



Highways England Company Limited

Smart Motorways Alliance

**SMA_Scheme Scope_A1(M) J6-
8_FINAL_Constructionv1.0**

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Section A: Scheme Client Requirements

Smart Motorway upgrade on the A1(M) between junction 6 and junction 8.

The Smart Motorway shall include All Lane Running (ALR) between junction 6 and junction 8.

The Scheme will be provided in accordance with Interim Advice Note 161/15 (Smart Motorways) and revised by Major Projects Instruction 66MPI-66-052018 version 2 (issued 05/04/2019).

With the exception of works already completed, unless agreed in writing with the Client no further Stage 3-5 Detailed design works shall be completed prior to 1st April 2023 and no Stage 6 Construction works shall commence prior to 1st April 2025.

Within 4 months of 1st April 2023, or at an alternative date agreed with the Client, the scope and the associated ABPM and Fee products shall be changed and re-calculated to take account of any changes which are agreed to have impacted the Scheme from receipt of this Scheme Orders to the commencement of detailed design.

Section B: Scheme Scope

The Scheme Scope is to be delivered in conjunction with Volume 2.2 of the Alliance Contract, the Alliance Scope. The sections of the Alliance Scope are detailed below, the requirements of these sections are set out within Volume 2.2 of the Alliance Contract.

Scope Section	Description
S100	Description of the Works
S200	General Constraints
S300	Alliance's design
S400	Scheme handover
S500	Programme
S600	Quality Management
S700	Tests and inspections
S800	Management of the works
S900	Working with Others
S1000	Services and other things to be provided
S1100	Health and safety
S1200	Subcontracting
S1300	Title
S1400	Accounts and records
S1500	Commercial management
S1600	Transfer of rights
S1700	Information management
S2000	Project Bank Account (Y(UK)1)
S2100	Client's work specification

Below identifies the additional description of the works included in the Scheme Scope.

S100 Description of the Works

The A1 (M) is a route of strategic importance linking London and the South-East with the East Midlands, Yorkshire and the North-East. The A1(M) Junction 6 to 8 is a 13.8km motorway section of the A1(M). The route has been identified as a focal point for future growth around the large and medium-sized urban centres of Hatfield/Welwyn Garden City, Stevenage, Hitchin, Harlow, Bishop's Stortford, St. Neots, Cambridge, Alconbury / Huntingdon, Peterborough, Wakefield and Doncaster. This section of the A1(M) generally runs north south and passes to the west of Stevenage. The scheme runs from Junction 6 (Welwyn) to Junction 8 (Stevenage). The sections of motorway affected by the Scheme are maintained by the Highways England Area 5 and Area 8.

The scheme scope includes the necessary tie in works at the terminal Junctions 6 and 8, including;

- Junction 6
Works associated with the smart motorway which ties into the existing motorway at Junction 6 of the A1(M). The works are contained between chainages 0 and 2,700 and include the replacement of steel barrier within the verges, mill and inlay to Lanes 1, 2 and 3, new lighting columns and the modification of existing structures.
- Junction 8
Works associated with the smart motorway which ties into the existing motorway at Junction 8 of the A1(M). The works are contained between chainages 14,360 and 16,850 and include the replacement of the central reserve barrier and associated works between chainages 14,360 and 15,880, realignment of the road to accommodate the central reserve barrier including associated widening works, mill and inlay to Lanes 1, 2 and 3, new lighting columns at the junction and the modification of existing structures.
- The scheme shall be designed to permit 60mph running through the roadworks where safe to do so.

