



WEST MIDLANDS
COMBINED AUTHORITY

Board Meeting

Date	17 February 2017
Report title	Network Resilience – Preliminary Report
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Report has been considered by	STOG and WMCA Programme Board

The Combined Authority Board is recommended to approve:

1. The progression of a number of immediate priorities for managing network resilience during the next 5-10 years of major transport works across the WMCA area:
 - i. Form a formal and fully empowered multi-agency partnership with robust governance to work together to tackle the issues;
 - ii. Define and agree clear objectives for the partnership, to be based around ensuring the economic activity is able to continue to operate and grow, whilst existing transport system capacity issues are addressed and new growth sites are unlocked;
 - iii. Undertake a more detailed evidence analysis and develop firm mitigation strategies and schemes, including detailed feasibility and costs for these; and
 - iv. Secure funding for and undertake enabling and preparatory actions to consider the principles and benefits to partners in sharing data, and managing the network in an integrated and co-ordinated way. This includes exploring options around a West Midlands Regional Integrated Command Centre to bring together all stakeholders with all the relevant information to direct both the strategic and operational activity, for delivery by all partners.

2. The immediate implementation of a multi-agency Network Resilience Partnership and Governance Structure led by TfWM, the principles of which are set out in Section 6. This is to be refined and developed in collaboration with partners concurrently with establishing and mobilisation it.
3. The formation of a coordinated joint communications and public relations plan encompassing all WMCA partners, HS2 Limited, Highways England and Network Rail, to be agreed by the Heads of Communication of the WMCA and the Constituent Authorities.

The Combined Authority Board is recommended to note:

1. The discussion between Sandwell MBC and Highways England regarding the M5 Oldbury Viaduct major maintenance works and the concerns regarding the need for both physical mitigation works on the local highway network and a robust public communications plan. Sandwell MBC is seeking to agree proposals with Highways England, along with a commitment to implement a contingency relief plan in the event of excessive disruption.

1.0 Purpose

1.1 This report sets out the work undertaken to understand the scale of the challenge of managing and securing a resilient and robust transport network during a period of major infrastructure work across the West Midlands. The report also highlights a number of actions which are recommended in order to mitigate potential adverse impacts of any resulting poor network resilience (the ability of the system to cope with planned change and incidents).

2.0 Background

2.1 There has been growing awareness of the scale and timing of a series of major infrastructure works which particularly impact the Strategic Road Network (SRN) and Key Route Network (KRN) across the West Midlands. This includes:

- HS2 Phase 1: with significant rail, local road and motorway interfaces and diversion works;
- The delivery of the Government's Road Investment Strategy periods 1 & 2 (RIS1/2, running to 2021 and 2026 respectively) being delivered by Highways England;
- Network Rail's investment in a number of capacity upgrades on the network around Birmingham;
- WMCA's own investment in HS2 Connectivity, Metro and local transport;
- Investment in major maintenance and utilities works; and
- Major development in Birmingham city centre and other locations such as Cannock.

2.2 The infrastructure investment will bring many significant direct benefits and unlock further regeneration and growth opportunities. However, during the delivery period there is a risk that un-coordinated delivery undertaken by different agencies working in siloes could generate significant short-term adverse construction disruption impacts, as well as negatively impacting upon air quality. If poorly handled, as well as impacting the ability for labour market to move freely around the area, it has the potential to impact on manufacturing and logistics operations that underpin the regional economy (many of which use 'Just in Time' operating models).

2.3 This potential was recognised by TfWM and the HS2 Growth Strategy Board, who asked TfWM to undertake some scoping work. This work was commissioned and has been undertaken with the full cooperation and engagement of HS2 Ltd, Highways England, Network Rail and many of the Local Authorities.

2.4 Additionally the issue has been raised as part of the Devolution Deal 2 discussions with DfT and HMT and with the National Infrastructure Commission. This has been with a view to securing Central Government support for the strategic response, recognising that the scale and importance of the issue has impacts which are beyond the West Midlands. This is a function of a West Midlands network carrying a diverse and significant mixture of local, national and international people and goods movements.

