

Logistics and Traffic Management | QS-13A | Delivery Methodology | Scheme-wide Logistics Plan

1. Your Scheme-wide logistics plan will provide the following information as a minimum:
 - 1.1. a description of the mobilisation works, site establishment works and site set-up, including outline construction methodologies for compounds, haul roads and temporary works areas;
 - 1.2. the construction workforce accommodation strategy, including details of on and off-site workforce accommodation;
 - 1.3. the construction workforce shift patterns;
 - 1.4. the construction workforce travel strategy, including transport and parking arrangements;
 - 1.5. the temporary power requirements and supply arrangements for the Site;
 - 1.6. the temporary water requirements and supply arrangements for the Site;
 - 1.7. the strategy for temporary lighting, including for compounds and haul roads;
 - 1.8. the strategy for site waste management, including storage and removal;
 - 1.9. procedures and routes for the transport of materials and plant into the Site, including a description of the site access and egress routes and points;
 - 1.10. the strategy for on and off-site fabrication and production;
 - 1.11. routes and procedures for abnormal loads;
 - 1.12. an explanation of how movements and interfaces between people, material and plant within the Site will be coordinated and managed;
 - 1.13. the strategy for the reinstatement of compound areas and haul roads upon completion of the works.



1. Our Scheme-Wide Logistics Plan

BADGER has worked collaboratively with the design partners and specialist consultants to provide the preliminary steer for our **Scheme-wide Logistics Plan**, which will be implemented during the delivery stage of the project A303 – Amesbury to Berwick Down (Stonehenge).

Our Delivery Methodology Scheme-wide Logistics Plan, reflects BADGER's position at the time of writing and will be modified throughout the Competitive Dialogue process, reflecting the feedback and input from Highways England to meet the full set of the requirements highlighted in the Scope. The document has been developed in compliance with:

- The DCO Documents, Drawings, A303 Scheme Objectives, Benefits, TQNs
- Highways England Road Investment Strategy
- Highways England and stakeholder scheme expectations
- Highways England's 3 imperatives and 5 aims
- Volume 2 Part 1 General Requirements S265, S270
- V2P2 Design and Technical Req. Sect 2, 3, 7.9, 10, 23
- Volume 2 Part 6 Accommodation Works
- Volume 3 Specification Appendices
- Outline Environmental Management Plan (OEMP)
- Detailed Archaeological Mitigation Strategy
- Environmental Statement (ES)
- Contract drawings
- Data Room documents
- Tender Documents in general including Public and Confidential responses to the Competitive Queries and Tender Amendments.

This Scheme-wide Logistics Plan sets out a series of standards, mitigation measures and procedures which will be observed through the construction process, in order to minimise adverse environmental/archaeological effects of the construction process and provides a detailed description of how the proposed construction works will be managed.

1.1 Mobilisation Works, Site Establishment Works and Site Set-Up

During the delivery stage, just after the notice to proceed, when we get access to the whole of the site, BADGER will use different sites within the project contract boundary to establish all our own facilities such as:

- | | |
|--------------------------------|-----------------------------------|
| ▪ Main site offices | ▪ On Site Car Parking |
| ▪ Storage compounds | ▪ Stockpiling areas |
| ▪ Minor satellite compounds | ▪ Warehouse |
| ▪ Security/Control Centre | ▪ Workshop areas |
| ▪ Batching plants | ▪ Site Canteens |
| ▪ Prefabrication Yard | ▪ Welfare Units |
| ▪ Turnstiles | ▪ Energy centre |
| ▪ First Aid Stations | ▪ Compound fences and Hoarding |
| ▪ Changing rooms and toilets | ▪ Wheel Washing Facilities |
| ▪ Gates | ▪ Sample mock-up area |
| ▪ Vehicle holding area | ▪ Weighbridge |
| ▪ Laboratory | ▪ Waste Management Area |
| ▪ Additional Welfare areas | ▪ PPE cleaning/ drying facilities |
| ▪ TBM associated installations | ▪ Skype/zoom call home pods |
| ▪ Prayer/faith rooms | |
| ▪ Training/Briefing centre | |

The above elements will be required for the whole duration of the project, after the access to the site is established, enabling the efficient construction and progress of the works. Following project completion, we will undertake a full restoration of the sites. For de-trunking works (from month 69 to month 81) some of these areas will be needed and fully restored when works are finished (defined in **1.13** of this document).

