



**Growing and sharing prosperity**

Delivering our City Deal

**Report to:** Greater Cambridge Partnership Joint Assembly

28<sup>th</sup> February 2018

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**Western Orbital: Progress on additional Park and Ride capacity; and submission to Highways England on Girton Interchange and M11 Smart Motorway.**

**1. Purpose**

- 1.1. The Western Orbital proposals support the Greater Cambridge Partnership's transport vision of delivering a world class transport system that makes it easy to get into, out of, and around Cambridge in ways that enhance the environment and retain the beauty of the City including supporting the delivery of the CAM Mass Rapid Transit system.
- 1.2. This report outlines the development of the Western Orbital scheme and sets out issues for public consultation in summer 2018 on a new Park & Ride site (P&R) at J11 of the M11 and associated public transport/ vehicular priority measures.
- 1.3. This report also seeks set out proposals to ask the GCP Executive Board to delegate to the Chief Executive in consultation with the Chair a submission to Government for the inclusion of Girton Interchange and M11 smart motorway (**Appendix 2**) in the Highway England's second Roads Investment Strategy ("RIS2") (**Appendix 1**).

**2. Key issues and considerations**

- 2.1. Between 2011 and 2031 there are planned additional 15,500 new homes and 20,000 new jobs in development locations to the west and south of Cambridge, at Cambridge Biomedical Campus, Cambridge Northern Fringe, Cambridge North West, Cambridge Southern Fringe, West Cambridge, Cambourne and Bourn. It is to be expected that a significant proportion of new residents and new workers will need to make orbital trips between the north, west and south of Cambridge and interventions are required that will support them to make those trips in a way that minimises pressure on key radial routes.
- 2.2. Beyond that, the recent National Infrastructure Commission's report on the Cambridge – Milton Keynes – Oxford Growth Corridor has concluded that improvements in east-west transport connectivity along the corridor are necessary to underpin the area's long term economic success, and alleviate the area's "chronic undersupply of homes [which] could jeopardise growth, limit access to labour and put prosperity at risk". It estimates that infrastructure investment could support the delivery of up to 1 million new homes in a broad corridor between Oxford and Cambridge. This level of development will inevitably place additional pressure on the existing M11 around Cambridge including the Girton Interchange.

**Western Orbital**

- 2.3. In early 2016 the GCP undertook a consultation on the wider Western Orbital strategy. This consultation outlined a number of wide ranging concepts including alignments of a future bus priority route and park & cycle projects. These elements of the Western Orbital have subsequently been reviewed and work has focused on a package of improvements to the West of Cambridge including P&R improvements at J11, improvements to the M11 and

Girton Interchange, which taken together, will deliver tangible improvements to the local transport network.

#### **West of Cambridge Package – Park & Ride**

- 2.4. The proposals for a Park & Ride at Junction 11 support the Greater Cambridge Partnership's transport vision of delivering public transport improvements across the City and tackling traffic congestion. They also support delivery of the CAM Mass Rapid Transit system and the P&R proposals would, working in partnership with the Combined Authority, ultimately transition to form part of that network. This approach was recommended by the recent Strategic Options Appraisal undertaken by Steer Davies Gleave.
- 2.5. It is of note that in the 2016 consultation the majority of respondents supported the concept of P&R, with the greatest support expressed for a new Park & Ride site at the Junction 11 exit of the M11 (70.9% of respondents supported or strongly supported this option).
- 2.6. In September 2017 the GCP Executive Board agreed to increase the capacity of the Trumpington P&R site by 299 spaces to address short term capacity constraints at this site in the context of the expansion of the Cambridge Biomedical Campus (CBC). Following advice from the Local Planning Authority it is now confirmed that between 250 and 279 spaces can be added to the existing site reflecting the constraints due to adjacent housing.
- 2.7. In November 2017 a report to the GCP Executive Board addressed the additional medium and longer term considerations around a new P&R site at J11 as well as associated junction improvements. The GCP Executive Board agreed to:

“Proceed with a Full Outline Business Case for a new Park and Ride site west of Junction 11 of the M11 and associated access/bus priority measures North West, as outlined in Appendix 1 of the report. The Park and Ride site to be based on the emerging Travel Hub concept”.

