M54 to M6 Link Road

TR010054

Volume 7

7.5 Outline Traffic Management Plan

Regulation 5(2)(q)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

January 2020

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M54 to M6 Link Road

Development Consent Order 202[ ]

Outline Traffic Management Plan

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1 Introduction

1.1 Purpose and Objectives

1.1.1 Highways England are developing a link road between the M54 and M6 to provide a link between Junction 1 of the M54, M6 Junction 11 and the A460 to Cannock. The M54 to M6 Link Road (herein referred to as 'the Scheme') aims to reduce congestion on local / regional routes, particularly the A449(T), A5(T) and A460 and deliver improved transport links to encourage the development of the surrounding area.

1.1.2 The purpose of this Outline Traffic Management Plan (OTMP) is to describe the temporary traffic management processes that will be followed for the safe and efficient construction phases of the Scheme.

1.1.3 It is necessary to minimise the impact on customers and stakeholders while ensuring work is carried out efficiently, and as a result delivered as quickly as possible. It is of the upmost importance that no one should be harmed when travelling or working on the strategic road network.

1.1.4 This version of the Outline Traffic Management Plan document has been developed with the input and support of Highways England's buildability advisors that were appointed to provide construction advice to the Scheme.

1.1.5 This outline version of the Traffic Management Plan has been prepared at Stage 3 (Preliminary Design). At this stage the content is preliminary. Further refinement of the OTMP is required at each subsequent Stage of the Scheme's development. The next major revision will be in Stage 5 "Construction Preparation" at which time the Project's construction methods and programmes will be developed in more detail including consultation with the key stakeholders.

1.1.6 Once the Contractor has been appointed, the proposed method of undertaking the Works will need to be reviewed. The land-take required to implement the construction methods will need to be balanced against the space needed to implement sufficient capacity at the temporary junctions and to phase the Traffic management layouts to suit the Works.

1.1.7 This Outline Traffic Management Plan is a live document and key stakeholders, including the Contractor, England's West Midlands (Area 9) Asset Delivery Team, local highway authorities and the emergency services will be consulted prior to finalising this Outline Traffic Management Plan.

1.1.8 Subsequent versions of this OTMP will be reviewed and updated and agreed with all relevant parties, which include but is not limited to Highways England's operation and maintenance teams, Staffordshire Country Council and the affected District Councils prior to the start of works.

1.2 Summary Description of the Scheme

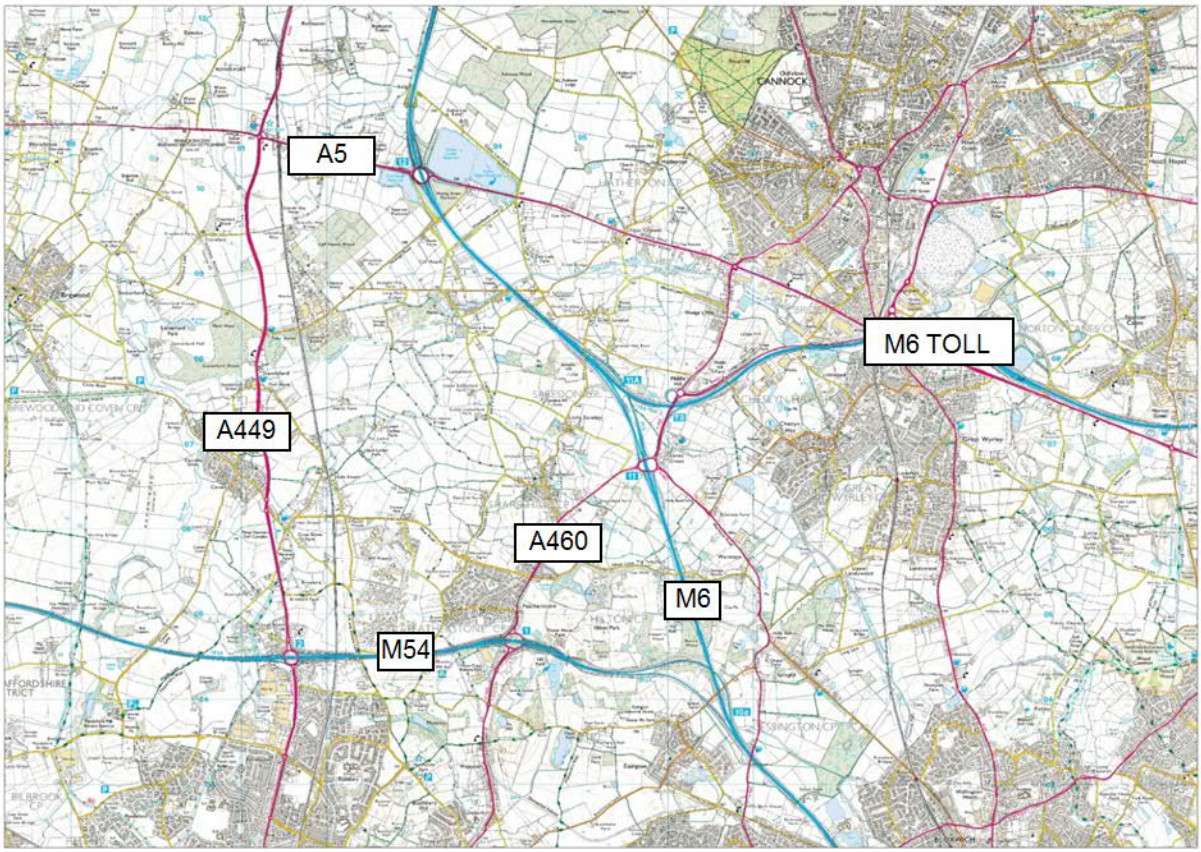
1.2.1 Currently, there's no direct strategic route from the M54 to the M6 north. Road users wanting to access the M6 north or M6 Toll must use the A460, A449 and A5. This means high volumes of both long-distance and local traffic use the local roads to travel this route.

1.2.2 A large volume of local and long-distance traffic uses the A460, which passes adjacent to the villages of Featherstone, Hilton and Shareshill.

1.2.3 The A460 has just one lane in each direction with numerous junctions and stretches of road with a 30mph speed limit. It was not designed for the amount and type of traffic currently using it. This results in delays, congestion and above average accident rates.

1.2.4 There is therefore a need to provide a link road to address the current levels of congestion and its impacts on local residents and motorists. Investment in additional capacity will support local economic growth for Telford, Shrewsbury, Wolverhampton, Cannock and Tamworth by improving traffic flow and enhanced east-west and north-south routes.

Figure Error! No text of specified style in document.**-1: Scheme Location Plan**



1.3 Challenges and Considerations

1.3.1 There are no project specific constraints with respect to delivery during the construction phase. However, the following general constraints were identified that will need to be considered in the construction phase:

- English Heritage - The Scheme is in the vicinity of the Grade I listed building, Hilton Hall, and associated park lands. The Scheme will also impact upon green fields and local farms.
- Noise and Air Quality - The A460 passes through Featherstone, Hilton and along the southeast of Shareshill with houses both fronting the road and close to the road in the villages.

1.4 Dynamic Roadworks Vision

1.4.1 Customers understand why there are road works, but nonetheless they still see them as disruptive and inconvenient. To improve the customer experience, Highways England has developed a vision of how it will manage major road works in the future.

1.4.2 Consideration has been given to the principles described in the vision as part of the deployment of the OTMP. The vision describes five key areas where Highways England is looking to change the approach to road works.

- Varying the speed limits so they are appropriate for the work taking place
- Shortening the length of road works
- Appropriate use of full road closures and associated diversions
- Delivering road works quicker
- Explaining clearly what activities are, or are not, taking place

1.4.3 The Scheme's traffic management proposals and impacts will be assessed against the Dynamic Roadworks Vision Scoring criteria, where possible, as shown in Table Error**! No text of specified style in document.**-1. A form is included in the appendices, which evidences these benchmark scores.

Table Error! No text of specified style in document.**-1: Dynamic Roadworks Vision Scoring**

Vision	Green/Amber/Red/NA/Not Yet Known
Speed	Amber
Length	Green
Closures and Diversions	Green
Delivering Quicker	Amber
Explaining Activity	Green

2 Outline Traffic Management Plan

2.1 Customer Requirements

2.1.1 This Outline Traffic Management Plan is required by Highways England to describe the Temporary Traffic Management (TTM) arrangement needed to facilitate the construction of the Scheme. The Outline Traffic Management Plan has been prepared with aims to achieve:

- No increase in personal injury accidents/collisions (or severity thereof);
- Protection to vulnerable road users;
- Protection for the workforce from adjacent live traffic during construction.

2.1.2 The Highways England 2015-20 Delivery Plan states a KPI target to achieve 90% customer satisfaction, currently satisfaction of 'roadworks management' scores 63%. 'Roadworks – A Customers View' identifies 20 key principles which outline what customers want designers to consider when planning and managing roadworks. Consideration has been given to this guidance during the development of the OTMP and the 20 key principles are detailed under 'All Motorists'.

2.1.3 In January 2019, Highways England published their guidance document "Transforming roadworks: Our approach". The document is designed to communicate Highways England's approach to transforming roadworks for their customers, supply chain and stakeholders, by creating a better roadworks experience. The safety at roadworks is paramount. But Highways England's customers should also feel that roadworks are efficient and that there is a proportionate balance between the work taking place and the benefits being delivered.

