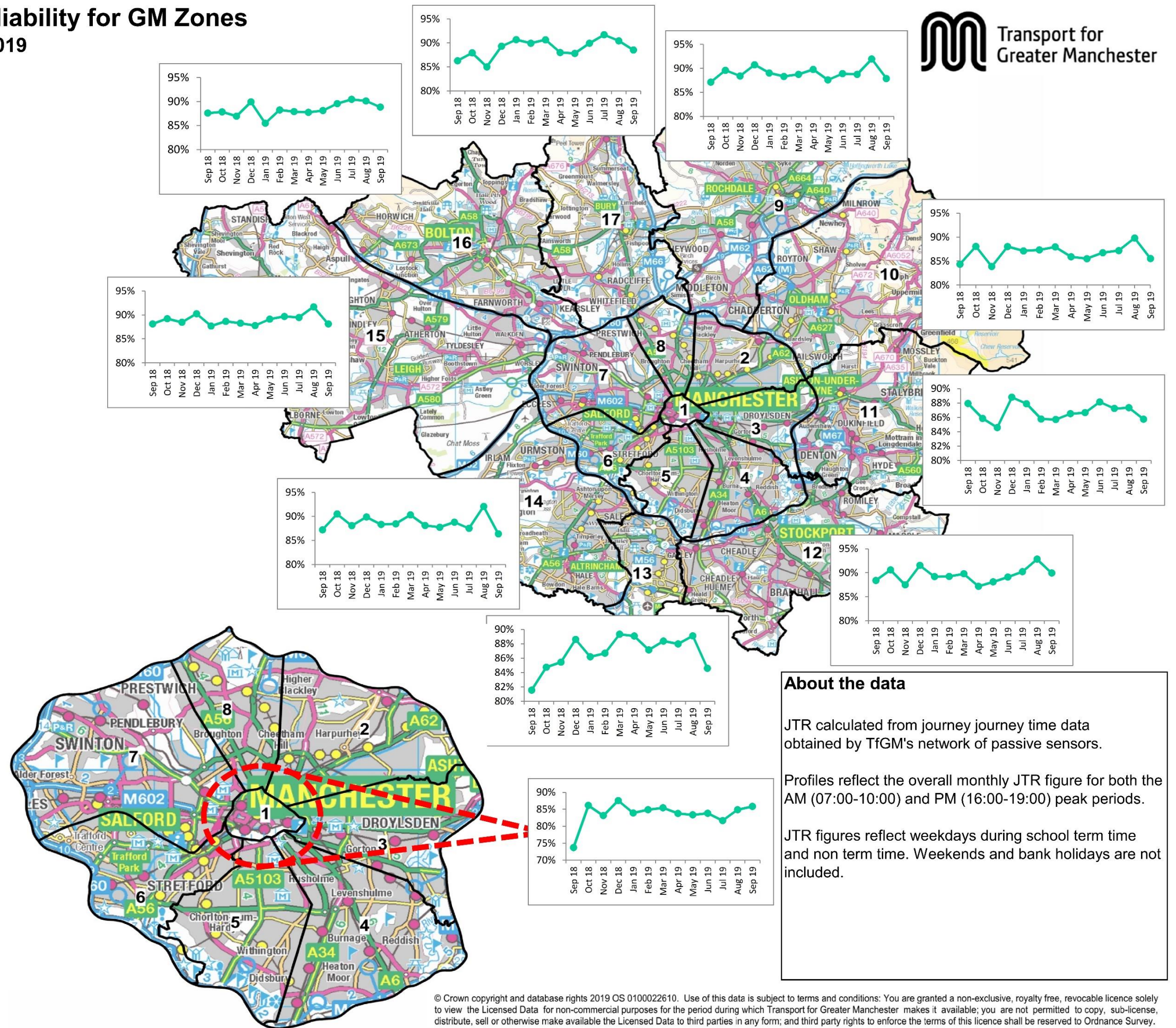
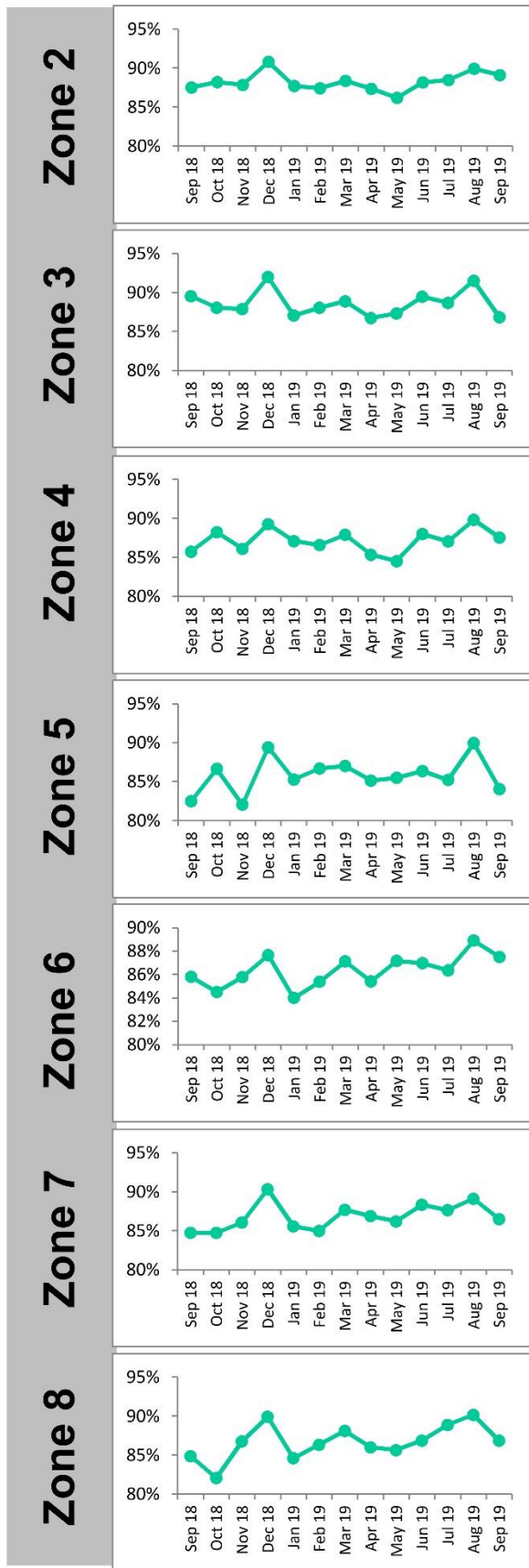
**Peter Boulton**

**Head of Highways**



# Monthly Journey Time Reliability for GM Zones

## September 2018 to September 2019



**About the data**

JTR calculated from journey time data obtained by TfGM's network of passive sensors.

Profiles reflect the overall monthly JTR figure for both the AM (07:00-10:00) and PM (16:00-19:00) peak periods.

JTR figures reflect weekdays during school term time and non term time. Weekends and bank holidays are not included.

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