





Highways England Company Limited

Smart Motorways Alliance




Scheme Scope

M6 J4 - 5 Dynamic Hard Shoulder upgrade to All Lane Running

Responsible for this Drafting:

	Project Sponsor
	Interface Project Manager

Sign off Approval:

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Section A: Scheme Client Requirements

Undertake Dynamic Hard Shoulder upgrades to All Lane Running on the existing Smart Motorways network.

Currently there are seven stretches of Smart Motorway operating as Dynamic Hard Shoulder which are to be designed and converted to All Lane Running. Including M62 J25 - 30 , M42 J4 - 7 , M6 J4 - 5 , M6 J5 - 8 , M6 J8 - 10a , M1 J10 - 13 , M4/M5 Interchange.

This scope document is only applicable to the M6 J4-5 Dynamic Hard Shoulder to All Lane Running upgrade scheme and replaces the previous order related to Dynamic Hard Shoulder requirements to undertake all activities required up to Stage 3.

Design activities will be in accordance with the design standard GD302 (*Smart motorways: Upgrading hard shoulder running to all lane running operation*) and the associated design standard GD301 (*Smart Motorways*) current at the date of this Order.

This Scheme Order is for the Smart Motorway Alliance (SMA) to undertake all activities required to achieve successful Stage Gate Assessment Reviews 0 to 7 (according to Highways England's Project Control Framework (PCF)).

Section B: Scheme Scope Requirements

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 Alliance Partners are required to deliver a programme to upgrade the Dynamic Hard Shoulder (DHS) upgrade to All Lane Running on the smart motorways network.

The Alliance will collaboratively develop and produce the solution during design Stages 0-5 and the description of the works contained herein is to be considered as indicative and for information only.

The main features on this conversion are:

Lane markings - Solid white line changed to dashed line and red studs replaced with white studs. Diagonal hard shoulder line removed at start of DHS on each link. Nearside edge of carriageway line increased to 200mm. A customer focused solution for lane marking changes is required that will take account of potential ghosting, scarring and pavement degradation.

Variable message signs (VMS) and signals - Above lane signals to be considered for removal, but expectation that vast majority will remain.

Fixed and Fixed Text Message Sign (FTMS) “rotating plank” signing - Advance Direction Signs (ADS) changes made to cater for the new 4 permanent lanes, other signs no longer required on the corridor will be removed e.g. all rotating plank signing, ‘End of hard shoulder signs’ removed and ‘No hard shoulder for X miles’ signs to be installed. Additional emergency area approach signing for places of relative safety required by the Action Plan installed. Any signs related to the operation of DHS, made redundant by the conversion to ALR shall be removed.

Vehicle restraints systems (VRS) - Central reserve concrete barrier, where not already provided subject to test of practicality at viaducts and intra-junction locations. Potential for limited additional nearside VRS if new signing and additional technology assets can’t be located behind VRS. Removal of existing VRS where redundant.

Roadside technology - SVD installed with units sourced via client bulk purchase framework, described in Section B, S1010. Fixed hard shoulder CCTV cameras should be removed, and additional pan tilt zoom CCTV cameras provided for full coverage

with no blind spots at all times of day and night. Electricity interface cabinet changes if required. MIDAS Detection Infrastructure e.g. loops or radars to be retained.

Place of Relative Safety (PRS) - PRS retained/provided on exit slips where reasonable practicable, including Emergency Roadside Telephones (ERT). Mainline PRS typically retained, providing a spacing of less than $\frac{3}{4}$ mile. No new Emergency Areas are envisaged, unless the case is proven and accepted at Operations Technical Leadership Group (Ops TLG) and SCRG.

Other infrastructure - Any completely empty gantries* should be removed and any chamber covers moved out of the hard shoulder or strengthened. To note portal gantries may carry power and communications this will need to be considered prior to removal of existing gantries. No drainage capacity upgrades works are needed. Any drainage solutions will need early confirmation that the said solution is As Low As Reasonably Practicable (ALARP). Asset renewals, including technology refreshes are excluded, as are any roundabout and slip road improvements. All existing lighting is to be retained unless it has been assessed to be removed. If existing street lighting is in the central reserve, where the barrier is to be upgraded from steel to concrete, this will need to be repositioned and reinstated (either on top of the barrier or in the verges) unless it has been assessed to be removed.