2.1.4 The five key elements for transforming roadworks are summarised in Figure Error**! No text of specified style in document.**-1.

Figure Error! No text of specified style in document.**-1: Five Key Elements For Transforming Roadworks**

Stakeholder Consultation

2.1.5 Appropriate consultation with key stakeholders has taken place throughout the development of the scheme design. Stakeholder consultation for the project as a whole is carried out in accordance with the stakeholder consultation plan.

2.1.6 Meetings have been held with area maintainer to discuss design, construction, maintenance and operation considerations. Separate meetings have been held with the local highway authority. The project team has also engaged with Highways England Operations Directorate (OD) to gain a valuable insight into the operational and maintenance challenges which are currently being faced on this part of the strategic road network, and the influence of key stakeholders.

2.1.7 Consultation with other Highways England Major Projects has been undertaken indirectly via the area maintainer and OD. Key issues and challenges faced by the scheme have been subject to review by Operations Technical Leadership Group.

2.1.8 The details of the Outline Traffic Management Plan that would be specific to the Scheme are detailed in Table Error**! No text of specified style in document.**-1 along with how the Scheme aims to achieve these principles in order to improve customer satisfaction.

Table Error! No text of specified style in document.**-1: Scheme Specific Customer Requirements for the OTMP**

Customer Group	Who is affected by this scheme	What are their requirements?	How has the OTMP taken these into account?
Customer	All motorists	Better integration with other roadworks	• All works will need to be carefully planned and co-ordinated to minimise disruption and avoid potential conflicts. • Closure clashes – not having closures on alternative routes that are subject to diversions. • Scheme to be included in HE's monthly area national conference call to discuss potential cross-boundary issues with roadworks and rerouting.
		Manage incidents to improve journey reliability.	Provision of vehicle recovery service to recover vehicles that have stopped within the road works.
		Find ways to deliver projects quicker	• Prioritise activities within the Works to complete sections of road works and opening to traffic as soon as is practicable in order to secure tangible benefits to customers as early as possible. • TM to be removed where possible during embargo periods • Where TM cannot be removed during embargo periods, the construction of the Scheme should maintain existing productivity • The Contractor shall assess whether it is reasonably practicable to remove TM on sections where no construction work is being undertaken.
		Shorten the length of 'live' roadworks	TM to be limited to this length where possible to minimise the length of the disruption to strategic road movements.
		Widen 'narrow' lanes	• Narrow lanes are to be used due to nature of works. • Narrowed lanes to be kept to the pre-agreed widths throughout construction to maintain space for traffic.

Customer Group	Who is affected by this scheme	What are their requirements?	How has the OTMP taken these into account?
		Vary speed limits	• Where possible road works will be designed so that they are adequately safe at the permanent speed limit • Consideration to be given to the opportunity to vary the speed limit during periods where work is not being undertaken.
		• Improve line demarcation. • Improve varioguard visibility. • Explore options for temporary lighting.	Consideration to be given to these items by the Contractor as part of Stage 5 – construction preparation.
		Give more advance notice.	A minimum of four weeks' notice will be provided at the roadside.
		Use more billboards to display reasons and timescales for the works.	Billboards to be provided on the scheme at the start of works.
		Use electronic signage (preferred by customers and tends to be trusted as more up-to-date.)	• Variable Message Signs should be used to post an advance notice of the closure. • Suitable temporary replacement signage should be provided so that there is no reduction in the level of service provided to the customer.
		Use travel time variable message signs.	Travel time variable message signs to be provided to communicate both the time and distance to the end of roadworks.
		Design a progress-o-meter.	The scheme shall incorporate the use of a progress-o-meter to update customers about overall progress via signage within roadworks (and through other media).
		• Widen local communications and outreach. • Use multiple media channels, regularly.	Consideration to be given to these items by the Contractor as part of Stage 5 – construction preparation.

Customer Group	Who is affected by this scheme	What are their requirements?	How has the OTMP taken these into account?
		• Adopt impactful messages. • Explain no activity.	
		• Organise a customer reality-check of new traffic management.	• Early drive through new traffic management and regular patrolling to be undertaken to spot issues, improvements, behaviours and any unintended consequences.
		• Collect and monitor customer experience.	• The scheme will aim to seek and act on feedback from customers regarding traffic management measures.
		Complete the feedback loop.	Information to be provided to show how customer input has influenced delivery as well as highlighting benefits when these are realised
	HGVs	• Appropriate diversion routes. • Maximised lane widths where possible.	• Diversion routes avoid narrow roads and low bridges. • Narrow lanes to be used due to limited space and consideration to be given to maximising the available space for traffic.
	Disabled car driver	Method of recovery that is suitable for passengers with reduced mobility (PRM) and their vehicles.	Recovery vehicles are wheelchair accessible.
	Bus/Coach Services	• Advance warning of closures and/or diversions. • Appropriate diversion routes. • Maximised lane widths where possible.	• Advance warning of closures and diversion routes that would affect bus routes in order to pass information on to customers. • Diversion routes avoid narrow roads and low bridges. • Narrow lanes to be used only where essential and consideration to be given to maximising the available space for traffic.
	Walkers and cyclists	• Advance warning of closures and/or diversions. • Appropriate diversion routes provided.	Diversion routes to consider the needs of walkers and cyclists to ensure that routes are maintained at all times.

Customer Group	Who is affected by this scheme	What are their requirements?	How has the OTMP taken these into account?
Stakeholder	Staffordshire County Council	• Pre-liaison to establish suitability of TM proposals. • Advance warning of closures and/or diversions. • Street Works Permit notifications.	• Liaison to confirm suitable traffic management. • Advance warning and particular sensitivity around significant events, particularly evenings and weekends. • Road space booking • Notify environmental health officer of work outside of normal working hours.
	South Staffordshire District Council	• Pre-liaison to establish suitability of TM proposals. • Advance notice to warn of closures and/or diversions.	• Liaison to confirm suitable traffic management. • Advance warning and particular sensitivity around significant events, particularly evenings and weekends
	Highways England – Network Operations	• Set advance warning and alternative route signing remote from the Works. • Programme maintenance operations of other parts of their Trunk Road. • Emergency diversion routes. • Manage routes and provide directions for abnormal loads.	• Liaison to confirm suitable traffic management. • Advance warning and particular sensitivity around significant events, particularly evenings and weekends • Road space booking.
	Statutory Undertakers	Statutory Utility companies to be able to undertake regular maintenance of their equipment during the Works.	Keep local highway authorities informed.
Partner	Emergency Services	• Suitable diversion routes. • Advance warning of closures and/or diversions.	• Process and procedure for allowing blue-light travel through the works/haul road. • Diversion routes avoid narrow roads and low bridges. • Sufficient notification of closures.
	Suppliers	• Clear route for ease of delivery and Journey time reliability to site. • Suitable access and egress.	• Manage haul roads to facilitate site deliveries. • Access and egress points clearly marked and close to delivery site.

Customer Group	Who is affected by this scheme	What are their requirements?	How has the OTMP taken these into account?
Community	Local Residents	• Advance warning of closures and/or diversions. • Sensitivity to local requirements e.g. peak time traffic. • Minimal disruption due to works, including environmental factors (e.g. noise, dust, lighting) and diversion routes.	• Notification and liaison with individuals and/or local group representatives. • Night time closures and activity curfews where possible to minimise disruption. • Diversion route signs and information to meet driver requirements and optimise usability to reduce opportunities for error and therefore reduce congestion.

2.2 Nature of Works

2.2.1 The Scheme would provide a strategic link between the M54 Junction 1 and M6 Junction 11. From south to north the main components of the Scheme are:

- Replacement of the existing M54 Junction 1 with free-flow slip roads between the new link road and the M54. This would allow the free-flow of traffic between the M54 and the new link road in both directions and maintain connectivity with the existing local road network, via three new roundabouts.
- Construction of a new dual carriageway between M54 Junction 1 and the M6 Junction 11. The alignment of the carriageway would be located to the east of the existing A460 and the villages of Featherstone, Hilton and Shareshill and west of Hilton Hall.
- Dark Lane would be stopped-up between the final property and the junction with Hilton Lane.
- The realignment of Hilton Lane on a bridge over the mainline of the Scheme. The bridge would be reconstructed on a similar alignment and would provide sufficient clearance for the new road.
- Provision of an accommodation bridge and access track across the mainline of the Scheme to retain access to severed land to the east of the Scheme. The route of the new link road would then continue north to the east of Brookfield Farm to link into the M6 Junction 11.
- Enlargement of the M6 Junction 11 signalised roundabout to accommodate a connection to the new link road and realign existing connections with the A460 and M6. Two replacement bridges would be required over the M6 to provide an increase in capacity from two lanes to four lanes of traffic on the roundabout. This work would raise the height of the junction by approximately 1.5m.

2.2.2 The target set by Highways England is to construct the scheme over a period of three years. This has been determined with the input of the Buildability Advisor. This duration will need to be reviewed as the construction planning stages are developed.

2.2.3 The majority of the Scheme is to be constructed offline however at the tie in areas at M54 Junction 1 and M6 Junction 11 the buildability advisor has proposed the following possible traffic management proposals.

2.2.4 The following sections outline an examples of traffic management proposals for the construction of both the Junctions and the closure of Dark Lane. There are a number of factors in the current proposals which require development through the detailed design phase which could impact on these proposals. These proposals aim to outline how the scheme could be constructed and the impact during that period, the final traffic management proposals will be developed through the detailed design of the scheme.