S200 General Constraints

- During the construction of the A1(M) at junction 6 the Welwyn Roman Baths were discovered, and these were preserved within the motorway embankment by constructing a structure around them. The Baths are open to the public at specific times.
- There is a key designated nature conservation sites associated with the route on A1(M) Hertfordshire between junctions 5 and 6, and between junctions 6 and 7.
- Landscape sensitivities include sections of A1(M) near Stevenage in Hertfordshire.
- There was a HE funded pinch point scheme at junction 6 delivered by OD in 2015 that was unsuccessful in reducing peak queuing sufficiently. Junction capacity is a major local concern and this scheme is expected to further improve this as confirmed during prelim design.
- At Junction 8 there is the major Hertfordshire Hospital (Lister) which has the only accident and emergency (A&E) department in this area. Access to the A&E must be accommodated during construction and especially consideration of diversion routes during closures. Provision will also need to be made for emergency access by emergency services during the works, particularly during times of closures.
- There is a steep gradient between J6 and J7.
- A Planning Application for 800 dwellings north of junction 8 has been submitted although HE Spatial Planning team has a requested further modelling to be conducted to assess the traffic impact.
- Knebworth Park is in close vicinity to the scheme, works will need to be carefully planned in collaboration with park owner to take into consideration scheduled events.
- Traffic management plans will need to be developed to consider the cumulative impacts alongside other schemes on neighbouring routes.
- Programme schedules and traffic management plans will need to be carefully developed to consider the change from D2M to ALR as this intervention is the first in its type
- Head room issues identified at Park Lane overbridge.
- For the purposes of planning and programming of traffic management the Alliance will need to comply with embargo dates and the published event calendar for this area. When an embargo or event is in place, the Alliance should be looking to either complete works prior to the embargo or to lift them for the duration of the embargo period.

S225 Protection of Existing Structures and Services

Structure Key.	Structure Name	Structure Number	Easting	Northing	Type
5000	Welwyn Road	/A1(M)//40.10//	523439	215721	Underbridge
5001	Roman Bath House	/A1(M)//40.30//	523460	216010	Underpass
5002	River Mimran Culvert	/A1(M)//40.50/Q /	523520	216120	Culvert
5003	Clock	/A1(M)//40.80//	523560	216500	Underbridge
15363	Clock Retaining Wall	/A1(M)//47.90/R /	523520	216630	Retaining Wall
6790	Avenue Retaining Wall	/A1(M)//41.50/R /	523820	217210	Retaining Wall
5014	The Avenue	/A1(M)//41.60//	523860	217300	Underbridge
5015	Pottersheath	/A1(M)//42.50//	524188	218065	Overbridge
5016	Ninnings Wood Subway	/A1(M)//43.10//	524343	218626	Underpass
5017	Gipsy Lane	/A1(M)//43.60//	524320	219220	Overbridge
5018	Park Lane	/A1(M)//44.60//	524222	220224	Overbridge
5019	North Lodge	/A1(M)//46.10//	523812	221628	Underbridge
5020	Langley Sidings South	/A1(M)//47.00//	523558	222467	Overbridge
5021	Langley Sidings North	/A1(M)//47.10//	523516	222580	Overbridge
5022	Norton Green Subway	/A1(M)//48.10//	523000	223420	Underpass
5023	Chadwell Road	/A1(M)//47.60//	522660	223840	Underbridge
30981	Meadway Environmental Barrier	/A1(M)//49.50//2	522150	224600	Environmental Barrier
26802	Meadway Underpass	/A1(M)//49.50//1	522120	224643	Underpass
5024	Kitching Lane	/A1(M)//49.50//	522160	224560	Underbridge
31706	Minehead Environmental Barrier	/A1(M)//50.00//	522020	225000	Environmental Barrier
5025	Symonds Green Subway	/A1(M)//50.10//	521989	225090	Underpass
5026	Fishers Green	/A1(M)//51.30//	522205	226198	Overbridge
5027	Todds Green Railway Bridge	/A1(M)//51.70//	522340	226540	Underbridge
5028	Coreys Mill South	/A1(M)//52.10//	522500	226960	Underbridge
5029	Coreys Mill North	/A1(M)//52.20//	522520	227060	Underbridge
5024	Monks Subway	/A1(M)//40.00//1	523480	215580	Underpass

The following companies have been contacted or have online systems (LinesearchbeforeUdig.co.uk for example) and have either provided information relating to plant in the vicinity of the scheme or have confirmed that their plant is not affected by the proposed works.