- 2.8. A new P&R site could also include developing the concept of multi-functional hubs, providing a range of transport interchange options, not solely focussing upon arrival by car.
- 2.9. This business case will compare the costs and benefits of a new P&R site and is programmed to be completed in December 2018. Public consultation in summer of 2018 forms part of the business case development.
- 2.10. In addition to this, a local stakeholder Engagement Group has been created and met before Christmas 2017 with a further meeting held in February 2018 and workshops planned for March 2018. The public consultation and engagement will inform further option development.

#### **West of Cambridge Package – Girton Interchange**

- 2.11. At present, Girton interchange (where the A14 and A428 meet at J14 of the M11) has limited movements on all branches except when travelling west on the A14. As a result there is no movement available for traffic:
- heading North East along the A428 to join the M11 and Huntingdon Road, and can only join the A14 going east and
  - Huntingdon Road outbound only connects to the A14 going North West:
- 2.12. This limits the strategic value of the intersection of the north/south M11 route with the A428 east west connection which will increase in strategic importance given the priority placed by the National Infrastructure Commission (NIC) on the Cambridge – Milton Keynes – Oxford growth corridor and upgrade of the A428 from the A1 to Caxton Gibbet.

- 2.13. Increasing capacity of the Girton interchange is therefore a priority to address current traffic congestion issues and support the delivery of improved public transport services. In combination with three lane running on the M11 around Cambridge, upgrading Girton interchange has the potential to markedly improve the reliability of routes to the north and west of Cambridge route and reduce their susceptibility to delay caused by traffic incidents.
- 2.14. Officers are working closely with the Highways England team developing the Oxford to Cambridge Expressway scheme to develop the case for inclusion of Girton interchange (all ways movement) in RIS2. This includes traffic modelling on the impacts of allowing all-ways movements with/ without the East/ West Corridor proposal.
- 2.15. It is clear that the addition of potentially 1 million homes along the Cambridge – Milton Keynes – Oxford growth corridor has the potential to significantly impact the outcome. The work currently underway will test the impact of different housing and employment distribution scenarios along that corridor to establish the case for including upgrades to Girton interchange in RIS2. Results of the modelling work are expected in late February/ early March.

#### **West of Cambridge Package – M11 Smart Motorway**

- 2.16. Around Cambridge, the M11 (which is two lanes in each direction north of J8) currently carries traffic flows that, if constructing a new road, would justify at least three lanes in each direction. Between J11 and J14 2015 traffic counts show flows of between 66,000 and 81,000 vehicles daily<sup>1</sup>.
- 2.17. South of Cambridge traffic flows drop off by almost 40% indicating that significant traffic to or around Cambridge is using the motorway as part of their journey. Between J10 and J11 traffic falls to 50,000 vehicles per day, and between J9 and J10 it is 41,000.



**Figure 1: 2015 traffic count of daily vehicle flows on M11 around Cambridge**

- 2.18. Existing problems on the M11 are regularly observed including:
- Congestion on the A14 westbound also causes queueing on the M11 (although current works to A14 should alleviate this);
  - Junctions 10, 11, 12 and 13 do not cope well with the level of traffic from the M11 that uses them in the peaks, and congestion at these junctions can cause queuing on the M11 carriageway or hard shoulders on the approaches to them.
- 2.19. A Smart Motorway will be an important contribution to resolving the Greater Cambridge congestion issues but will not be sufficient by itself. Even if the motorway and junctions were not a constraint, the capacity of the local road network into Cambridge might have a similar effect on overall journey times, shifting congestion from the Strategic Road Network to the local road network. M11 Smart motorway is therefore part of a package of solutions to maximise the efficiency of the current network which will underpin the ability to deliver