M54 Junction 1

2.2.5 The first stage of construction will be to widen the existing M54 Junction 1 West Facing slip roads, this is assumed to be done with hard shoulder working and the possibility of narrow lanes on the slip roads.

2.2.6 A new structure B02 is required on the M54 at Junction 1 to allow the new free-flow slip roads and dual carriageway link roads to pass underneath. This is proposed to be constructed in three phases as follows:

- Phase 1 as shown on drawing VTMSL-CN203-M54-DN-001 (Appendix E) to allow the construction of cross over areas on the M54 consists of the following temporary works and traffic management.
  - M54 Westbound carriageway on a temporary alignment running on the hard shoulder with a speed reduction to 50mph and narrow lanes (from mp 1/9 to mp 3/8 = 1.9km)
  - M54 Mainline Eastbound carriageway running as a single lane with a speed reduction to 50mph and narrow lanes (from mp 3/5 to mp 2/2 = 1.3km), other M54 lane to be taken off at M54 Junction 1 diverge, around circulatory carriageway and back on M54 Junction 1 merge
  - M54 Eastbound Diverge slip road running as two lanes and Eastbound Merge slip road to be two lanes with free-flowing onto the M54
  - Temporary Traffic signals installed at end of M54 Eastbound Off Slip to improve capacity for vehicles being diverted around circulatory
- Phase 2 as shown on drawing VTMSL-CN203-M54-DN-002 to allow the construction of the southern half of the M54 Structure consists of the following temporary works and traffic management:
  - M54 Westbound carriageway moved into contra flow arrangement on north side of M54 (from mp 3/5 to mp 2/6 = 1.1km), speed reduction of 50mph and narrow lanes retained
- Phase 3 as shown on drawing VTMSL-CN203-M54-DN-003 to allow the construction of the northern half of the M54 Structure consists of the following temporary works and traffic management:
  - M54 Eastbound and Westbound carriageway contra flow arrangement moved to south side of M54 (from mp 3/5 to mp 2/6 = 1.1km), speed reduction of 50mph and narrow lanes retained

2.2.7 In parallel with the construction of structure B02, the majority of M54 Junction 1 dumbbell arrangement (Featherstone Interchange) will be constructed offline. Once structure B02 is completed the traffic management along the M54 will be lifted and the M54 will be returned to free-flowing arrangement at the permanent speed limit.

2.2.8 A temporary alignment of the M54 Junction 1 circulatory carriageway will be retained on the southern side of the M54 to allow local traffic on the A460 to head north under then M54. Southbound A460 traffic will be diverted around the new dumbbell junction arrangement. This will allow the construction of the free-flow slip roads and dual carriageway under the M54 including section of the southern roundabout.

2.2.9 The final phase will utilise localised traffic management to complete the southern roundabout, infill the old M54 Junction 1 structures and complete any other final works to the Junction.

M6 Junction 11

2.2.10 It is proposed to construct M6 Junction 11 in 4 phases as follows:

- Phase 1 as shown on drawing VTMSL-BAM-DIP-CN203-05 consists of the following temporary works and traffic management:
  - The geometric design of M6 Junction 11 allows the majority of the junction to be constructed offline, these include each corner quadrant of the circulatory carriageway and the realigned M6 slip roads. The junction is anticipated to function as per the existing scenario in this phase with only localised traffic management to allow access and egress from works and provide protection to the works force adjacent to the carriageway.
  - Tie in works of slip roads and entry arms to be completed under lane closures and / or carriageway closures as required.
  - Mill Lane to be closed at the Junction with the A460, diversion route will be Church Rd & School Lane then onto Sarendon Road and back on to Mill lane.
- Phase 1A as shown on drawing VTMSL-BAM-DIP-CN203-06 consists of the following temporary works and traffic management:
  - In order to provide sufficient buffer to the work zone, hard shoulder closures will be implemented on the northbound and southbound carriageway of approximate 700m in length. There will be no change in Speed limit or lane markings along the M6.
- Phase 2 as shown on drawing VTMSL-BAM-DIP-CN203-07 consists of the following temporary works and traffic management:
  - Traffic will be diverted onto the newly constructed slip roads and a temporary road construction to allow all movements to be retained. The existing circulatory carriageway will still be used during the construction of the new structures over the M6.
  - In order to provide sufficient buffer to the work zone for the construction of the new structures over the M6, narrow lanes will be implemented on the northbound and southbound carriageway of approximate 2.0km and 2.3km in length respectively. The speed limit will also be reduced temporarily to 60mph. In the southbound direction the narrow lanes

system will start at the end of hard shoulder hatched area after split with M6/M6 Toll, this system with no impact to the M6Toll traffic and terminate at the M6 Junction 11 southbound slip road merge. In the northbound direction the narrow lanes system will start between exit and entry slip of Hilton Park services and terminate at the M6 Junction 11 northbound slip road merge.

  - It is anticipated that overnight road closure of the M6 will be required for the installation of the new bridge deck with traffic being diverted up and over M6 Junction 11.

- Phase 3 as shown on drawing VTMSL-BAM-DIP-CN203-08 consists of the following temporary works and traffic management:
  - Once the new structures over the M6 are completed traffic will be diverted onto these to make the new interchange now fully operational minus the link road. Small pockets of work to be carried out under localised traffic management.
  - Narrow lanes along the M6 will be removed and returned to existing alignment, hard shoulder closure will be re-implemented on the northbound and southbound carriageway. The M6 will be returned to the permanent speed limit.
  - Demolition of the existing structures at M6 Junction 11 is anticipated to require a full weekend closure on both carriageways. Diversion route for M6 traffic is to be confirmed.

Dark Lane Closure

2.2.11 The existing traffic signal-controlled junction at the A460/New Road/Dark Lane crossroads has a right turn ban on the movement from A460 South to Dark Lane west. This displaced movement is served by the A460, Hilton Lane and Dark Lane (north).

2.2.12 Upon closing Dark Lane in order to construct the relevant length of the Scheme, the right turn ban at the A460/New Road//Dark Lane traffic signals will need to be removed so that residents of Hilton can gain access to their homes when approaching from the A460 South. However, during the construction period, it is unlikely that these traffic signals could be reconfigured whilst the existing A460 traffic demands are travelling through the junction.

2.2.13 The timing of the Dark Lane closure and treatment of the A460/New Road/Dark Lane traffic signals will need to be considered in more detail during the construction preparation stage.

Site Compound

2.2.14 Appropriate access routes to site compounds for people, plant and material will be evaluated with the local Highways Authority to ensure that movements are restricted to appropriate routes to minimise local disruption. As part of their input to the development of the project, the buildability advisor has identified two locations for temporary site compounds.

2.2.15 The main compound be situated on the plot of land to the north west of the M6 junction 11, access being gained from Mill Lane.

2.2.16 Due to the intensity of work at the M54 junction 1 a secondary site is considered necessary to service these works. An area of land to the north of the new link road dumbbell roundabout, to the east of the existing A460 and south of Hilton has been confirmed as being available with access being gained from the A460 Cannock Road. An access onto the alignment of the new link road will also be formed to allow direct access to the works.

2.3 Core Hours

2.3.1 During the Scheme's construction phases, the project-wide core working hours are defined in Table 2-2 below.

Table Error! No text of specified style in document.**-2: Core Working Hours**

Works	Working Hours
All works including earthworks	08:00 – 18:00 Monday to Friday 08:00 – 13:00 Saturdays with no working on Sundays and Bank Holidays Exceptions to these core working hours are detailed in the paragraphs below

2.3.2 To maximise productivity, a period of up to one hour before and up to one hour after normal working hours would be used for start-up and close down of activities. This would include, but not be limited to, deliveries, movement to place of work, unloading, maintenance and general preparation works. These periods would not be considered an extension of core working hours.

2.3.3 The Regional Intelligence Unit (RIU) will be consulted to provide Working Windows in order to inform the timings of lane closures to ensure minimum delays for road users and maximum working times for the project.

2.3.4 Some activities with limited durations would be undertaken outside of the core working hours, namely:

- Night-time closures for bridge demolition;
- Junction and slip-road tie in works;
- Installation of bridge decks;
- Installation of sign gantries;
- Installation of temporary and permanent line markings;

- Overnight traffic management measures – as agreed with the Local Authority in advance;
- Any emergency works;
- Works associated with traffic management and signal-control changes.

2.3.5 Any other work carried-out outside of the core working hours, or any extension of the core hours, may be possible with the prior agreement of the environmental health officers (as applicable) and agreed with all relevant parties so long as the activity is demonstrated to be not environmentally worse than the activities that have been assessed within the Environmental Statement.

3 Proposed Traffic Management Measures

3.1 Restrictions

3.1.1 Traffic management shall be carried out in a manner which minimises the need for traffic to divert on to alternative routes, minimises the impact on the local community and minimises delays and disruptions to existing traffic. The contractor shall demonstrate to the satisfaction of those consulted that his traffic management proposals have been developed such that they include all necessary measures to minimise delays, disruptions and diversions to traffic.

3.1.2 During construction, traffic management and capacity restrictions should aim to not cause vehicle delays or queues along the M54, M6 or M6 Toll that extend beyond those currently expected. Areas of the road network that are particularly sensitive to blocking by queues will be identified, in collaboration with the relevant authorities, and measures implemented to resolve the perceived issues.