- UK Power Networks
- ESP Utilities Group
- National Grid Gas (Above 7 bar),
- National Grid Gas Distribution Limited (Above 2 bar)
- National Grid Gas Distribution (below 2 bar)
- Tata Communications
- Affinity Water
- CenturyLink Communications UK Limited

- GTC
- Thames Water
- Vodafone
- Hertfordshire County Council
- BT
- Hertfordshire County Council
- Mobile Broadband Network Limited
- Virgin Media
- Sky UK Limited
- Vtesse Networks
- Interoute
- ENGIE
- Verizon Business
- KPN (c/-Instalcom)
- Colt
- CityFibre
- Sota
- Anglian Water
- National Grid Electricity Transmission
- Energetics Electricity
- Utility assets Ltd

Statutory Undertakers' Responses

Status: Additional C2 enquiries and responses will be updated in future versions of Statutory Undertaker Diversions document.

S305 Design responsibilities

The Alliance undertakes all design activities in accordance with the Alliance Scope and the Scheme Scope.

The Alliance undertakes all design activities associated with PCF Stages 4 to 7. Outline design activities undertaken prior to the Alliance Scope are not to be relied upon. Should the Alliance Partners choose to utilise outline design undertaken in prior PCF Stages, to inform the detailed design, they will be considered to have verified the adequacy of the proposed outline design, and taken responsibility for the outline design.

Where any changes are made by the Alliance Partners after outline design, the Alliance Partners need to ensure these changes are reflected in previous PCF stage assessments, or the Alliance Partners will need to undertake any necessary re-assessments where required.

S320 Design submission procedures and acceptance criteria

The Alliance develops the design in accordance with standards and associated amendments as detailed in the Implementation Report for New Standards HE551539-WSP-GEN-SG-RP-CH-00017. These agreements shall prevail over the

requirements of the S2100. The Alliance will undertake an impact assessment to assess the implications of full compliance with the S2100 and make a recommendation to the Alliance Board detailing which changes should / should not be adopted.

S502 Scheme Programme Requirements

The following summarises the Milestone Key Dates for inclusion in the programme and the performance table as detailed in the Implementation plan.

Milestone Key Date	Date
Stage Gate Assessment Review 5 (SGAR5)	31/06/2025
Start of Works (SOW)	31/06/2025
Road Open for Traffic (OfT)	31/03/2028
Stage Gate Assessment Review 6 (SGAR6)	30/06/2028
Completion excluding landscaping and ecology	30/06/2028
Stage Gate Assessment Review 7 (SGAR7)	30/06/2029
Independent Assurance Review 5a	To be agreed with the Client

S665 Risk Management

The following matters to be included in the Early Warning Register;

1. Park Lane Adverse Camber, additional costs are incurred in application of an adverse camber during the main works once enabling works are complete.
2. Ancient Woodland - Proximity of gantries and Emergency Areas. 1. Loss or deterioration of this habitat would give rise to a significant adverse effect and turn in trigger a Development Consent Order (DCO), under the Planning Act 2008. 2. Temporary/permanent root protection.
3. Technology - Legacy BT Asset identified as installed on HE land (may be live). Increased costs and delays to programme (design and construction) if additional design or service diversions are required.
4. Todd's Green Bridge which is over the electrified East Coast Mainline, has Insufficient width over the structure to accommodate proposed road alignment. If central reserve lightwell option not possible, parapet design option will require a Network Rail possession order.