A regime will be established with the Archaeological Clerk of Works (ACoW) regarding the release of areas subject to environmental/archaeological inspection and protection. In those areas where all the mitigation measures, for example protective



fences, are not in place when BADGER gets the control of the site (“Starting Date”), we will deliver the protection works as temporary fencing and hoardings. They will be provided for:

- Safety and security
- Livestock control
- The protection of heritage and environmental features.

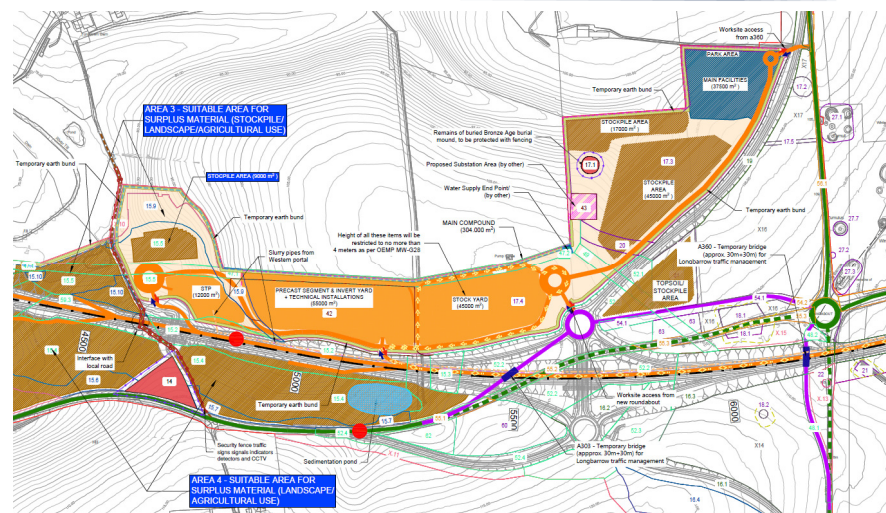
These areas will be identified at project commencement and all the mitigation measures will be in place. The workforce will be advised of the locations where access is restricted during the project induction. Written evidence (Hold Point release or similar) will be provided of the release of these areas prior to establishment works commencing in these areas.

Site Compounds, Locations & Design

BADGER has identified the following locations for establishing compounds as per OEMP requirements:

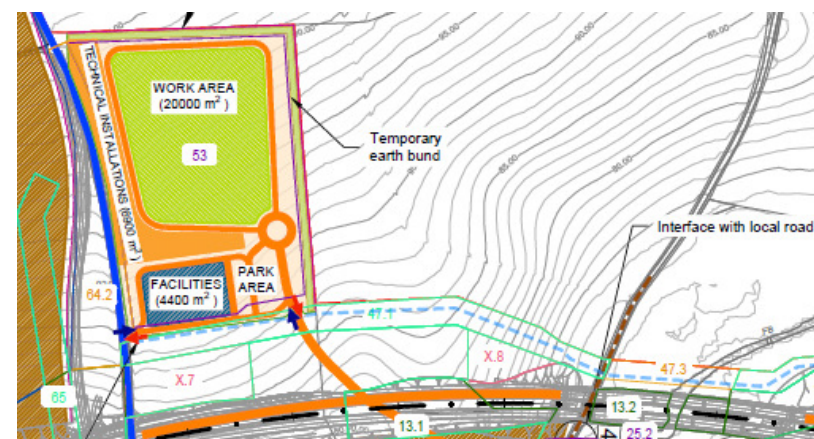
MAIN COMPOUNDS	SATELLITE COMPOUNDS
West of Longbarrow existing Junction	✓ West of River Till Viaduct ✓ North of Countess Roundabout

The main construction compound and tunnel production areas will be located to the west of the existing Longbarrow Junction around chainage 5000 and 6000 and outside of the WHS. The main access to these areas will be off the A360, although other access arrangements may be viable in two other points. The location and layout (see picture on right) of the Main Compound and detailed tentative list of all the facilities included in this area is shown in **QS-13C – Plan Layout-Compound Areas and Haul Routes**.