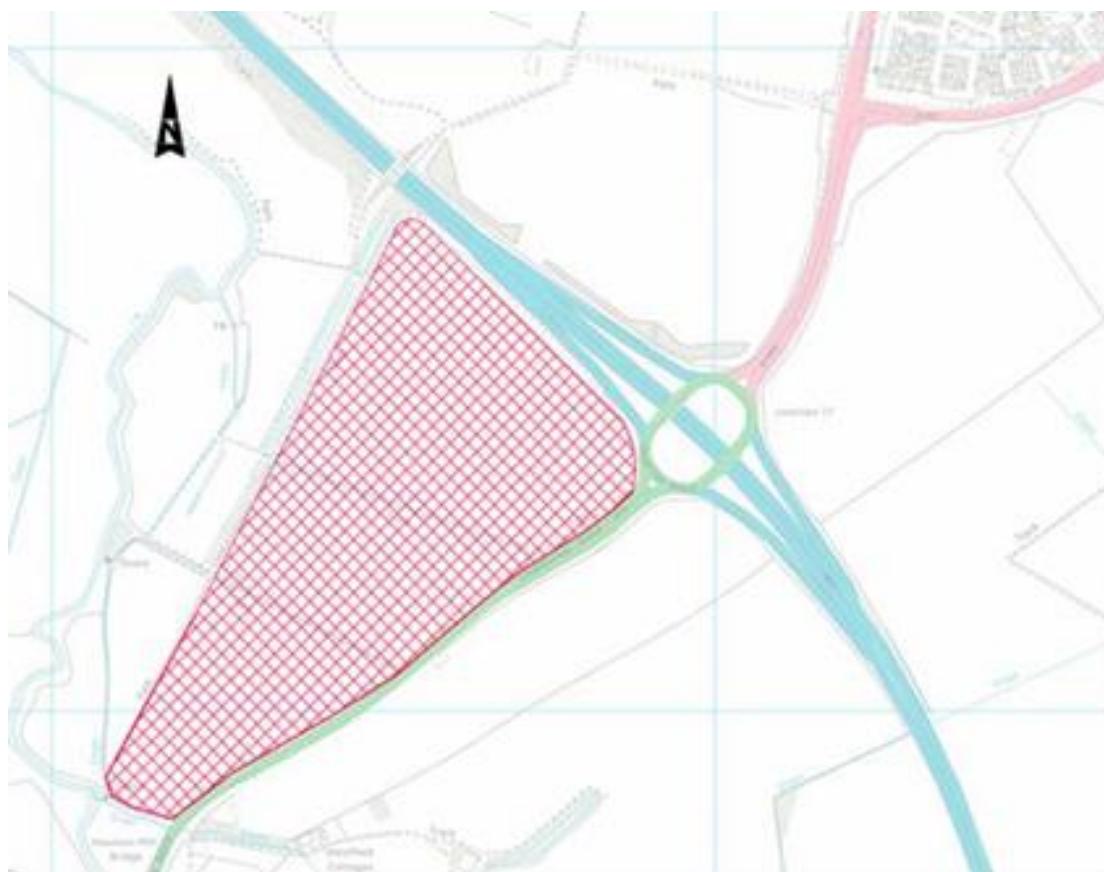
<sup>1</sup> The Highways England Design Manual for Roads and Bridges (DRMB) recommended opening year flows for a 3-lane highway are 25,000-47,000 and for a 4-lane highway are 52,000-90,000. Source: Ta 46/97 Table 2.1.

credible alternative options to private car including, in due course, orbital public transport improvements.

- 2.20. There has already been engagement with Highways England regarding the inclusion of a M11 smart motorway upgrade within RIS2, whilst ensuring that local impacts are fully assessed through the business case development process.

### 3. Park & Ride Consultation

- 3.1. Following on from the previous work presented to the GCP Executive Board, it is proposed to now consult the public on the further details of the Park & Ride:
- Confirming the principle of a Park & Ride at J11 (previously consulted on in 2016) as more detail can now be provided on the specific need and location of the site.
  - The principle of providing segregated links between a new P&R site and Trumpington P&R site/guided busway for buses and cycles.
  - The principle of providing a south bound bus and/or P&R access only slip road for general traffic.
  - The principle of expanding the existing site at Trumpington.
  - Consideration of potential travel hub features.
- 3.2. In addition to the general issues it is proposed to consult on:
- The specific site of a P&R proposed to the NW of J11 of the M11 as set out in Figure 1 to demonstrate that this proposed site is the best option in terms of environmental and physical constraints, transport, delivery and interaction with the existing network.



**Figure 1: Area within which P&R Site could be situated**

- 3.3. It is proposed to consult on a range of issues around general P&R access and bus priority options in and around the potential new P&R site. It is proposed to identify in the technical

work leading up to the consultation in summer 2018, a shortlist of proposals which will address a number of themes to allow for public input. These themes are set out in the following paragraphs and illustrated in **Figure 2** on the following page.

#### **Vehicular Access**

- 3.4. Consultation will be proposed on different potential vehicular access and traffic management arrangements to a P&R site, including different approaches to P&R sites from the A10 (east and west bound) and M11 (north and south bound).