Switchover from DHS Running to All Lane Running - Go-live activities including communications and ROC/RCC operations will need to be formulated to facilitate the switchover.

Statutory Instrument (SI) – Programme level SI covering all 7 Dynamic Hard Shoulders to All Lane Running projects.

Allocation to the Partners

The Alliance Partners will each deliver the Scheme relevant to their regional locations in accordance with the Work Allocation Procedure. The Alliance Partners are encouraged to consider whether there is a more efficient delivery allocation during optimisation. The responsible partners for this Scheme are:

Production Hub Partner - Fluor

Digitally Enabled Design Partner – WSP

On Site Assembly Partner – bmJV

The Alliance Partners will need to undertake all design and other activities required to achieve all SGAR's.

Independent Project Assurance Reviews are required and will focus on deliverability, affordability and value for money of the programme.

S200 General Constraints

Wider works

Below is a list of schemes that are identified as being in close proximity to the any of the 7 schemes included in the upgrade of DHS to ALR:

Smart motorways scheme		Major projects scheme in proximity		Large Renewal or small schemes in proximity
Delivery Plan Number	Scheme Name	Delivery Plan Number	Scheme Name	
10	M62 J25-30	4	M621 junctions 1 to 7	Will need exploring
33*	M42 J4-7	22, 23, 24, 28, 31	M42 junction 6, A46 Coventry junctions, M40/M42 interchange, M54 to M6 link road, M6 junction 10	
34*	M6 J4-5			
35*	M6 J5-8			
36*	M6 J8-10a			
46	M1 J10-13	N/A	N/A	
69	M4 J19-20 and M5 J16-17	N/A	N/A	

In addition to the works identified above, wider strategic and local road network works will be undertaken during this period including various HS2 project interface managed by others. The Alliance Partners will need to ensure construction activities are coordinated with other Highways England suppliers to minimise disruption to road users and other works. The Alliance will need to coordinate these activities in line with S240 of the Alliance Scope.

Equipment Supply

The Stopped Vehicle Detection radar equipment to be installed as part of these Dynamic Hard Shoulder conversion works will be provided by the Client as a part of Alliance. The PCF Stage 3 design includes an approximate quantity of 9 Stopped Vehicle Detection units to be installed from May 2022 and commissioned from June 22. The Alliance will confirm the final number of units required 6 months prior to the installation of the first unit.

S220 Security and identification of people

Alliance Partners must verify any representatives of the equipment supplier have undertaken necessary security checks in accordance with the Clients personnel security procedures.

S225 Protection of existing Structures and Services

The Alliance Partners shall identify any existing Structures and Services that require protection as part of this Scheme Scope.

S241 Recovery services

Recovery services to be determined by the Alliance

S268 Aftercare/management of landscape works

Aftercare/management of landscape works identified in the Alliance Scope are not required for the DHS upgrade.

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 construction, unless stated otherwise in S1010.

S405 Scheme Open for Traffic

The definition of Open for Traffic in the Alliance Scope is not used. Open for Traffic for the Dynamic Hard Shoulder upgrades is when all works are complete and is operational and meeting the standards identified in the Scheme Client Requirements.

S502 Scheme programme requirements

The programme is in the form stated in the Alliance Scope and shows all the information listed in clause 32.3 in relation to the Scheme. The following additional information is also required to be included in the programme;

- Dynamic Hard Shoulder to All Lane Running Site access dates;
- Dynamic Hard Shoulder to All Lane Running pre-site start Health and Safety meeting dates for each DHS Smart Motorways Site;
- Dynamic Hard Shoulder to All Lane Running Stopped Vehicle Detection technology equipment delivery dates and volumes for each Site;
- Dynamic Hard Shoulder Statutory instrument consultation dates.