3.1.3 Any restrictions will be in place 24 hours per day and 7 days per week throughout the duration of the construction of the Scheme. Such restrictions will need to be identified as the construction methods and traffic management phasing and layouts are further developed during the next stage.

Table Error! No text of specified style in document.**-1: Restrictions**

Restriction to be Implemented	**Time of Day** ***(Start to End)***	**Location** ***(Start to End with respect to nearest junction or Marker Posts, if known)***
Night time working restrictions	20:00 – 06:00	Scheme Wide

3.1.4 The Contractor shall comply with the requirements of Chapter 8 of the Traffic Signs Manual (TSM) and any additional requirements detailed in the Design Manual for Roads and Bridges (DMRB).

3.1.5 It is anticipated that any works that take place on Highways England operated highways that may require full carriageway closures shall be completed under night time working conditions.

3.1.6 Night time working restrictions are generally between 20:00 – 06:00. Working windows will be subject to traffic counts and should be agreed with the overseeing organisation. Further details can be supplied by the Midlands RIU in order to inform the timings of lane closures to ensure minimum delays for road users and maximum working times for the project.

3.1.7 Night time working restrictions for the local road network are to be agreed with the local Highways Authority.

3.1.8 Traffic management may be limited by proposed business developments in the vicinity of the scheme some of which operate 24/7 businesses, as such full closures should be minimised where possible.

3.1.9 Where it is intended for road works to be left in place for some time without any construction works being undertaken e.g. a weekend, the contractor shall assess whether it is reasonably practicable to remove the TTM equipment during this period. If not, then it is considered reasonably practicable for the contractor to continue construction works instead.

3.2 Operating Lanes

3.2.1 A minimum of 3 lanes will be maintained in both directions along the M6 at all times, with the exception of when full carriageway closures are planned.

3.2.2 A minimum of 3 lanes will be maintained along the M54 at all times (i.e. 1 lane in one direction, 2 lanes in the opposite direction), with the exception of when full carriageway closures are planned. The proposal is to reduce the capacity of the M54 in the vicinity of Junction 1 by dropping a lane and diverting traffic in Lane 1 along the slip roads and around the circulatory carriageway. Discussion regarding whether this arrangement is implemented for the east bound or westbound routes is currently ongoing. This layout will need to be agreed with the overseeing organisation ahead of the commencement of works.

3.2.3 Where appropriate, to ensure both road user and road worker safety, the working area in the TTM will be protected by a temporary vehicle restraint system.

3.2.4 Narrow running lanes may be required for the temporary traffic management in order to provide a suitable buffer to the work zone. Lane widths are to be suitable for HGV's and in accordance with Chapter 8 of the TSM and any additional requirements detailed in the DMRB guidance.

3.2.5 Where narrow running lanes are proposed consideration should be given to maximising the available space for traffic and widening non-standard/temporary lanes within roadworks in order to improve customers experience and safety.

3.2.6 Consideration should be given by the contractor during Stage 5 – construction preparation to the following to improve customer experience:

- Improve demarcation of temporary lines, especially at night/in bright sunlight.
- Improve the visibility of the varioguard, especially in narrow lanes.
- Consider using temporary lighting during roadworks to improve the visibility of lanes and the varioguard.

3.2.7 Partial closures will be required on the local road network. This will require the operation of a two-way signalling system to control traffic flow with the addition of a manual override to ensure that traffic does not back up onto priority routes. Partial Closures shall ensure that one lane is always maintained suitable for HGV's.

3.2.8 During full overnight closures, traffic will be diverted along suitable routes agreed ahead of the works. Therefore, the operating lanes will be adequate for the types of vehicles that typically use the affected carriageway.

3.2.9 Public Rights of Way (PROW) will be maintained throughout the construction period. Some of the PROWs will require minor diversions, these will be suitable and appropriate where implemented.

3.3 Speed limits

3.3.1 In line with the Dynamic Roadworks Vision, where possible road works will be designed so that they are adequately safe at the permanent speed limit, in accordance with TSM, Chapter 8, Part 3.

Table Error! No text of specified style in document.**-2: Speed Limits**

Speed Limit	Location (Start to End with respect to nearest junction or Marker Posts, if known)	Justification for Speed Limit
50mph	M54	Narrow running lanes and running of the hard shoulder may be required in order to provide a suitable buffer to the work zone.
60mph	M6	Narrow running lanes and running of the hard shoulder may be required in order to provide a suitable buffer to the work zone. There is an opportunity to utilise the existing Active Traffic Management infrastructure to vary the speed limit however further discussions are to be held to discuss the logistics and practicality of implementing such measures.
TBC	Local Road Network	Where local diversions onto temporary alignments under traffic management conditions are required, a temporary reduction in speed limit may be necessary. Further details are to be provided by the Contractor once the alignment and phasing of temporary routes is known.

3.3.2 In order to minimise disruption, the scheme should aim to use variable speed limits to better reflect road conditions and the level/nature of current activity along the M54. Findings from the 60mph roadworks trial indicated that it is considered acceptably safe to roll out a 60mph speed limit under the following scenarios, however consideration should be given to the latest standards and guidance ahead of the start of construction:

- Implementation of a 60mph speed limit on lead-in and exits to/from the works
- Changing the speed limit throughout the works during a period when there were no road workers present

3.3.3 All the details regarding temporary speed limits should be agreed with the Local Police Authority and the overseeing highway authority for that road.

3.4 Length of Traffic Management Measures

3.4.1 In accordance with the Dynamic Roadworks Vision, the temporary traffic management along the M54 and M6 is anticipated to be kept to the minimum in order to minimise disruption to the network. The works along the M54 and M6 are anticipated to be restricted to less than 4km as specified in Chapter 8 of the TSM.

Table Error! No text of specified style in document.**-3: Length of Traffic Management**

TM Length	Location *(Start to End with respect to nearest junction or Marker Posts, if known)*	Duration
1.9km	M54 Junction 1	TBC
2.3km	M6 Junction 11	TBC

3.4.2 It is anticipated that the construction of M54 Junction 1 and M6 Junction 11 will be undertaken in parallel in order to reduce the construction period of the scheme. Due to the distance between the M54 Junction 1 and M6 Junction 11 is not feasible to achieve 4km separation between works sites along the A460 in accordance with Chapter 8 of the TSM.

3.4.3 The maximum length of all other proposed works sites shall be restricted to 4km in accordance with Chapter 8 of the TSM.

3.5 Carriageway and Slip Road Closures

3.5.1 Whilst full road closures are unavoidable on major schemes, in accordance with the Dynamic Roadworks Vision, measures have been taken to minimise their impact, as full closures are a significant source of customer frustration.

3.5.2 Any full carriageway and slip road closures will be agreed in advance with the Highway Authority and information on the closure will be advertised well in advance.

Table Error! No text of specified style in document.**-4: Carriageway Slip Road Closures**

Type of Closure *(Slip road / Full carriageway)*	**Location** *(Start to End with respect to nearest junction or Marker Posts, if known)*	**Time of Day** *(Start to End)* **/ Stage in Programme**	**Closure Details**
Full Carriageway	M54	Night Closure	implement the traffic management phases
Full Carriageway	M54	Night Closure	install new gantries
Full Carriageway	M6	Night Closure	implement the traffic management phases
Full Carriageway	M6	Night Closure	lift the new bridge deck structure into place
Full Carriageway	M6	Weekend	to demolish the existing structures at M6 Junction 11

3.6 Hard Shoulder Running

3.6.1 Through the construction of the motorway junctions, there may be the requirement to utilise the existing road Hard Shoulder running for periods during construction of the new junction arrangements.

Table Error! No text of specified style in document.**-5: Hard Shoulder Running**

Hard Shoulder Running Location *(Start to End with respect to nearest junction or Marker Posts, if known)*	**Time of Day** *(Start to End)* **/ Stage in Programme**	**Hard Shoulder Running Details**	**Justification**
M54 Junction 1	TBC	TBC	Narrow running lanes and running of the hard shoulder may be required in order to provide a suitable buffer to the work zone.
M6 Junction 11	TBC	TBC	Narrow running lanes and running of the hard shoulder may be required in order to provide a suitable buffer to the work zone.

3.7 Adjacent Roadworks and Other Traffic Management arrangements

3.7.1 Other traffic management arrangements and roadworks in the area will need to be coordinated. The local highway authority operates a Street Works Order Permit Scheme under the Traffic Management Act 2004.

3.7.2 Other major development or infrastructure schemes in surrounding area, if any, will need to be documented during the next development stage and considered when developing the next version of this Outline Traffic Management Plan and in consultation with the stakeholders (as stated in the communication plan).

3.7.3 There is the possibility that a number of other Highways England Major Projects will be under construction at the same time therefore have the potential to impact on the scheme arrangements. Liaison between the Major Project schemes will need to continue throughout construction process in order to minimise disruption and avoid potential conflicts.