3.0 Impact on the Delivery of the Strategic Transport Plan

3.1 Poor network resilience will adversely impact all tiers of the transport network identified in the Movement for Growth strategy, and in a worst case prevent many of the outcomes that are targeted being achieved. However, with the right investment in strategic mitigation measures during the construction period it is anticipated that longer term positive behavioural change can be achieved towards increased use of sustainable and active travel

modes. This 'stickiness to change' has been observed at a smaller scale in Birmingham following the extensive programme of activity around the city centre A38 tunnel works, where Birmingham City Council have reported travellers retaining some level of changed travel behaviour such as rail use or car sharing that they initially adopted during the works.

4.0 Wider WMCA Implications

4.1 The implications of managing network resilience are significantly broader than just the TfWM area which is at the centre of the main area of disruptive works. In liaison with Highways England two broad zones of impact have been identified, with a core zone containing the wider double motorway box (M5, M6, M42, M40, A46) and wider zone extending up the M42 to A5; over to the M1 and along the A46 down to the M5. The strategic routes (road and rail) in the wider zone will be impacted both directly and by diversionary movements. Development coming forward in these areas which is dependent on the strategic network will need to be cognisant of network resilience management strategies.

5.0 Progress, options, discussion, etc.

5.1 The full consultant's report has been produced using information provided under a Non-Disclosure Agreement and therefore is not provided in full. However, Appendix 1 highlights the main locations of the strategic works currently proposed in and around the main M6/M5/M40/M42 motorway box. Work by the consultant highlights that the peak period of challenge will be between mid-2018 and 2020, but with the likelihood of 10 or more years of significant works.

5.2 For expediency the consultant's work was focused on the main motorway box. However, it is recognised that the issues extend beyond this, with construction impacts and an area of search for management solutions needing to extend to the A46, M69 corridor, along the A38 and along the M42 into Staffordshire; as well as and impacting the A5 corridor. Re-routing strategies for long distance traffic during the construction will also be likely to require consideration of the M1 corridor. Further work will be required to capture a truly comprehensive picture of the scope of the challenge and field of operation.

5.3 The headline preliminary findings identify the probable loss of 1 or 2 lanes (approximately 12.5 to 25%) capacity from the SRN at multiple locations during the same period, with potential for 20 mins plus delays for each vehicle for extended periods across significant elements of the network. The loss of SRN capacity is likely to occur at the same time as the local KRN is subject to disruption due to Metro, Sprint and HS2 connectivity package works. There will be some (limited) scope for transfer of trips to rail, but limitations in Park & Ride capacity and existing rail capacity limitations will ultimately constrain what can be achieved with conventional rail.

5.4 The issues of the impact of planned works are illustrated by the imminent work on the M5 Oldbury Viaduct, which now needs extensive major maintenance works to address structural issues. These works will result in significant disruption to both long distance through traffic and the local traffic which currently uses the M5 (but which will inevitably seek alternative routes). The impact on the local network will be exacerbated by some re-routing of traffic away from the motorway to avoid congestion. Sandwell MBC have been working with Highways England to identify and seek agreement on a programme of mitigation works on the local highway supported by a robust communications plan for local residents and businesses, including local junction upgrades. It is proposed to monitor the

impact of the works in order to assess the effectiveness of the mitigation and in order to inform planning for other major schemes around the area.