Milestone Key Dates

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

Milestone Key Date	Date
Stage Gate Assessment Review 5 (SGAR5)	06-Dec-2021
Stage Gate Assessment Review 6 (SGAR6)	01-Feb-2023
Stage Gate Assessment Review 7 (SGAR7)	01-Feb-2024
Start of Works (SOW)	01-Nov-2021
Open For Traffic (OFT)	01-Nov-2022

S665 Risk Management

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

Risk	Proposed Mitigation Actions
Uncertain asset condition leading to scope uncertainty/increase	1. Carry out targeted detailed surveys to establish existing condition of assets as well as working closely with OD to understand known concerns

Late identification and agreement of asset condition scope, generating inefficiencies within the design and construction process.	<ol style="list-style-type: none"> 1. Establish common understanding of existing asset condition at Handover, and operational need for additional investment. 2. Establish a "Memorandum of understanding" document between OD & MP documenting agreement, and funding of asset renewal works at SGAR 3. 3. Proactive change control.
Slow mobilisation of the SMA a delay in meeting the Start of Works	<ol style="list-style-type: none"> 1. Run transition workshops to ensure that scheme objectives are known and new standard briefed 2. Run agile design process to ensure just in time design delivery prior to commencement on site.
Change in scope, emerging change in policy or standards	<ol style="list-style-type: none"> 1. Work closely with SES to understand potential standard changes
Significant environmental effects identified from Noise or Air Quality Modelling	<ol style="list-style-type: none"> 1. Failure to achieve the safety objective 2. Impact of the M62 J25-30 Notice of Determination legal challenge

S905 Requirement of Others

In addition to those identified in the Alliance Scope, the Alliance coordinates with Highways England Technology equipment suppliers.

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

The Client will provide Scanning Radar detection units. The detailed specification of the units will be confirmed following PCF stage 3.

The Client will confirm its supplier and provide Stop Vehicle Detection units for the scheme which meet the client's specification.

The Client will support the Alliance in managing its chosen supplier during design, installation and commissioning to ensure that works are delivered in accordance with the Alliance programme.

The following additional items are required:

Traffic modelling support provided by Atkins.

Bulk Purchase items as required as part of the Dynamic Hard Shoulder technology solution, for example ERT's

Section C: Allocation of Scheme Scope between Alliance Partners

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	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North 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 <i>Client</i> as a member of the Alliance	R			
S130 Agile responsibilities of the members of Alliance				
Scoping of surveys				
Asbestos	S	S	R	S

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
Communications	S	S	R	S
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

REFERENCE	The <i>Client</i> (as a member of the <i>Alliance</i>)	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
Noises and environmental barriers	S	S	R	S
Piling and foundations	S	S	R	S
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	S	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				

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
Statutory and consent management (e.g. Statutory instruments, Statutory Undertakers, Distribution Network Operators (DNOs))	S	S	R	S
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

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
S208 Official Secrets Acts	S	R	R	R
S210 Confidentiality	S	R	R	R
S211 Insurance	S	R	R	R
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	NA	NA	NA	NA
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	NA	NA	NA	NA
S269 Site Waste Management plan	S	S	S	R
S270 Sustainable development requirements	S	S	S	R

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
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
S276 Employment and skills	S	R	R	R
S285 Behavioural attributes	R	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	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

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
S515 Scheme programme quality	S	R	R	R
S520 Methodology statement	S	R	R	R
S525 Revised programme	S	R	R	R
S535 Earned value management	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	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

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
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
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>	R	S	S	S
S1100 Health and Safety				
S1105 Supply chain health and safety maturity matrix	S	R	R	R
S1106 Management of health and safety	S	R	R	R
S1107 Alliance's health and safety management system	S	R	R	R
S1108 Subcontractor's health and safety 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

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
S1114 Asbestos	S	S	S	R
S1115 Health and safety advice	S	R	R	R
S1116 Health and safety inspections	S	R	R	R
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
S1124 Particular requirements on Subcontractors	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

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
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
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 Partner's 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

REFERENCE	<i>The Client (as a member of the Alliance)</i>	Lot 1 Fluor	Lot 2 North WSP	Lot 3 North BMJV
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
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 Information management requirements	S	R	R	R

Annex A – Scheme Level and Programme Level Products

The requirements for Scheme Level and Programme level products will be detailed in the Stage Management plan.