5. Archaeological constraints (Roman Baths). May require shallow trench design and shallow cabinet bases

S1010 Services and other things to be provided by the Client as a member of the Alliance

Section C: Allocation of Scheme Scope between Alliance Partners

S120 Core Responsibilities of the members of the Alliance

S120A Production Management Partner

1. The Production Management Partner is responsible for
 - a. leading the integration of the members of the Alliance in the Production Hub to deliver the outcomes of the Production Hub including
 - integration of the Partners' resources in the Alliance,
 - programme management office,
 - supply chain management,
 - technology and information management,
 - scheduling,
 - people strategy,
 - commercial management,
 - governance and risk management,
 - quality management and assurance, and
 - business change, and
 - b. investing in the capability and competence development of the *Client*.

S120B Digitally Enabled Design Partner

2. The Digitally Enabled Design Partner is responsible for
 - a. the outline and detailed civil engineering design of the *works* in accordance with S2100 *Client's* work specification,
 - b. the principal designer role for the Schemes for which they are instructed in accordance with CDM Regulations,
 - c. maximising the use of the *Client's* Rapid Engineering Model (REM), digital design solutions including Building Information Modelling (BIM) and running digital rehearsals,
 - d. design knowledge management and promoting industry practice,

- e. providing capability and capacity to the Production Hub, and
- f. providing contingency in circumstances where a Digitally Enabled Design Partner is terminated.

S120C On-site Assembly Partner

- 3. The On-site Assembly Partner is responsible for
 - a. the management and delivery of the construction of the *works* in accordance with S2100*Client's* work specification,
 - b. the principal contractor role for the Schemes for which they are instructed in accordance with CDM Regulations,
 - c. site level mobilisation, engineering and performance control,
 - d. on-site assembly of assets,
 - e. the installation, testing and commissioning of any infrastructure as part of handover to the *Client*,
 - f. providing capability and capacity to the Production Hub, and
 - g. providing contingency in circumstances where an On-site Assembly Partner is terminated.

S120D The *Client* as a member of the Alliance

- 4. The *Client* as a member of the Alliance is responsible for
 - a. playing an active role in the delivery of the SMP from within the Alliance in an integrated manner,
 - b. providing capability and capacity to the Production Hub, the delivery hubs and improve its own capability over the duration of the contract,
 - c. providing the services outlined in S1010 Services and other things to be provided by the *Client*, and
 - d. providing contingency in circumstances where the Production Management Partner is terminated.

KEY:

- **Responsible** – The Lot Partner(s) responsible for delivering the activities as defined in the Alliance Scope
- **Support** – The Lot Partner(s) support the delivery of the requirements as defined in the Alliance Scope

The Alliance as a whole remains responsible for delivering the Scheme.

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
SECTION A: LOT SCOPE				
S100 Description of the works				
S105 Introduction to Highways England				
S110 Introduction to the Smart Motorways Programme				
S115 The structure of the Alliance	R	R	R	R
S116 Alliance Objectives	R	R	R	R
S120 Core responsibilities of the members of the Alliance	S	R	R	R
S120A Production Management Partner		R		
S120B Digitally Enabled Design Partner			R	
S120C On-site Assembly Partner				R
S120D The Client as a member of the Alliance	R			
S130 Agile responsibilities of the members of Alliance				
Scoping of surveys				
Asbestos	S	S	R	S
Communications	S	S	R	S

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
Condition	S	S	R	S
Drainage and ducting	S	S	R	S
Environmental and ecology (e.g. protected species)	S	S	R	S
Lighting	S	S	R	S
Noise	S	S	R	S
Pavement	S	S	R	S
Structures and geotechnical	S	S	R	S
Topographical	S	S	R	S
Carrying out of surveys				
Asbestos	S	S	S	R
Communications	S	S	S	R
Condition	S	S	S	R
Drainage and ducting	S	S	S	R
Environmental and ecology (e.g. protected species)	S	S	S	R
Lighting	S	S	S	R
Noise	S	S	S	R
Pavement	S	S	S	R
Structures and geotechnical	S	S	S	R
Topographical	S	S	S	R
Preliminary design				
Gantries, structures and bridges	S	S	R	S
Noises and environmental barriers	S	S	R	S
Piling and foundations	S	S	R	S