#### **Bus Priority**

- 3.5. Bus priority movements in and out of the P&R sites will also be consulted on, including potential new bus only links across the M11 either using the existing agricultural bridge to the north of J11 or alternatively bus priority/ segregation directly across J11. Shared or dedicated bus access into the existing Trumpington P&R site and guided busway avoiding J11 could also be considered in the consultation.

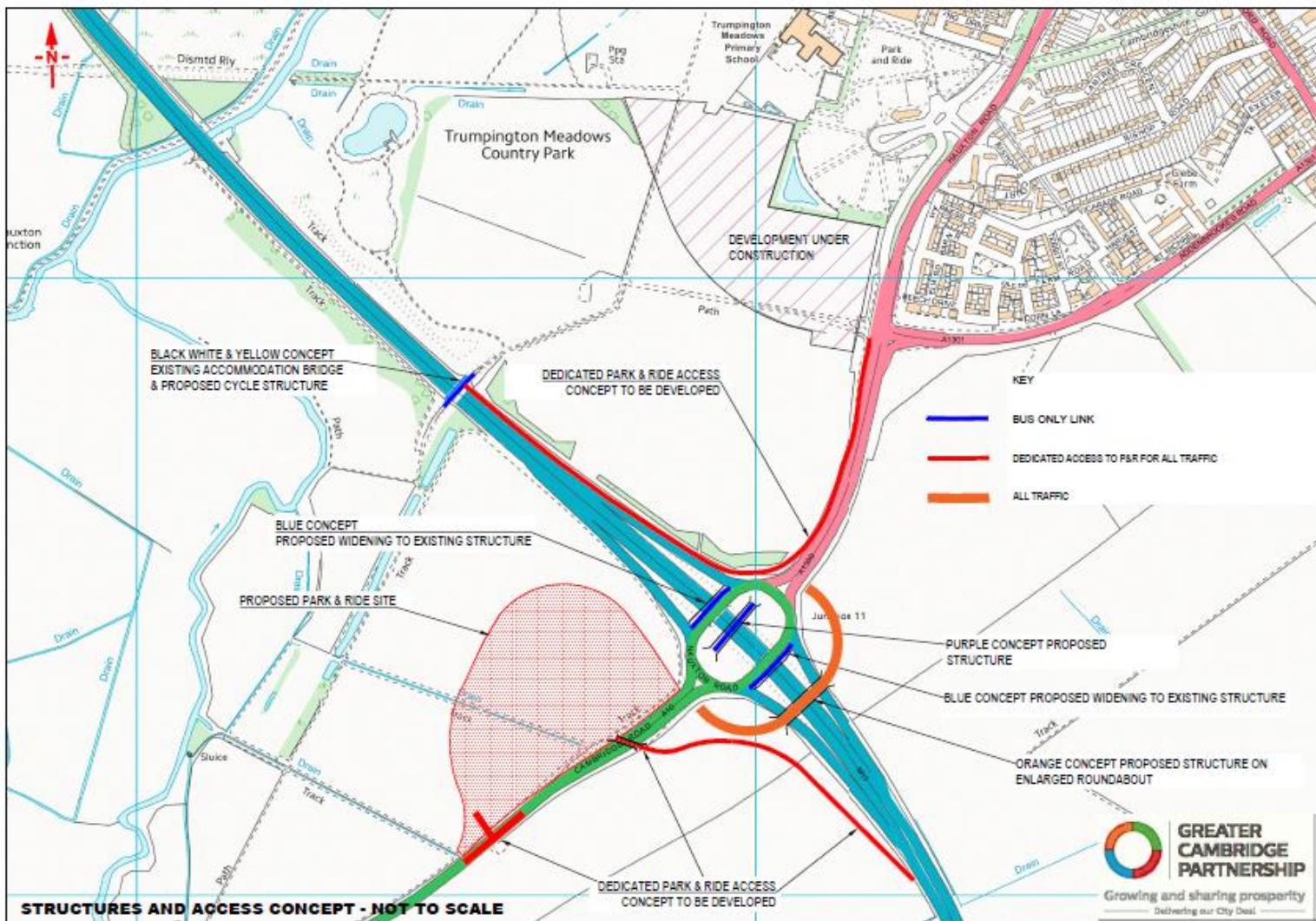
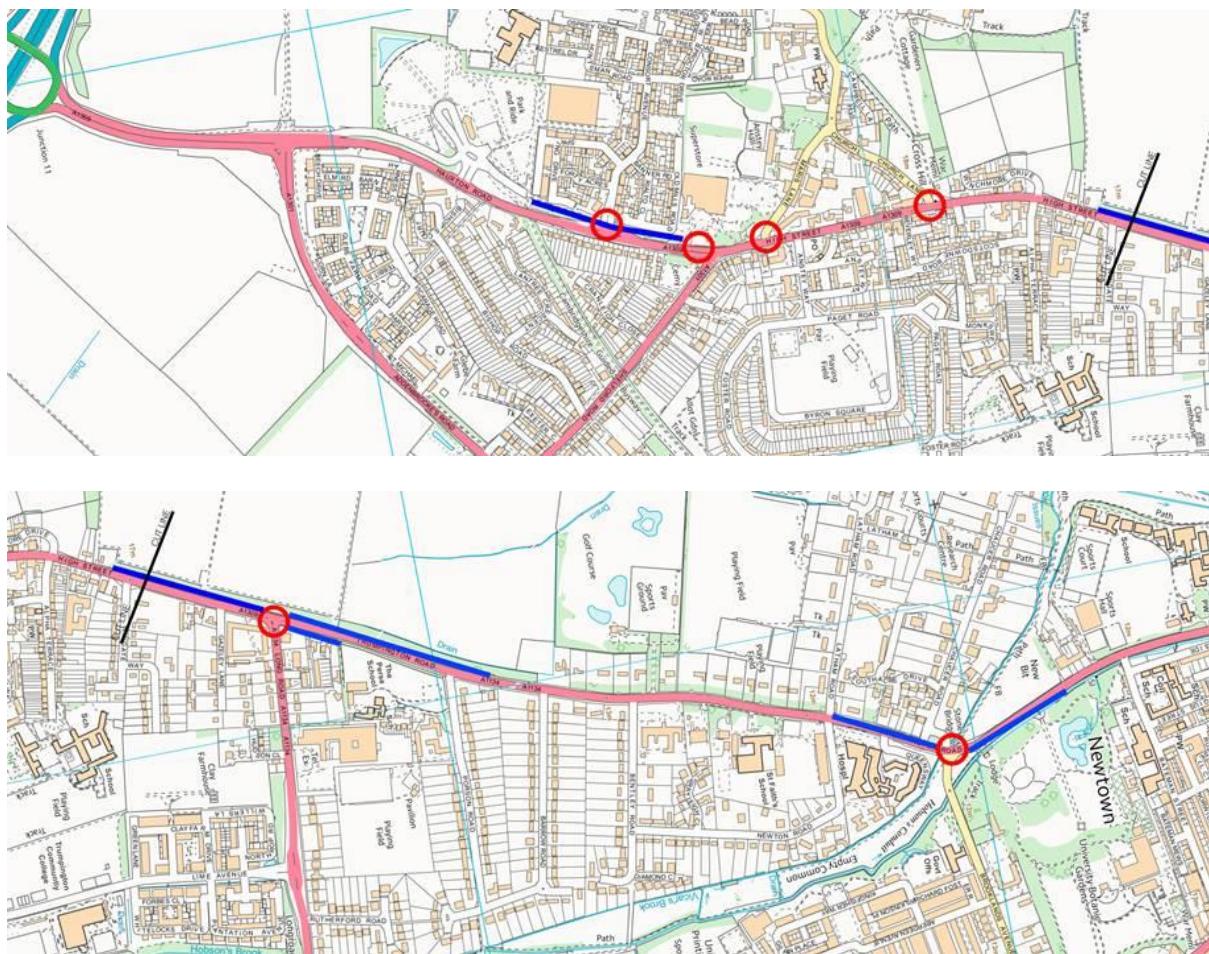