Table Error! No text of specified style in document.**-6: Adjacent Roadworks and Other Traffic Management**

Nearby Traffic Management Location	Distance from Project	Interaction with Diversion Route(s)	Duration	Contact Details	Road Spacing Compliant?
M6 Junction 10		TBC	TBC	TBC	TBC
i54 Western Extension		TBC	TBC	TBC	TBC
West Midlands Interchange		TBC	TBC	TBC	TBC

3.7.4 Development currently anticipated in proximity of the Scheme are as follows. Schemes shown could impact on the proposed traffic management during construction:

- M6 Junction 10 – Improvement works for the M6 Junction 10 are currently planned to commence in 2019/2020, construction currently planned for completion in the Summer of 2022. Works include the reconstruction of both bridges crossing the M6 and realignment of the slip roads at the junction. Traffic management will be required along the M6 through Junction 10 through construction.
- West Midlands Interchange – Scheme currently going through the DCO with final decision expected in February 2020. The timescales for the project are currently unclear, however it is possible that construction of the West Midland Interchange may occur at the same time as the M54 scheme. Works will involve the construction of a roundabout along both the A5 and the A449 which are both the current signed route between the M54 and M6
- i54 Western Extension – The western development to the i54 is located west of M54 Junction 2. Planning was granted in January 2019 and construction of the Highways access will connect into the existing junction off network and should have minimal impact on the strategic network.

3.7.5 Public utility companies may also need roadworks to maintain their equipment, and some work by the public utility companies will be required to deliver this Scheme. Liaison will be required in advance of start of works and will need to continue throughout construction process.

3.7.6 Subsequent versions of the Outline Traffic Management Plan will describe the interactions with stakeholders and the sponsors of any other schemes and describe how these will be addressed.

3.8 Bank Holidays

3.8.1 For each year of construction there will be several observed bank holidays in England, these are listed in Table 3-7 below. The impact of these bank holidays upon possible working restrictions will be developed further in Stages 4 & 5.

Table Error! No text of specified style in document.**-7: Observed Bank Holidays in England During Construction**

Holiday	Observed Date During Each Construction Year			
	2021	**2022**	**2023**	**2024**
New Year's Day	1st Jan	3rd Jan	2nd Jan	1st Jan
Good Friday	2nd Apr	15th Apr	7th Apr	29th Mar
Easter Monday	5th Apr	18th Apr	10th Apr	1st Apr
Early May Bank Holiday	3rd May	2nd May	1st May	6th May
Spring Bank Holiday	31st May	30th May	29th May	27th May
Summer Bank Holiday	30th Aug	29th Aug	28th Aug	26th Aug
Christmas Day	27th Dec	27th Dec	25th Dec	25th Dec
Boxing Day	28th Dec	26th Dec	26th Dec	26th Dec

3.9 Significant Events and Seasonal Traffic

3.9.1 Consideration should be given to the phasing of works around any significant events in order to minimise disruption. In addition, the provision of key information and links to further up-to-date information on ongoing improvement works would further reduce disruption. The impact of these events upon possible working restrictions will be developed further in Stages 4 & 5.

Table Error! No text of specified style in document.**-8: Significant Events and Seasonal Traffic**

Event	Implications with TM	Proposed Mitigation Measures
Sports Events – Wolverhampton Wanderers Football Club	Could attract extra trips to the area and put pressure on the local road network	TBC
Other known events, that are not specific to Scheme; Black Friday and Cyber Monday, etc	Could attract extra trips to the area and put pressure on the local road network	TBC

3.10 Incident Management

3.10.1 The contractor should develop the Incident Management Strategy accordingly with the company policy and safety standards. This will include the preparation of a 'Severe Weather & Incident Management Plan'

3.10.2 Vehicle recovery services will be maintained, as part of the Construction Contract, to minimise the duration of incidents and restore the smooth flow of traffic. Targets should be set for the recovery of vehicles along with definitions of the limits of the proposed services and specifics relating to their operation.

Table Error! No text of specified style in document.**-9: Incursion Risk Management**

Incursion Risks	Proposed Control / Mitigation Measures
Intentional Incursion where; • the road user seeks to gain a benefit • the road user is seeking information. • the road user is seeking refuge. Unintentional incursion where; • a road user follows a works vehicle into the works in error, also known as a follow in. • a road user enters the works area as a result of confusion. • a road user enters the works area or traffic management as a result of a collision or to avoid a collision.	It is anticipated that the following mitigation measures could be used by the Contractor to minimise the opportunities for incursion as a result of driver error: • Use of 'Airlock' System for TM on full carriageway closures • Workforce education on the safe access into the works area to prevent the likelihood of 'follow ins' • Increased awareness of entry and exit points, achieved by the use of larger signs & more advance works access signs • Works accesses should not be sited where the public could be misled. • Road closures and diversions should be minimised where possible and the suitability of the diversion is to be considered. The longer the diversion route the more likely frustrated motorists will be to attempt a vehicle incursion to avoid a lengthy route. • Provision of suitable advance warning of closures including use of Variable Message Signs • Provision of temporary vehicle restraint barrier reduces the likelihood of an unintentional incursion into the works area as a result of a Road Traffic Collision • An effective recovery system should be implemented with regular signing to inform the motorist that they will be recovered free of charge. • Provision of enhanced technology to assist in either the identification of intentional incursions which will enable the enforcement of a road closure and allow for possible prosecution of offenders. This could include enhanced CCTV or body worn cameras. • Strategically placed works vehicles with livery similar to that used by the Safety Camera Partnerships to add a deterrent to road users committing a wilful incursion into the work area. • All TM operatives placed at entry points should be issued with working video recording equipment, this will act as a deterrent and aid with enforcement. • Traffic management should be patrolled at regular intervals for the duration of the works to identify areas of coning that have been displaced may lead some motorists to enter the traffic management in error. • To enable the industry to monitor the effectiveness of the measures used to eliminate or reduce vehicle incursions, all incursions should be reported and entered onto the AIRSWEB system.

3.10.3 Temporary surveillance CCTV will be employed to monitor for incidents and broken-down vehicles and a free breakdown recovery service will also be available.

3.10.4 Incidents where vehicles have struck or displaced traffic management equipment or entered the works area shall be recorded. This will allow the traffic management design to be reviewed and altered, if appropriate, to maintain the safety of drivers and workers.

3.11 Incursion Risk Management

3.11.1 Traffic Management includes risk management and those in control of workplaces have a duty to identify hazards, assess risks and consider means to control the risk exposure. Traffic management planners need to detail and consider potential hazards associated with both safety issues and the performance of the road network. In the paragraphs below, the issues that should be considered while analysing the hazards during the construction works on the Scheme.

3.11.2 Consideration has been given to managing the risk of incursion on the network in accordance with “Raising the Bar 27: Managing temporary traffic management incursions” https://www.gov.uk/government/collections/health-and-safety-for-major-road-schemes-raising-the-bar-initiative). It is considered that the proposed TM measures on the network have the potential to increase the risk of incursion risk as identified in below.

3.12 Driver Compliance

3.12.1 Compliance should be discussed with the Police to agree procedures for enforcement where necessary. Further details will be provided by the Contactor in Stages 4 and 5, including the potential use of Temporary Automatic Speed Camera System (TASCAR) including an average speed measuring system.

3.12.2 There is a possible opportunity to utilise the existing Active Traffic Management infrastructure along the M6 to encourage driver compliance with speed limits.

3.12.3 A TTRO will need to be made by Highways England for each reduction in speed limit.

3.12.4 Consideration should also be given by the contractor to the use of strategically placed works vehicles with livery similarly used by the Safety Camera Partnerships to add a deterrent to road users committing a wilful incursion into the work area.

3.13 Communication Plan

3.13.1 At this stage in design it is anticipated that advance notification will be provided prior to start of works and any restrictions/closures via the following platforms:

- Announcement on local and regional radio
- Notices in local papers
- The Regional Operations Centre;

- Emergency Planning Team;
- Blue Light First Responder Community;
- Highways England Digital Channels via the 'Roadworks' tab of each scheme's project webpage and via the Traffic England webpage - information comes from road-space booking system, 'Network Occupancy Management System' (NOMS). 'Accurately updating NOMS and our digital channels' provided further information and guidance.
- Advance warning signs and scheme information boards at the road side on affected routes in accordance with TSM Chapter 8 (a minimum of four weeks in accordance with 'Roadworks – A Customers View')
- Temporary Variable Message Signs (VMS) should be used to post an advance notice of the closure, these signs have a greater impact over more traditional methods of signing and but should only be used in conjunction with and not instead of traditional signs. The use of VMS signs is particularly recommended where a closure might affect traffic wishing to access a mainline railway station or airport outside normal working hours. If such signs are not available, mobile signs should be used; and
- Additional advance warning is to be provided to key Stakeholders in the vicinity of the scheme that may be affected by the works via the following platforms with particular sensitivity around significant events and holidays

3.13.2 The scheme will aim to seek and act on feedback from customers regarding traffic management measures. This information will be used by the Contractor alongside other sources of evidence and insight to continuously improve traffic management on the Scheme.

3.13.3 During the development of the detailed communication plan for the Scheme consideration should be given to improve engagement with customers by:

- Widening the catchment area, going beyond those immediately impacted and reaching those living along diversion routes and at local commuter hubs;
- Up-to-date information should be provided frequently via multiple methods including social media and roadside signage;
- Periods where no visible activity is undertaken should be explained with clear signage to reduce frustrations from road users;
- Information should be provided via signage within roadworks (and through other mediums) to show how customer input has influenced delivery as well as highlighting benefits when these are realised

3.13.4 Notice of any TM restrictions should be advertised in local papers with announcements on local and regional radio prior to the start of works including any restrictions and closures.