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
Power and lighting	S	S	R	S
Retaining walls	S	S	R	S
Technology and communications	S	S	R	S
Detailed design				
Gantries, structures and bridges	S	S	R	S
Noises and environmental barriers	S	S	R	S
Piling and foundations	S	S	S	R
Power and lighting	S	S	R	S
Retaining walls	S	S	S	R
Technology and communications	S	S	R	S
Traffic management	S	S	S	R
Development of as-built records	S	S	S	R
Purchase and provision of				
Technology	R	S	S	R
Traffic management	R	S	S	R
Any other products and services called off from CCS and other <i>Client</i> framework contracts	R	S	S	R
Consent and administrative activities				
Statutory and consent management (e.g. Statutory instruments, Statutory Undertakers, Distribution Network Operators (DNOs))	S	S	R	S

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
Environmental assessment	S	S	R	S
Customer service and external stakeholder management	S	S	S	R
Setting up and administering of PBAs	S	R	S	S
Supporting SMP delivery (e.g. Red-X campaign)	S	R	S	S
Production activities				
Logistics	S	S	S	R
Promoting use of off-site manufacture and standardisation	S	S	S	R
Continuous improvement and innovation	S	R	R	R
SECTION B: GENERAL REQUIREMENTS				
S200 General constraints				
S201 Alliance behaviours	R	R	R	R
S202 Parent Company Guarantee	S	R	R	R
S203 Conflict of interest	S	R	R	R
S204 Anti Bribery and Anti-Fraud	S	R	R	R
S205 Data Protection	S	R	R	R
S208 Official Secrets Acts	S	R	R	R
S210 Confidentiality	S	R	R	R
S211 Insurance	S	R	R	R

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S215 Security and protection of the Site	S	S	S	R
S220 Security and identification of people	S	R	R	R
S225 Protection of existing structures and services	S	S	S	R
S230 Cleanliness of roads	S	S	S	R
S240 Network occupancy	S	S	S	R
S241 Recovery services	S	S	S	R
S245 Condition survey	S	S	R	S
S250 Considerate Constructor Scheme	S	S	S	R
S251 Customer service	S	R	R	R
S256 Project Control Framework	S	R	R	R
S266 Energy Efficiency Directive	S	R	R	R
S267 Environmental requirements	S	S	S	R
S268 Aftercare / Management of landscape works	S	S	S	R
S269 Site Waste Management plan	S	S	S	R
S270 Sustainable development requirements	S	S	S	R
S272 Air Quality Strategy	S	S	S	R
S274 Discrimination, bullying and harassment	S	R	R	R
S275 Equality, diversity and inclusion	S	R	R	R

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S276 Employment and skills	S	R	R	R
S300 Design	S	S	R	S
S305 Design responsibilities	S	S	R	S
S310 Design criteria	S	S	R	S
S320 Design submission procedures and acceptance criteria	S	S	R	S
S325 Design approval from Others	S	S	R	S
S400 Scheme handover				
S405 Scheme Open for Traffic	S	S	S	R
S410 Scheme handover	S	S	S	R
S415 Scheme Completion	S	S	S	R
S445 Documents	S	S	S	R
S450 Access to information following Completion	S	S	S	R
S500 Programme				
S501 Alliance programme requirements	S	R	R	R
S502 Scheme programme requirements	S	R	R	R
S515 Scheme programme quality	S	R	R	R
S520 Methodology statement	S	R	R	R
S525 Revised Alliance programme	S	R	R	R