Figure 2 – Themes for public consultation - Summary of vehicular access and bus priority themes

- 3.6 It is intended to develop these themes into a range of packages of measures which can be shortlisted, with input from the Stakeholder Engagement Group to identify a series of specific options for public consultation. This shortlisting will be done on using transport and environmental and other criteria in line with governments Transport Assessment Guidance.

### **Trumpington Road**

- 3.7 As set out in the report of November 2017 there is a strategic argument for considering potential bus priority improvements along Trumpington Road to enhance bus reliability into the City Centre in support of extending Park & Ride provision. It is therefore proposed to engage the public on a series of possible bus priority interventions between the existing P&R site and the edge of the city centre in areas set in **Figure 3** below:



**Figure 3: Potential Bus Priority Interventions Trumpington Road**

- 3.8 The proposals within each area would be provided in more detail in the consultation in Summer 2018 and include more input from the Engagement Group and also via more site specific engagement with stakeholders along Trumpington Road and adjoining areas.

## **4. Options**

- 4.1 The proposed consultation scope is in line with decision of the GCP Executive Board of September 2017 and November 2017.

## **5. Next steps and milestones**

- 5.1. This report has identified a number of potential themes for inclusion in the public consultation in summer 2018 for the Western Orbital J11 Park and Ride. It is intended that during the period March to June 2018 these proposals will be refined in advance of the public consultation.
- 5.2. This report summarises work to date developing the case for Girton Interchange and M11 smart motorway to be included in RIS2 and this work will be developed to meet a submission deadline of late March 2018.
- 5.3. The submissions to government currently under preparation will include:
  - Baseline information about network operation and constraints;
  - Current planned growth to 2031 and the vision for transformative growth to 2050 as part of the Cambridge – Milton Keynes – Oxford growth corridor;
  - Links to strategic vision and objectives of RIS and of the Greater Cambridge Partnership Future Investment Strategy; and
  - The strategic economic rationale for investment.

## **6 Recommendations to Joint Assembly**

- 6.1. Joint Assembly is asked to comment on the overall approach being recommended to the Executive Board.

## **7. Appendix 1: Background information about RIS2**

- 7.1. In order to set investment in the Strategic Road Network (SRN) the Government publishes a multi-year ‘Road Investment Strategy’ (RIS). The first Roads Investment Strategy (RIS1) covered the period 2015/2020 and included reference to technology upgrades which included some elements of smart motorway on J8 to J14 of the M11. These proposals were elaborated in the London to Leeds (East) Route Strategy, published in June 2015 but the scheme was subsequently dropped in the 2017 RIS review.
- 7.2. The second RIS (RIS2) is currently under development and will cover the financial years 2020/21 to 2024/25.
- 7.3. As the first step in the process of defining the RIS, Highways England (HE) has published an Initial Report<sup>2</sup> and series of supporting documents which collectively set out HE’s assessment of the current state of the SRN, its potential future needs, their strategic priorities for RIS2 and their proposed methodology for scheme sifting (but does not yet get as far as recommending schemes for inclusion). That document is now subject to a consultation process which closes shortly. Once responses have been considered and findings published, the Department for Transport (DfT) will develop the RIS2 strategy for publication in 2019.

## **8. Appendix 2: Smart Motorways**

- 8.1. Smart motorways are a technology driven approach to maximising the efficiency of the existing motorway network. They increase capacity and relieve congestion by using the hard shoulder for traffic, either permanently or during times of congestion, effectively creating a new lane without traditional road widening. In addition, technology allows Highways England to monitor and respond to real-time congestion levels using variable speed limits to smooth traffic flow and reduce congestion caused by stop-start driving. Emergency refuge areas with emergency telephones provide an area of relative safety at regular intervals.
- 8.2. Smart motorways increase capacity, support economic connectivity, improve journey times and offer reduced environmental impacts. They are able to deliver this more quickly, at lower cost and with less disruption than traditional road widening.
- 8.3. Evidence from the first smart motorway scheme (the M42, opened in 2006) is that since implementation, journey reliability has improved by 22 per cent; personal injury accidents reduced by more than half; and where accidents did occur, severity was much lower overall with zero fatalities and fewer seriously injured<sup>3</sup>.
- 8.4. Smart motorways are a central element of Highways England’s strategic focus. The recent RIS2 consultation document identifies the extension and evolution of a “smart motorway spine” to the network connecting the UK’s largest cities. Smart motorways is one of its strategic priorities, and the current RIS1 identified the stretch of the M11 between J9 and J14 as a potential future priority for smart motorway roll-out. The scheme was dropped due to funding constraints in the 2017 RIS review.

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<sup>2</sup> Highways England, ‘Strategic Road Network Initial Report’ December 2017 and supporting documents, available at: <https://www.gov.uk/government/publications/highways-englands-strategic-road-network-initial-report>

<sup>3</sup> <http://www.highways.gov.uk/smart-motorways-programme/>