3.13.5 The following measures will be adopted by the scheme in order to keep customers informed of progress on the scheme and improve the customer experience through roadworks or overall customer satisfaction:

- In order to provide a higher level of customer experience through the roadworks it is anticipated that suitable temporary replacement electronic signage should be provided by the contractor to mitigate against any signage that is temporary unavailable throughout the duration of the construction work, so that there is no reduction in the level of service provided to the customer.
- In accordance with MPI 48, billboard signage should be provided to communicate scheme information. Billboards should be located at the start of works and repeated after every junction to improve their effectiveness.
- In accordance with MPI 54, portable travel time variable message signs should be used repeatedly throughout the length of the traffic management, to communicate both the time and distance to the end of roadworks.
- The scheme shall incorporate the use of a progress-o-meter to update customers about overall progress via signage within roadworks (and through other media). This should be allied to updates on key milestones and what has been completed.

3.13.6 During the development of the detailed communication plan for the scheme consideration should be given to improve engagement with customers by:

- Widening the catchment area, going beyond those immediately impacted and reaching those living along diversion routes and at local commuter hubs
- Up-to-date information should be provided frequently via multiple methods including social media and roadside
- Periods where no visible activity is undertaken should be explained with clear signage to reduce customer frustrations
- In addition to factual information about the scheme, message which resonate positively with customers (meeting local priorities, delivering safety benefits and reducing disruption to customers).
- Information should be provided via signage within roadworks (and through other media) to show how customer input has influenced delivery as well as highlighting benefits when these are realised

3.14 Diversion Routes Selection

3.14.1 All diversions routes should be assessed for suitability for the traffic being diverted, especially where motorway traffic is diverted off of the Strategic Road Network. All diversion routes should be in agreement with the overseeing local authority and key stakeholders. Appropriate traffic management must be agreed and in place prior to works commencing.

3.14.2 Details of emergency diversion routes are available via the Area Maintainer. It is anticipated that similar routes would be used for any works requiring full closure of the M54 and M6.

3.14.3 Any signed diversion routes must be agreed with the Area Maintainer and the appropriate Local Highway Authority and other key stakeholders will be consulted.

Table Error! No text of specified style in document.**-10: Diversion Routes**

Diversion Route	Location	Signs	Length of Diversion	Duration of the Diversion	Additional Journey Time	No. of Closures required
TBC						

3.15 Safety Measures

3.15.1 The overall Traffic Management Plan is designed and intended to specify adequate safety measures in advance against identified hazards to ensure safe movement of traffic during the construction of the Scheme.

3.15.2 At this stage of the design it is anticipated that the following scheme specific measures provided in the TM design will include, but not limited to:

Table Error! No text of specified style in document.**-11: Safety Measures**

Customer Group	Safety Measure
All Users	Speed restrictions - the implementation of a reduced speed limit will reduce the risk of accidents.
All Users	Temporary vehicle restraint barrier will be used as a protection for both road users and road workers to ensure their safety.
All Users	Temporary Signs in work zone - Drivers shall be informed in advance about the construction works with associated speed restrictions and about the presence of workers in the carriageway.
All Users	Temporary Road markings will separate the construction zone and live traffic and the implementation of a reduced speed limit will reduce the risk of accidents.
All Users	Enforcement measures will reduce the risk of non-compliance with temporary traffic management
All Users	Provision of Variable Message Signs to communicate advance warning of closures and keep users informed of progress, this will reduce the risk of driver error and driver frustration.

Customer Group	Safety Measure
All Users	Road safety audits will be undertaken of the Temporary Traffic Management, once these have been developed in more detail. Any recommendations should be implemented.
Road Works	The temporary traffic layout shall aim to eliminate the risk associated with reversing operations. Where reversing is unavoidable, the Contractor will undertake a suitable risk assessment which could include the use of Banksman or other mitigation strategies.

3.16 Human Factors

3.16.1 Once new traffic management is in place, an early drive through should be undertaken to spot issues, improvements, behaviours and any unintended consequences. In addition, traffic management should be patrolled at regular intervals for the duration of the works to monitor behaviour and provide improvements to customer experience.

3.16.2 All decisions and discussions made as part of the development of the TM design by the Contractor should incorporate human factors principles and best practise in relation to all customer groups and across the phases of work covered by the OTMP on the scheme to inform key decisions in the development of the TM design.

3.16.3 The Temporary Traffic Management layout shall start and finish at an appropriate location to avoid potential for driver confusion; for example, shared attention between negotiating junctions and becoming aware of the new TM layout. There is also risk that workers can be injured because they may not be noticed by drivers if TM layouts start on a bend.

4 Proposals for Management of Network Occupancy

4.1.1 The purpose of the Network Occupancy Plan is to set out the approach to manage the area or route network.

4.1.2 Highways England has a legal obligation under Section 59 of the New Roads and Street Works Act 1991 (NRSWA) to use its best endeavours to coordinate the execution of works of all kinds.

4.2 Strategic Road Network

4.2.1 Highways England Network Operations are responsible for the delivery of maintenance of the Strategic Road Network in each area. The Scheme falls within the remit of the Area 9 Asset Delivery Team.

4.2.2 Access will be governed and managed through the road space booking process, the 'Network Occupancy Management System' (NOMS). The Contractor is required to arrange access through the road space booking process. The categories and timescales used by the Asset Delivery Team are detailed within their respective Network Occupancy Management plans.

4.2.3 Information regarding these Occupancies and Activities is used for the purpose of managing conflict on the Area Network by the MSPs and by the National Traffic Operations Centre (NTOC). It is also used to inform customers of any traffic management or carriageway closure that will adversely impact their journey via Highways England's digital channels. The responsibility for ensuring the data quality in NOMS and (in turn) each scheme webpage and Traffic England will rest with Highways England's Project Manager.

4.3 Local Road Network

4.3.1 Access to the Local Road Network will be governed by the local highways authority and managed through their road space booking process. The Contractor is required to arrange access through the road space booking process.

4.3.2 The categories and timescales used are to be confirmed as part of their respective Network Occupancy Management plans.

5 Implications of Traffic Management measures

5.1 Intelligent Transport Service and Operations

5.1.1 It is anticipated that the proposed Traffic Management measures will have implications on the operation of the network for traffic monitoring, data collation and driver information services.

5.1.2 Existing assets and roadside infrastructure within the extents of the scheme that impacts on the operation of the network will need to be removed and relocated to allow the construction of the scheme, these include:

- Strategic Variable Message Signs
- Lane specific Advanced Motorway Indicators (AMIs)
- Fixed Text Message Signs (FTMS)
- CCTV
- Highways England Digital Enforcement Cameras
- Mast mounted Radar Detectors
- Detector loops
- Entry slip signals

5.1.3 Along the M54 and M6, there is the potential that the existing longitudinal communications system will be temporarily interrupted during the construction of the works. This will have implications for the National Traffic Operational Centre, Regional and National Intelligence Unit, Regional Control Centre and Traffic Officer Service.

5.1.4 If the existing technology provisions will be interrupted during the construction works, temporary provisions will be put in place. These temporary provisions will include:

- Temporary CCTV surveillance (monitored from a control room on site)
- Temporary average speed enforcement (SPECS)
- Temporary vehicle recovery service

5.1.5 In order to provide a higher level of customer experience through the roadworks it is anticipated that suitable temporary replacement electronic signage should be provided by the contractor to mitigate against any strategic signage that is temporarily unavailable throughout the duration of the work so that there is no reduction in the level of service provided to the customer.

5.1.6 Measures to mitigate the disruption and impact will need to be agreed between the Contractor and the overseeing organisation ahead of the commencement of any works.

5.1.7 The Contractor will be responsible for the maintenance of all existing and temporary telecommunications and signs equipment located as well as incident management within the extent of the site for the duration of the works.

5.2 Maintenance Activities

5.2.1 It is anticipated that the proposed Traffic Management measures will have implications on the maintenance of the network which will have implications for the Asset Support Contract, Regional Technology Maintenance Contractor, NRTS Contractor and Staffordshire County Council.

5.2.2 Appropriate Stakeholder consultation has taken place with the Maintenance Service Providers (MSPs) throughout the development of the scheme design.

5.2.3 The Contractor shall be responsible for ensuring that any roads with temporary traffic management will be safe for users (including ensuring de-icing operations are undertaken).

5.2.4 The Contractor shall maintain or arrange access for gritters which are 'free travelling' between treatment areas.

5.2.5 Throughout the construction period the Asset Delivery Team shall require access to the carriageway for Winter Maintenance operations. The winter maintenance of footways, cycleways and bridleways will be the responsibility of the Contractor.

5.2.6 The Contractor will be responsible for the maintenance of all telecommunications and signs equipment located within the extent of the site.

5.2.7 Consideration will be given to allow for the maintenance of assets which are in close proximity to the scheme, and those located between the scheme works. Safe points should be provided, where possible, to allow the safe installation of traffic management such as lane closures. This will be refined further at Stage 5.

5.2.8 A Detailed Local Operating Agreement (DLOA) will be developed in liaison with the Asset Delivery Team and the authorities responsible for operational and maintenance activities on the public maintained highway, at PCF Stage 5.

5.3 Other Service Providers

5.3.1 There are currently no known impacts of the Scheme on other service providers.

6 Outline Traffic Management Plan Management

6.1.1 For long term projects, the management of this OTMP should incorporate procedures that involve a formal review of this plan as part of a continuous improvement approach to ensure its continuing suitability, adequacy and effectiveness.