Picture 1: Longbarrow Main Compound

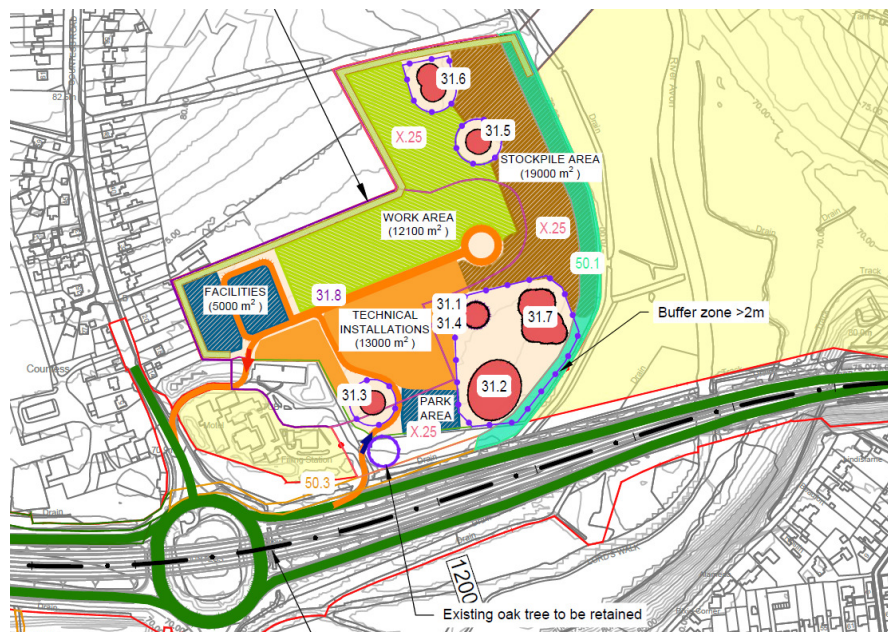
A satellite office and compound area will be located east of the B3083 (see picture below) at the western end (chainage 4000 of the scheme) to serve the construction of the River Till viaduct and the western section of the Scheme. The approximate location of these areas and an illustrative layout is shown in **QS-13C – Plan Layout-Compound Areas and Haul Routes**.



Picture 2: River Till Satellite Compound



A further satellite office and compound area will be located to the north-east (ch.12000 of the scheme) of the Countess Roundabout to serve the eastern end of the Scheme. The approximate location of these areas and an illustrative layout is shown on **QS-13C – Plan Layout-Compound Areas and Haul Routes**.



Picture 3: Countess Satellite Compound

The River Till and Countess Satellite Compounds are considered as a support site, where no main production plant and equipment will be installed (Precast yard, Batching Plant, Water Treatment Plant etc.). The main element considered within these areas will be:

- Office (HE and Overseen Organization)
- Office (BADGER and Subcontractors)
- Canteen area
- First Aid
- Changing Room
- Security Control Centre

- Wheel washing facility
- Workshop
- Warehouse
- Car and equipment parking
- Transformers.

The height of all these items will be restricted to no more than 4 meters as per OEMP MW-G28.

All buildings within compounds will be of a suitable colour to aid their integration within the landscape. All buildings within compounds (excluding those associated with the treatment plant for extracted material from tunnel and concrete batching plant), will have a maximum 4m height.

All the 3 compounds will be mainly surrounded by a vegetated earth bund of 2 m in height to minimise the adverse visual impact on the surrounding areas and heritage site.

As stated in **Volume 3 Appendix 1/1**, we will provide a minimum space of 100 m2 for the client in each of the satellite compounds and a minimum space of 1.100 m2 + corridors and aisles in the main compound. To supplement the office space in each of the main and satellite compounds for the peak levels of staff and labour as necessary, we will provide:

- | | |
|---------------------------------|------------------|
| ▪ A Breakout area | ▪ Changing rooms |
| ▪ First aid room | ▪ Drying room |
| ▪ Kitchen/utility room | ▪ Laundry room |
| ▪ Shower room | ▪ Reception |
| ▪ Male/ female/ disabled toilet | |

Calculation sheets in order to address the *client* requirements for the different compounds are shown below:



Longbarrow compound:

OFFICE				
	M2	*1,15 CORRIDORS	*1,20 SOCIAL DISTANCING	TOTAL AREA
HE	1064	159,6	212,8	1436,4
BADGER	2892	433,8	578,4	3904,2
TOILETS	80			80
				5420,6 m2

HE OFFICE REQUIREMENTS				
	PEOPLE	m2/PERSON	unit	TOTAL AREA
Open Plan Office	25	12	2	600
Private Office	1	12	2	24
Hot Desk Area	10	12	1	120
Archeology Workshop	1	32	1	32
Arch. Storage room	1	12	1	12
Storage room	1	12	1	12
Communication Room	1	12	1	12
IT Storage & Service Room	1	12	1	12
Breakout Area	1	16	3	48
Meeting Room	12	2	2	48
Conference Room	22	2	1	44
Training Room	50	2	1	100
				1064 m2

Shared with the Contractor.