- 5.5 In addition to managing the impact of planned works there will be an increased need to improve incident recovery. This was highlighted by the Police and Crime Commissioners inquest. During the construction period the network can generally be expected to be under greater stress and less able to cope with delays from accidents and other incidents. Greater streamlining and coordination between Highways Authorities, transport operators and emergency services will provide benefits if linked by a common set of intelligence and response protocols. Work on this has started and will continue to be progressed.
- 5.6 Sustainable travel options and conventional bus based Park & Ride all have useful roles to play, but experience from the London 2012 Olympics suggests that long term sustained change in travel mode choice is more difficult. Based on TfL's experience there is some suggestion that a 5% shift to sustainable travel might be realistic, although challenging.
- 5.7 Based on the consultants findings and a workshop with stakeholders from across the area (including HS2, Highways England, M6 Toll, Network Rail and DfT), the most impactful mitigation options are likely to focus on (but should not be limited to):
- **Making use of empty seat capacity in cars:** There is a high proportion of single occupancy car trip making over the local and strategic highway network, with significant level of short distance motorway travel (often referred to as junction hopping);
 - **Shifting the time of travel and mode choice:** Through a mixture of technology enabled incentives (easy payment systems and public transport pricing; traveller information; and Mobility as a Service solutions) and intelligent management of parking supply and pricing. These would be most effectively implemented through targeted engagement with main traffic generating areas and organisations, and at pinch point hot spots;
 - **Traffic management - physical and enforcement measures:** Introduction of temporary measures such as High Occupancy Vehicle Lanes; Clearways (or Red Routes) and making best use of underutilised highway capacity such as the M6 Toll; and rigorous traffic enforcement (including moving traffic offences); and
 - **Communications, data, technology and intelligence:** The use of optimised Urban Traffic Control systems and systems performance monitoring within an environment of open data shared between agencies and published openly. This would be used to optimise construction planning and scheduling; as well as to drive joined up public information through multiple communications channels.
- 5.8 A number of immediate priorities for further action have been identified and are proposed to be put in place as soon as possible. Highways England have highlighted that the peak impact of construction impacts will not occur until into 2018, however, there will be tangible impacts from circa April 2017, starting with works on the M5.

The immediate priorities identified are:

- Form a formal and fully empowered multi-agency partnership with robust governance to work together to tackle the issues;

- Define and agree clear objectives for the partnership, to be based around ensuring the economic activity is able to continue to operate and grow whilst existing transport system capacity issues are addressed and new growth sites are unlocked;
- Form a robust and universally adopted communications strategy which can provide a single voice and emphasise the overall benefits of the investment. This would include messaging around meeting the daily travel demands of businesses and residents;
- Undertake a more detailed evidence analysis and develop firm mitigation strategies and schemes, including detailed feasibility and costs for these, covering a wider geography than just the main motorway box;
- Secure funding for and undertake enabling and preparatory actions. This would include the setting up of a West Midlands Regional Integrated Command Centre to bring together all stakeholders with all the relevant information to direct both the strategic and operational activity for delivery by all partners;
- Ensuring that all traffic signal junctions, variable message signs and traffic cameras across the West Midlands constituent authority area are operational and connected via a Urban Traffic Control Centre to the existing West Midlands common database system.

5.9 In parallel to the initial scoping work and on-going discussions with stakeholders TfWM have been negotiating with DfT and HMT over support required for network resilience measures.

These discussions are on-going but include:

- Additional powers to provide flexibility over the rapid introduction and removal of temporary bus services, park and ride provision and moving traffic offences;
- Formal Government support and engagement in a Transport Resilience Partnership;
- Feasibility and business case development funding of £250,000; and
- Protocols and mechanisms for better West Midlands engagement in the operation of the M6 Toll.

6.0 Governance

6.1 A robust governance structure will be essential in order to address the issues highlighted above. The principles of this were discussed at a wider stakeholder meeting in late September 2016, at which HS2 Ltd, Highways England, Network Rail and many of the Local Authorities across the WMCA area were represented. It was agreed that the governance should be implemented and refined over time as required.

6.2 Subsequently a governance structure has been developed with the support of HS2 Ltd and Highways England as outlined in Figure 1. At the head of this proposed structure is a Leadership Board with Ministerial, Leader, Mayoral and Police & Crime Commissioner level membership, supported by Chief Executive level representation from Highways England and HS2 Ltd. Preliminary discussion with Andrew Jones MP and with Highways England's Chief Executive have suggested support for this approach.

6.3 The work of the partners through the Governance structure will need to be supported by agreed clear and consistent messaging and communications to the public, employers and investors. This is highly likely to require specialist support and will need to be resourced accordingly. Proposals for this are being scoped.

6.4 The geographic scope of the governance is proposed as set out in Figure 2. This has a core area of focus within which direct mitigation measures and coordination of works will be

targeted, but with full consideration of the impacts and opportunities across a wider area of interest.

