



Highways England Company Limited

Smart Motorways Alliance

SMA Scheme Scope M62 J20-25 FINAL Constructionv2.0

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Section A: Scheme Client Requirements

Smart Motorway upgrade on the M62 between junction 20 (Rochdale) and junction 25 (Brighouse).

The Smart Motorway shall include All Lane Running (ALR), between junction 20 and junction 25.

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

The scheme includes the necessary tie in works at the terminal Junction 25 which may be subject to change dependant on the SMA delivery scope for the M62 J25-30 Dynamic hard-shoulder upgrade scheme.

- Junction 25
 - Works associated with the smart motorway which ties in to the existing smart motorway at Junction 25 of the M62. The works are contained between chainages 42010 and 43225 and include the replacement of the central reserve barrier and associated works between chainages 42050 and 43225, the replacement of steel barrier and drainage within the verges at certain locations, carriageway internal widening, mill and inlay to Lanes 1 and 4, new lighting columns in the central reserve and modification of existing structures. There is also the requirement to upgrade the communication ducting, cabling and technology to smart motorway standard through the junction. The works also include barrier, drainage and pavements works on the slip road as well as new lighting columns.

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 Additional Description of the Works

- The M62 in West Yorkshire has an existing capacity problem which will be exacerbated by proposed future growth around many of the junctions. Many of the junctions serve a local commuting need into the urban centres, as well as playing a part in the wider strategic network. This conflict causes congestion at junctions on the route. Although Highways England has small improvement schemes under development for some of these junctions, they are predominantly designed to address existing issues rather than cater for significant additional growth. The Cooper Bridge junction in Kirklees can affect the M62 J25.
- The rural parts of the route across the Pennines can have issues with disruption during severe weather. The M62 (east of junction 22) is the highest point on the English motorway network. However, it is rarely fully closed due to severe weather.
- The M62 near junction 22 runs over high moorland and is locally underlain by peat. This, combined with high annual rainfall, can present geotechnical challenges such as washouts and bursts. These can be exacerbated by high groundwater flows during periods of high rainfall and snow melts. Further east, the hilly topography has required the construction of many high embankments and deep cuttings.
- Between M62 junction 24 and junction 32a the route is directly underlain by the Pennine Upper Coal Measures. Earthworks and structures are therefore at risk from the influence of shallow mine workings and mineshafts, many of which are not recorded. At some locations the road alignment crosses areas of backfilled open pits. Records can indicate where shafts are located, but details of how shafts have been capped or sealed are not always available. The earthworks are often constructed from locally sourced fill, which in this region is generally mine waste. The chemical nature of this material can have adverse effects on buried concrete.
- The scheme shall be designed to permit 60mph running through the roadworks where safe to do so.
- The scheme scope includes the necessary tie in works at the terminal Junction 20
 - Junction 20

Works associated with the smart motorway which ties in to the existing smart motorway at Junction 20 of the M62. The works are contained between chainages 10650 and 11900 and include the replacement of the central reserve barrier and associated works between chainages 10850 and 11900, the replacement of steel barrier and drainage within the verges at certain locations, carriageway internal widening, mill and inlay to Lanes 1 and 4, new lighting columns in the verge, retaining walls and modification of existing structures. There is also the requirement to upgrade the communication ducting, cabling and technology to smart motorway standard through the junction including new gantries (including the demolition of the existing gantries). The works also include an Emergency Refuge Area including retaining wall on the slip road along with barrier works, pavements works and new lighting columns to the slip road.

S200 General Constraints

The key operational risks for the South Pennines route are:

- Highway surface water run-off particularly M62 J 22 - 26
- High winds at M62 J21 – J25 but particularly between junctions 21 and 22 (Rakewood Viaduct) and at junction 22 (Rockingstones)
- Fog between junctions 22 and 25
- Length and condition of diversion route and ability to sustain traffic for a significant period of time.

The key environmental challenges and issues are:

- Local authority designated Air Quality Management Areas (AQMAs) on M62 between junctions 18 and 22
- Almost 300 Noise Important Areas have been identified by Defra along the South Pennines route. Of these, 175 have been considered first priority locations. There are 20 Noise Important Areas within the length of the scheme.
- The South Pennine Moors Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) and the South Pennine Moors Phase 2 Special Protection Area (SPA) straddle the far western section of the M62 between Booth Wood reservoir and junction 22.
- The M62 runs through the open moorland of the Pennines between junctions 22 and 23.
- Significant frequent inclement weather.
- There are seasonal constraints on the use of the diversion routes between M62 J21 and M62 J23 due to the bird nesting season

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

Existing structures along the route are described in the Table (below). All overbridges and underbridges are either reinforced or pre-stressed concrete structures dating from the original construction of the M62 in the 1970s. As such, these structures are approximately 45 years old and showing expected signs of deterioration.

Structure	Number
Overbridges	12

Underbridges	26
Footbridges	5
Culverts	40
Gantries	60
Retaining Walls	6
CCTV Masts	27
Noise Barriers	2

Table 2.2 – Existing Structures

No pier encapsulation or strengthening is currently proposed at any structures as part of this scheme, as there is adequate space to provide rigid concrete barrier (RCB).

Three structures have been identified as having failed a pier impact assessment and the existing vehicle restraint system (VRS). These are:

- Thornham West (Structure Number: /A627(M)//4.20/A/)
- Thornham East (Structure Number: /A627(M)//4.20/B/)
- Hill Top Footbridge (Structure Number: /M62//65.40//)

These structures have been included within the DF3 design as an SMP enabler, to provide a higher level of containment to the verge piers, as the scheme is moving traffic closer to the structures.

S305 Design responsibilities

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

In accordance with Clause Z19.4, the Responsible Partner is responsible for any design works that have already been completed by Others in PCF Stages 0-3 that are used to deliver the Client Scheme requirements and the Scheme Scope. The Responsible Partner will be deemed to have verified the adequacy of the completed works and all such work is treated for the purposes of the contract as having been carried out by the Responsible Partner.

Where any changes are made to the works already completed by Others, the Responsible Partner needs to ensure these changes comply with the previous PCF stage assessments, or the Responsible Partner 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 HE551534-WSP-HGN-SG-RP-ZQ-0001. 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)	31/01/2023
Start of Works	31/01/2023
Road Open for Traffic (OfT)	30/11/2026
Stage Gate Assessment Review 6 (SGAR6)	28/02/2027
Completion excluding landscaping aftercare	28/02/2027
Stage Gate Assessment Review 7 (SGAR7)	28/02/2028
Independent Assurance Review 5a	31/10/2028

S665 Risk Management

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

1. Asset condition encountered during construction is worse than expected (e.g. ground conditions, drainage, pavement life), with gaps in existing asset information, leading to additional design and construction;
2. Seasonality constraints due to trans-Pennine motorway section, with increased risk of snow, wind, rain and fog, limit productive delivery window and increase programme times and costs;
3. Presence of archaeological remains, with Roman fort site adjacent to M62 at Outlane, affects ground investigation and construction works;
4. Locations of cuttings/rock faces provide insufficient width in proximity to new Lane 1 to absorb rock falls, posing a risk to road users;
5. Lack of diversion routes over the Pennines adversely impacts user experience.

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

None Identified.

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

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

REFERENCE	The Client (as a member of the Alliance)	Lot 1 Fluor	Lot 2 WSP	Lot 3 Costain
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 Subcontractor Warranty	R	R	R	R
Annex J Information management requirements	S	R	R	R