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S535 Earned value management and reporting	S	R	R	R
S600 Quality Management	S	R	R	R
S605 Alliance aligned/integrated management system	S	R	R	R
S610 Lean	S	R	R	R
S615 Quality planning	S	R	R	R
S620 Authorised persons with adequate skills, knowledge and experience and training	S	R	R	R
S625 Quality reviews	S	R	R	R
S626 Audits	S	R	R	R
S630 Registers	S	R	R	R
S640 Non-conformity corrective action reports	S	R	R	R
S645 Quality indicators	S	R	R	R
S650 Deliverables	S	R	R	R
S655 Alliance management review	S	R	R	R
S660 Quality management points	S	R	R	R
S665 Risk management	S	R	R	R
S700 Tests and inspections	S	S	S	R
S800 Management of the works				
S810 Communications	S	S	S	R
S820 Disclosure requests	S	R	R	R
S825 Information security	S	R	R	R

REFERENCE	The <i>Client</i> (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S835 Business Continuity	S	R	R	R
S900 Working with Others	S			
S905 Requirements of Others	S	R	R	R
S920 Utilities providers	S	R	R	R
S1000 Services and other things provided				
S1010 Services and other things to be provided by the <i>Client</i> as a member of the Alliance	R	S	S	S
S1100 Health and Safety				
S1105 Supply chain health and safety maturity matrix	S	R	R	R
S1107 Alliance's health and safety management system	S	R	R	R
S1108 Subcontractor's health and safety management systems	S	R	R	R
S1111 Action to rectify breaches	S	R	R	R
S1112 Health and safety culture	S	R	R	R
S1113 Health and safety – exchange of information	S	R	R	R
S1114 Asbestos	S	S	S	R
S1115 Health and safety advice	S	R	R	R
S1116 Health and safety inspections	S	R	R	R

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S1117 Health and safety in construction	S	S	S	R
S1118 Incident investigation, reporting and follow-up	S	R	R	R
S1119 Incident statistics	S	R	R	R
S1121 Health and safety management audit	S	R	R	R
S1122 CDM compliance	S	S	R	R
S1123 Health and safety – charity-based incentive Schemes	S	R	R	R
S1125 Management of road risk	S	S	S	R
S1127 Substance abuse	S	R	R	R
S1128 Security	S	R	R	R
S1129 Employee safety	S	R	R	R
S1130 Fleet Operator Recognition Standard (FORS) Accreditation	S	S	S	R
S1131 Driving for better business	R	R	R	R
S1200 Subcontracting	S	R	R	R
S1205 Restrictions or requirements for subcontracting	S	R	R	R
S1210 Acceptance procedures	S	R	R	R
S1300 Title				
S1305 Marking	S	S	S	R
S1400 Accounts and records	S	R	R	R

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S1415 Form of documents to be retained	S	R	R	R
S1420 Records and audit access	S	R	R	R
S1425 Retention of records	S	R	R	R
S1500 Commercial Management				
S1505 Provision of cost information	S	R	R	R
S1510 Provision of price information	S	R	R	R
S1515 Cost verification	S	R	R	R
S1520 Invoicing	S	R	S	S
S1525 Forecasting	S	R	S	S
S1530 Earned value for assessment	S	R	S	S
S1600 Transfer of Rights				
S1605 Alliance rights over material prepared for the design of the works	S	R	R	R
S1610 Other rights to be obtained by the Alliance	S	R	R	R
S1700 Information management (Option X10)	S	R	R	R
S1705 Information management requirements	S	R	R	R
1S2000 Project Bank Account (Option Y(UK)1)				
S2010 Project Bank Account tracker	S	R	R	R
S2100 Client's work specification	S	R	R	R

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 Jacobs	Lot 3 BMJV
S2110 Drawings	S	R	R	R
Annex A Reference documents				
Annex B Form of Parent Company Guarantee	S	R	R	R
Annex C Insurance Tables	S	R	R	R
Annex D Alliance Inclusion Action Plan	S	R	R	R
Annex E Alliance Employment and Skills Plan	S	R	R	R
Annex F Special activities and requirements	S	S	R	S
Annex G Continuous improvement/lean minimum requirements	S	R	R	R
Annex H Quality improvement process	S	R	R	R
Annex I Subcontractor Warranty	R	R	R	R
Annex J Information management requirements	S	R	R	R