- 6.5 All aspects of the above governance will need supporting by clear Terms of Reference, which are being developed in partnership with Highways England and others.

Figure 1: Proposed Governance

WEST MIDLANDS TRANSPORT RESILIENCE & RESPONSE PARTNERSHIP (WM TRaR): GOVERNANCE

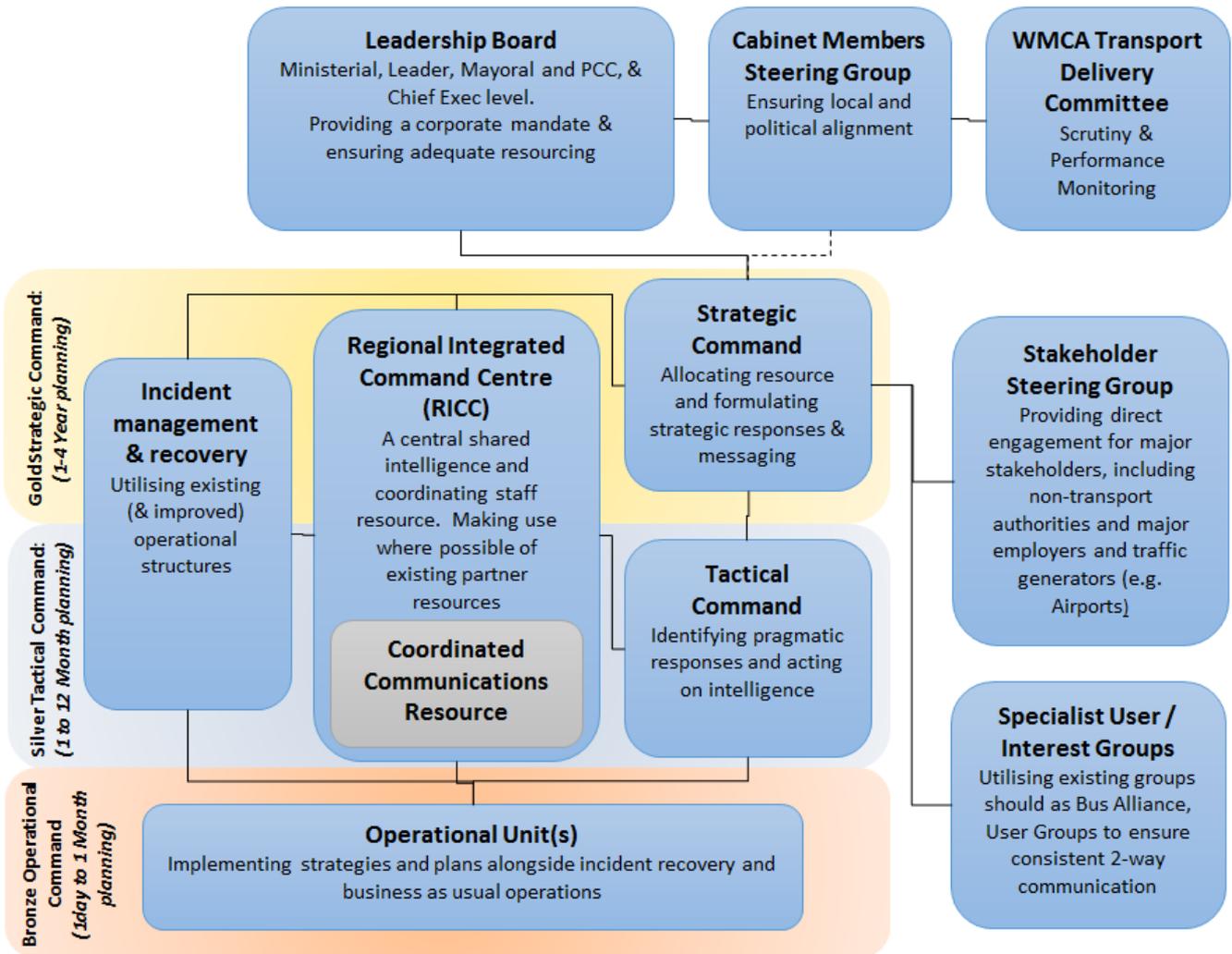
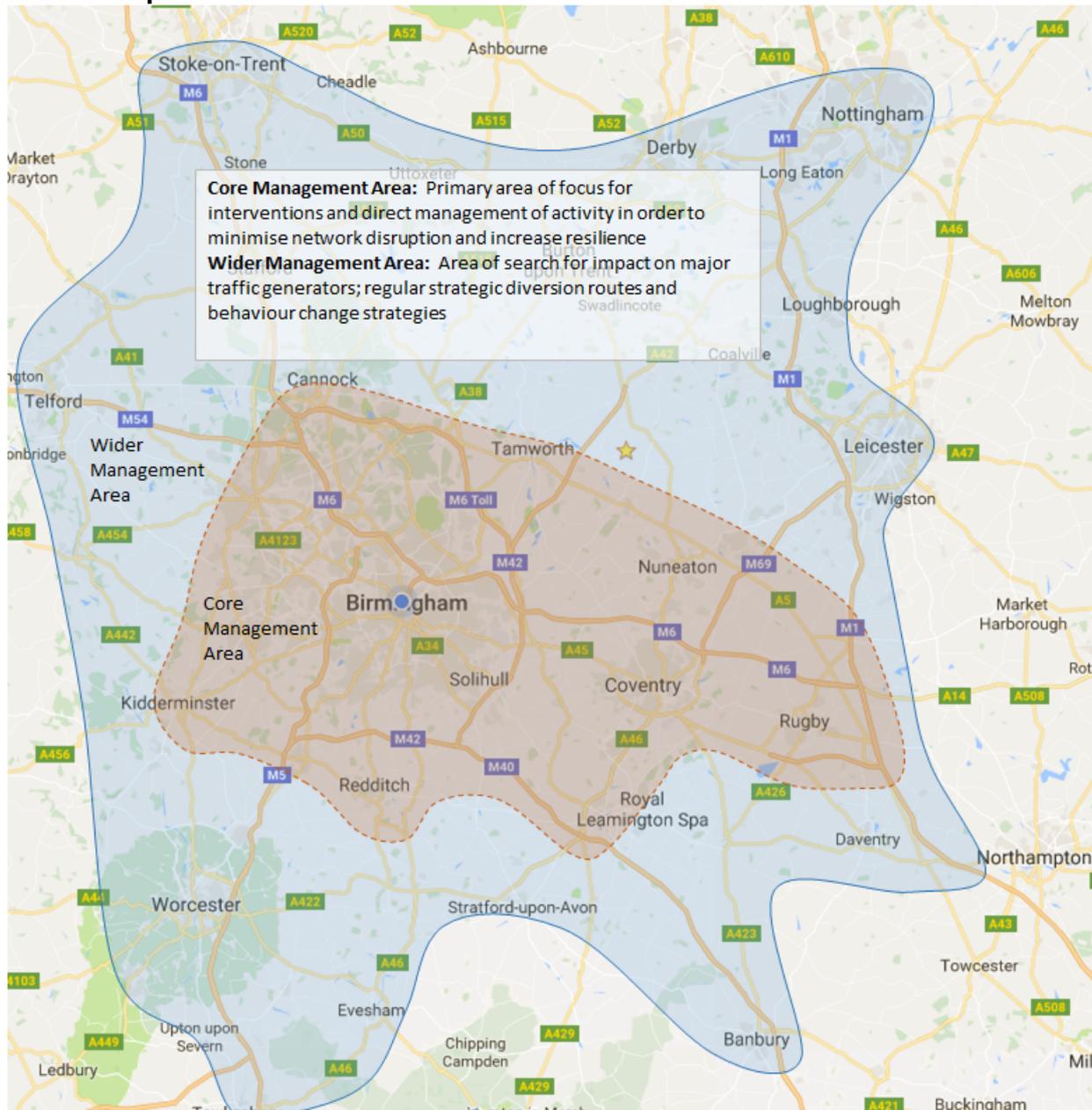


Figure 2: Area of focus for West Midlands Transport Resilience & Response Partnership