6.1.2 The minimum standards and requirements of Traffic Management will be adhered to, guidelines are set out in the 'Guidance to Safer Temporary Traffic Management'.

6.1.3 The management review process should ensure that sufficient information is gathered over the term of the project to allow management to undertake an effective review.

6.1.4 The OTMP should also contain provision for recording variations to the OTMP, subsequent to obtaining approval and/or during implementation of the OTMP. Such variations should be approved and recorded properly.

Appendix A TM Options Selection

Table A-1 TM Options Selection

TM Option	Details of TM Option	**Advantages** *(including time, cost, customer impact, safety implications, operational impact)*	**Disadvantages** *(including time, cost, customer impact, safety implications, operational impact)*	**Are their further implications or additional TM requirements if this option is selected?**	**Option Selected or Rejected?** *(if selected, colour cell green and if rejected, colour cell red)*
M54 J1	4 Lane Contraflow Arrangement 2 Phase	• Reduced disruption along the M54 as all 4 lanes are kept operational	• Insufficient Safe buffer to work zone without significant temporary works to widen structures	N/A	Rejected
M54 J1	4 Lane Contraflow Arrangement 3 Phase	• Reduced disruption along the M54 as all 4 lanes are kept operational	• Would require 3rd phase working in C/R between 2 lanes of live traffic which is considered to be high risk. Would provide narrow work zone and access and egress to the works would be from the outside lane of the M54.	N/A	Rejected

Appendix B Roadworks Principles

*Table B-1 details the proposed project approach to addressing the Principles identified within Roadworks a Customer View (RACV) and the Roadworks a Customer View Implementation Toolkit. Within the table, the 'proposed approach' is the preferred option which has been selected and the project team is required to communicate the status of the project and activities completed at the current stage. The colour-coded text in the table is an indicator of the level of activities anticipated to have been completed during **PCF Stage 3** and **PCF Stage 5** and should be used as guidance for completing this table. This text is based on best practice within the RACV Implementation Toolkit but should not be considered exhaustive. Within 'Other options considered', project teams should record any discounted options. The RACV Implementation Toolkit should be utilised to provide further guidance regarding best practice for achieving success with regards to each Customer Principle.*

Colour Coding Key

Green activities – Activities for planning, identifying and set up within PCF Stage 3 in anticipation of further detailed works to be undertaken within PCF Stage 5. These activities should also be refined within PCF Stage 5.

Blue activities – Activities to be completed during PCF Stage 5.

Table B-1 Roadworks Principles

		Key Principles	Proposed Approach	Other options considered (rejected/discounted options)
Planning and Design of Traffic Management	1	Other roadworks and improvements	• *TM planned in co-ordination with other projects and areas across the region (Highways England and non-Highways England)* • *Consideration of diversion routes in co-ordination with other projects and areas across the region (Highways England and non-Highways England)* • *Identify local regular forums prepared to review plans for TM* • *Liaison with NOMS representative for works within the area.* • *Co-ordination of diversion routes at key decision points and publication once approved.* • *Identify and mitigate the impact of major events* • *Produce schedule for local regular forums prepared to review plans for TM* • *Signing on local roads to inform of incidents or roadworks on the Strategic Road Network*	N/A

		Key Principles	Proposed Approach	Other options considered (rejected/discounted options)
	2	Speed of delivery	• *Review proposed key design decisions to ensure these can be constructed without significant impact on customers* • *Increasing workforce/shift patterns/productivity to maximise utilisation of the restricted road space* • *Use available technology to minimise impact and maximise productivity* • *Manufacturing components off-site*	N/A
	3	Length of roadworks	• *Phasing of road works delivery* • *Length of road works in accordance with Traffic Signs Manual, Chapter 8, Part 3* • *Suitable traffic modelling of the TM proposals to understand the impact on the customer* • *Formal agreements for road works not in accordance with Traffic Signs Manual, Chapter 8, Part 3 requirements*	N/A
	4	Lane width	• *Consider alternative layout options, including widening non-standard/temporary 'narrow' lanes within roadworks, in design and communication of reasoning to customers* • *Consider contraflow* • *Alternate widths to facilitate traffic flows* • *Smooth road surfaces and clear demarcation during works and after TM has been removed, and ensure sufficient budget is available to maintain this*	N/A
	5	Speed Limit	• *Options considered to maintain the permanent speed limit and why a lower speed limit is required, where applicable* • *Suitable traffic modelling of the TM proposals to understand the impact on the customer* • *Road works designed to be safe for permanent speed limit in accordance with Traffic Signs Manual, Chapter 8, Part 3*	N/A
	6	Line demarcation	• *Removal of white line set within contracts as a standard requirement* • *Use of permanent standard white lines* • *Demarcation for night time/rain/bright sunlight conditions*	N/A

		Key Principles	Proposed Approach	Other options considered (rejected/discounted options)
			• *Night time lighting requirements* • *Regular checking and maintenance*	
	7	Visibility of temporary barrier	• *Good visibility of temporary vehicle barrier* • *Visibility in narrow lanes* • *Improving visibility of temporary vehicle barrier* • *Maintenance of vehicle barrier reflectors*	N/A
	8	Night time visibility	• *Risks and requirements of temporary lighting* • *Improving night time visibility of lanes/temporary vehicle barrier in road works using temporary lighting or through the retention of existing lighting* • *Alternative solutions to using temporary lighting*	N/A
Information Provision	9	Advance notice of works	• *Providing advanced notice, i.e. a minimum of 4 weeks prior to project commencing* • *Use of billboards and VMS at roadside prior to start of roadworks* • *Information communicated through various networks/media* • *Planning for advanced notice of changes to TM provided throughout delivery*	N/A
	10	Scheme information at the roadside	• *Dependent upon the scale of the project use of either billboards or temporary signage to display reasons and timescales for the work, including signage along diversion routes, in accordance with MPI 48-042016* • *Number and locations of billboards or temporary signage within main works and along diversion routes in respect to TM* • *Size and appearance of temporary signage/billboards across the scheme* • *Planning for updates to billboards or temporary signage*	N/A
	11	Electronic signage	• *Use of standard approach in accordance with the Variable Signs and Signals Policy for flexible project specific messaging and in accordance with MPI 54-062016 (reissued 15/08/2018)*	N/A

		Key Principles	Proposed Approach	Other options considered (rejected/discounted options)
			• *Use and location of portable VMS for travel time and project specific messaging* • *Consideration of signing strategy with respect to information overload* • *Consistency in language across projects for VMS messages*	
	12	Travel Time VMS (TTVMS)	• *Use and location of TTVMS through project TM for main works and diversion routes in accordance with MPI 54-062016 (reissued 15/08/2018)* • *Accuracy of travel time including travel time for alternative routes (diversion routes)*	N/A
	13	Visible progress	• *Providing updates to customers about overall progress via signage within roadworks* • *Use of alternative media to provider customer updates* • *Accuracy of information in line with key milestones and completed works*	N/A
Engaging and Communicating with Customers	14	Local communications and outreach	• *Approach/strategy for delivering good communications at the right time* • *Stakeholder mapping for project/area* • *Use of public exhibitions* • *Use of various media for communications, e.g. newsletters, radio, etc.* • *Understanding of public requirements and key events for TM* • *Diversion route engagement (pre- and post-works) to understand access requirements* • *Progress updates* • *Communications plan*	N/A
	15	Use multiple media channels, regularly	• *Identify provision/frequency of information and media methods to be used (make proportional to project)* • *Use of NOMS to ensure accuracy of traffic data* • *Engagement with appropriate organisations to raise awareness/advertise through their sites*	N/A
	16	Impactful messages	• *Information to be communicated – programme/community/customer benefit messages* • *Identify media to be used*	N/A

		Key Principles	Proposed Approach	Other options considered (rejected/discounted options)
	17	Explain no activity	• *Strategy to provide explanation of no activity and manage customer perception of project* • *On-road/off-road communications approaches*	N/A
	18	Seek customer feedback on new Traffic Management	• *Planning for early customer drive through of new traffic management to spot issues, improvements, etc.* • *Agree standard approach to seek feedback from traffic officers, customers and/or customer managers*	N/A
	19	Understand customer experience	• *Agree approach to collecting customer feedback* • *Agree mechanisms to engage with various customers* • *Identify process for analysis of correspondence and feedback* • *Planning for use of analysis outcomes to influence future communications*	N/A
	20	Complete the feedback loop	• *Identify strategy to communicate how customer input has influenced delivery and project management* • *Agree approach for communicating customer benefits when realised* • *Plan customer specific POPE type assessments – during and after project to share learning* • *Agree consultation strategy to collate customer views/feedback, e.g. pre-project, during construction, during operations, post-project* • *Agree use of social media to share good news stories* • *Identify strategy for sharing best practice, both internally and externally with customers*	N/Av

Appendix C Customer Impact Assessment Tool

The Customer Impact Assessment Tool in Appendix C is taken from the Roadworks a Customer View (RACV) Implementation Toolkit. This should be completed to provide an indicator of the level of impact anticipated by the project on each customer group at the current PCF stage. The OTMP should take account for the requirements of the customer groups rated as red and amber within this appendix, high and medium impact respectively.