7.0 Conclusions & Summary

- 7.1 The overall impact of all the works and merit of all the individual schemes is significantly positive. The works are required in order to unlock the strategic growth objectives adopted in the West Midlands Strategic Economic Plan. However, the potential magnitude of cost in the short term, if the network resilience issues are not well managed, has potential to be significant.
- 7.2 The bulk of the impacts are arising from major strategic works that are being undertaken as part of national programmes such as HS2 and motorway upgrades, albeit these will ultimately provide significant local benefits.
- 7.3 Short of not undertaking the major elements of the capacity improvement and maintenance works some level of adverse impact cannot be avoided. Not undertaking these works is not considered a viable approach as it would result in long overdue strategic investment in the

transport capacity of the West Midlands (which is necessary for growth) being deferred further, or being put at risk of not happening at all.

- 7.4 The worst of the short term adverse impact can be limited and managed through the introduction of a comprehensive range of solutions, which must be delivered in a fully coordinated partnership operating under a robust mandate which is embraced by all partners. Highways England, Network Rail and HS2 Ltd are understood to support TfWM providing leadership.
- 7.5 The impacts will start to be felt soon and will rapidly increase in magnitude, requiring an immediate concerted and well-funded effort by all partners.
- 7.6 There is significant further work to be done to understand the full implications and options for the detail of the mitigation activity required, but it is clear that there is no single 'silver bullet'. A broad based suite of measures will be needed, including physical temporary measures and a significant amount of revenue intensive stakeholder and business engagement; alongside community/traveller information and behaviour change support.
- 7.7 In addition to the more detailed investigation there are number of areas of activity in which work can now start, such as the feasibility of the establishment of a Regional Integrated Command Centre. This could be central to enabling other measures to work most effectively. The RICC would reflect the information contained in operational centres (local UTC desks, major construction compounds, CCTV centres etc) into a single centre of command containing the right staff from all agencies (Highways England, Local Highway Authorities, blue light services, TfWM, transport operators, HS2 Ltd and major contractors). Together these resources would allow a single coordinated view of immediate and medium term strategy to be formed and communicated, with a rich source of open operational data generated and published for all to access. There are various potential models for the RICC, which need to be explored through further feasibility and business case work. Funding of £250,000 to do this is being sought from Government. It is not intended that the RICC would replace local operational UTC centres, which would remain responsible for the implementation of intelligence based strategies formed in the RICC.
- 7.8 Public communications will be highly sensitive and critical for all partners to handle them clearly and consistently. A very robust and a well-resourced communications strategy needs to be developed and put in place as soon as possible, central to which will need to be a message of the West Midlands remaining 'open for business' and at the centre of planned for game changing and growth enabling investment.

8.0 Financial implications

- 8.1 There are no immediate financial implications arising from the implementation of the recommendations of this report and the immediate priority actions will be put in place within existing budgets. However, in order to bring forward proposals £250,000 of feasibility and business case funding is sought from Government and no other funding source has been identified. Failure to secure this funding would result in a direct delay to the development of critical elements of the proposed mitigation strategy, and a consequent restricted ability to address network resilience issues.
- 8.2 In order to develop a coherent and robust overall response to transport resilience further significant funding will need to be identified, and no existing budgets for this have been identified.

9.0 Legal implications

9.1 There are no direct legal implications arising from this report, although in the future it is anticipated that it will be necessary to enter into a number of partnership and legal agreements.

10.0 Equalities implications

10.1 The impact of individual schemes are likely to have a positive equality impact on a number of protected characteristics. However, the interim disruptions are likely to have a negative impact on people with disabilities especially and older age groups. Individual schemes will need to be equality impact assessed and a plan needs to be put in place to ensure minimum disruption to customers during the construction period and effective and diverse communication to the public including disabled and older age groups.

11.0 Other implications

11.1 Environmental impacts of poor network resilience could be significant, especially air quality and health as further work is undertaken these potential impacts will be assessed and identified.

12.0 Schedule of background papers

12.1 No papers.

13.0 Appendices

13.1 APPENDIX 1: Plan of main works identified around the Birmingham motorway box (N.B. Print and view at A3 colour)