1. Consider the impact of the roadworks (and the associated construction traffic) on the different types of road users and rate the level of impact:

Table C-1 Impact of roadworks and associated construction traffic on different types of road users and level of impact

	Road user type (e.g. commuters, leisure drivers, freight, etc.)	**Level of impact**		
		High	**Medium**	**Low**
1.	Commuters	X		
2.	Leisure drivers		X	
3.	HGVs	X		
4.	Disabled car driver		X	
5.	Bus/Coach Services		X	

2. Consider the impact of the roadworks (and the associated construction traffic) on the communities and rate the level of impact:

Table C-2 Impact of roadworks and associated construction traffic on communities and level of impact

	Community (e.g. commuters, leisure drivers, freight, non-motorised user, etc.)	**Level of impact**		
		High	**Medium**	**Low**
1.	Commuters	X		
2.	Leisure drivers		X	
3.	HGVs	X		
4.	Disabled car driver	X		
5.	Bus/Coach Services		X	
6.	Walkers and cyclists		X	

3. Consider the impact of diversion routes on road users and communities and rate the level of impact:

Table C-3 Impact of diversion routes on road users and communities and level of impact

	Customer types (e.g. commuters, leisure drivers, freight, industrial estates, residents, local authorities, retail parks, schools, stadiums, local events, land owners, etc.)	**Level of impact**		
		High	**Medium**	**Low**
1.	Commuters	X		
2.	Leisure drivers		X	
3.	HGVs		X	
4.	Disabled car driver		X	
5.	Bus/Coach Services		X	
6.	Walkers and cyclists		X	

Appendix D Dynamic Roadworks Benchmarking Template

Table D-1 below defines the Dynamic Road Works Benchmarking RAG rating descriptions for the 5 Visions in accordance with the Dynamic Road Works Benchmarking Template v2.0, which should be used to complete the following Dynamic Road Works Benchmarking Scores in Table D-2. Appendix D should be populated once Section 2.3 Proposed traffic management measures is completed to provide a summary of the current state of the project. RAG rate the project against the Dynamic Roadworks Vision to record the status of the project at the current PCF stage.

Table D-1 RAG Descriptions for Visions

	Green (aligned to vision)	Amber (just outside vision)	Red (well outside vision)
Speeds	Over 50% of the project (in distance and time) is at the permanent speed limit	Less than 50% is at the permanent speed limit, but there is clear evidence showing what alternative methods of construction were used.	Less than 50% is at the permanent speed limit, and there is no evidence showing what alternative methods of construction were used.
Length	The total length of TM on any one 'journey' (i.e. on 2 arms of a roundabout that could form a realistic journey) is shorter than 6km, or 1 link if on a motorway. Or, the total length of TM is more than 6km (or 1 link if a motorway) but there is evidence the increased length is proportional to a reduced delivery time. Or, the total length of TM is more than 6km (or 1 link if a motorway) but the additional length is operating at a minimum of 60mph. AND the average journey time created by the road works is not more than an additional seven minutes thirty seconds.	The total length of TM is more than 6km (or 1 link if a motorway) and there is evidence that the reduced delivery time is halfway proportional to the increased length. e.g. a fifty percent increase in length for a 25% reduction in the time taken to deliver the additional length. AND the average journey time created by the road works is not more than an additional seven minutes thirty seconds.	The total length of TM is more than 6km (or 1 link if a motorway) and there is no evidence of reduced delivery time even halfway proportional to the increased length, nor is the additional length a minimum of 60mph. AND/OR the average journey time created by the road works is more than an additional seven minutes thirty seconds.

	Green (aligned to vision)	Amber (just outside vision)	Red (well outside vision)
Closures & diversions	No more than 1 full closure (including slip road closures) every 3 months And / or the diversion route has a comparable journey time, and impact on communities along the diversion route are minimal	No more than 1 full closure (including slip road closures) every month	More than 1 full closure (including slip road closures) every month
Delivering quicker	Benefits are delivered to the customer before full opening (NA if offline project) AND construction is undertaken at least 6 days a week AND restrictions are lifted during embargo periods (unless full productivity is maintained)	Benefits are delivered to the customer before full opening (NA if offline project) OR construction is undertaken at least 6 days a week OR restrictions are lifted during embargo periods (unless full productivity is maintained)	No benefits are delivered to the customer before full opening (NA if offline project) NOR is construction undertaken at least 6 days a week NOR are restrictions lifted during embargo periods (and full productivity isn't maintained)
Explaining activity	There is evidence of a comprehensive on-road/off-road communications approach, which updates customers as required of activities undertaken, works completed and progress made.	Evidence of an off-road only communications approach, which updates customers as required of activities undertaken, works completed and progress made.	No evidence of a communications approach which updates customers as required of activities undertaken, works completed and progress made.

NA – This part of the vision is not applicable to this project e.g. the project may be a new road so there is no need to report on speeds/length etc.
Not yet known – The project cannot yet provide this information. If this option is chosen, the project must provide supporting evidence on a) why it is not yet known and b) when the information is expected to be available.

Dynamic Road Works Benchmarking Scores

Table D-2 Dynamic Roadworks Benchmarking Template

Vision	Green/ Amber/ Red/ NA/ Not yet known	Project Evidence for RAG Rating
1. Speeds *Varying the speed limits so they are appropriate for the work taking place*	**Amber**	Due to the nature of the works maintaining the permanent speed limit throughout construction with vehicles merging / diverging was not considered safe therefore a reduced speed limit has been applied. While the majority of the scheme is constructed offline these sections have been excluded for the determination of the alignment to the road works visions as they will have little to no impact on customers. The outline strategy demonstrates that this scheme has aligned to the vision where possible however it is not considered feasible to have over 50% of the project (in distance and time) is at the permanent speed limit for safety reasons Therefore an AMBER score has been assigned. There are opportunities to improve this which should be explored further by the Contractors in Stage 5.
2. Length *Shortening the length of roadworks*	**Green**	The temporary traffic management is anticipated to be kept to the minimum in order to minimise disruption to the network. The works at the M54 and M6 are both anticipated to be less than 4km. It is considered that the scheme is fully aligned to this vision as the total length of TM on any one 'journey' is shorter than 6km, or 1 link if on a motorway, therefore a GREEN score has been assigned.
3. Closures and diversions *Appropriate use of full road closures (including slip road closures) and associated diversions*	**Green**	As the final construction programme is yet to be completed, the frequency of any full closures of the carriageway is currently unknown however these are anticipated to be infrequent (either Green - No more than 1 full closure every 3 months or Amber - No more than 1 full closure every month).

Vision	Green/ Amber/ Red/ NA/ Not yet known	Project Evidence for RAG Rating
4. Delivering quicker *Delivering road works quicker*	**Amber**	Priority shall be given to completing sections of road works and opening to traffic as soon as is practical in order to secure tangible benefits to customers as early as possible. Where it is intended for road works to be left in place for some time without any construction works being undertaken e.g. a weekend, the contractor shall assess whether it is reasonably practicable to remove the TTM equipment during this period. If it is not, then it is considered reasonably practicable for the contractor to continue construction works instead. It is anticipated that the bank holiday roadworks removal may not be feasible for temporary traffic management along the M54 and M6 therefore a rationale may be required for not adopting the policy of bank holiday roadworks removal. Possible measures to reduce disruption are to be considered as the scheme progresses. If the decision is made to allow the closure/speed restriction to remain during an embargo period, the scheme should maintain existing productivity during the embargo period. At this stage in design, it is not possible to demonstrate that the scheme is fully aligned with the vision as the working hours are to be confirmed by the appointed contractor therefore it is unknown if the construction will be undertaken at least 6 days a week. While it is anticipated that restrictions may not be able to be lifted during embargo periods it is anticipated that full productivity should be maintained. The scheme should deliver benefits to the customer before full opening; therefore, an AMBER score has been assigned.
5. Explaining activity *Explaining clearly what activities are, or are not, taking place*	**Green**	Refer to plan for full detail of the proposed communication strategy. It is considered that this will provide a comprehensive on-road and off-road communications approach, which updates customers as required of activities undertaken, works completed and progress made, therefore a GREEN score has been assigned. The communication plan and traffic management modelling would be further reviewed and updated as the project progresses to PCF Stage 5.

Appendix E Indicative Traffic Management Layouts

List of drawing included within this appendix:

- VTMSL-CN203-M54-DN-001 – Temporary Narrow Lanes to Verge (Phase 1)
- VTMSL-CN203-M54-DN-002 – Contra-flow System Eastbound (Phase 2)
- VTMSL-CN203-M54-DN-003 – Contra-flow System Westbound (Phase 3)
- VTMSL-BAM-DIP-CN203-05 – M6 Junction 11 Phase 1
- VTMSL-BAM-DIP-CN203-06 – M6 Junction 11 Phase 1A
- VTMSL-BAM-DIP-CN203-07 – M6 Junction 11 Phase 2
- VTMSL-BAM-DIP-CN203-08 – M6 Junction 11 Phase 3

Appendix F Emergency Diversion Routes

List of drawing included within this appendix:

- Route Card No.83
- Route Card No.84
- Route Card No.85
- Route Card No.87
- Route Card No.90
- Route Card No.164
- Route Card No.165
- Route Card No.166
- Route Card No.167
- Route Card No.168
- Route Card No.169

Appendix G Compound Areas

List of drawing included within this appendix:

- HE514465-ACM-HGN-Z1_SW_PR_Z-DR-CH-1004
- HE514465-ACM-HGN-Z3_SW_PR_Z-DR-CH-1006