River Till compound:

OFFICE				
	M2	*1,15 CORRIDORS	*1,20 SOCIAL DISTANCING	TOTAL AREA
HE	108	16,2	21,6	145,8
BADGER	162	24,3	32,4	218,7
				364,5 m2

HE OFFICE REQUIREMENTS				
	PEOPLE	m2/PERSON	unit	TOTAL AREA
Open Plan Office	6	12	1	72
Hot Desk Area	2	12	1	24
Breakout Area	1	12	1	12
				108 m2

Countess compound:

OFFICE				
	M2	*1,15 CORRIDORS	*1,20 SOCIAL DISTANCING	TOTAL AREA
HE	108	16,2	21,6	145,8
BADGER	162	24,3	32,4	218,7
				364,5 m2

HE OFFICE REQUIREMENTS				
	PEOPLE	m2/PERSON	unit	TOTAL AREA
Open Plan Office	6	12	1	72
Hot Desk Area	2	12	1	24
Breakout Area	1	12	1	12
				108 m2

The high m² allocation per person allows for an increase in desk density without a loss of comfort, should it be required.

The compounds will be used by the site staff and labour involved in the construction of the project and then by the subcontractors and suppliers involved in the delivery stage. The compounds will have full illumination, and BADGER will ensure lights are located and orientated to minimise any impact to the WHS and the surrounding neighbourhood.

All accommodation will be connected to mains electricity, water, telephone service, surface water drainage, and a suitably constructed septic tank(s), accepted by the Local Planning Authority, to form a foul drainage system.

Preparatory works

Our BADGER Team, as Main Contractor will take over of the areas of the compounds once the Preliminary works contractor finish their archaeology, utilities, roads, ground investigation scope and after the Notice to Proceed is in place as per Contract requirements.

During the construction stage, specific procedures will be adopted in the CEMPs to ensure that sites of archaeological interest are protected. A site induction process and Toolbox Talks will be provided to inform all site personnel of the archaeological and historic environment constraints on site, the protection measures that are required and their obligations under the OEMP and generally to ensure that these are put in place and complied with. The Archaeological Contractor will ensure that their field staff involved in the mitigation programme are aware of the significance of the WHS and its OUV through provision of a Scheme-specific training programme.

Heritage Management Plans (HMPs) will be prepared indicating how the historic environment is to be protected in a consistent and integrated manner, coordinated with all other relevant environmental topics. The HMP will address:



- a) All temporary and permanent works, including boundary and protective fencing, vegetation clearance, ground investigations, demolition, utility diversions, reinstatement works, access routes / haul roads and works compounds
- b) Potential impacts on heritage assets both inside and outside the WHS from activities such as ground vibration, light pollution, dust, ground movement / subsidence, settlement, dewatering, and the impact on buried archaeological remains of construction activities (rutting, compaction of soft ground etc.)
- c) Archaeological mitigation measures to be deployed for the installation of the proposed Tunnel Movement Monitoring Stations (refer to **DAMS** drawings - Site 26 and **QS-3B section 4.6.2**)
- d) Issues of security for vulnerable sites / areas of archaeological interest outside the normal working hours, and at weekends
- e) Measures to avoid light spillage outside of the main compound area
- f) Procedures for the protection of unexpected archaeological discoveries
- g) Sites for preservation in-situ (including protective fencing) and sites for preservation by record.

BADGER will identify within its CEMP(s) how works are to be carried out in accordance with the HMP. In areas where archaeology or heritage assets are to be preserved (protected by temporary perimeter fencing, or beneath fill materials), archaeological Method Statements (MSs) will be put in place at the start of the construction works. These describe specific protection and other mitigation measures to be applied to the site or area of interest, following the procedures shown below and the HMP:

- a) How BADGER will preserve in situ sensitive archaeological remains and prevent deformation of topsoil / subsoil horizons (including no-dig solutions)
- b) Measures for monitoring continued protection of in situ archaeological remains and

- c) Where appropriate, how the measures would be reversed following the end of construction, for example at compound locations, the ground and the surface returned to its original shape and condition.

The Areas to be addressed in the Archaeological Method Statements include:

- a) All access routes, haul roads and traffic diversions
- b) Compound locations
- c) Cycleways between the realigned A360 north to the Stonehenge Visitor Centre and from the Realigned A360 south to Druid's Lodge
- d) East Parsonage Down
- e) Profiling on the Winterbourne Stoke bypass
- f) Profiling at Longbarrow roundabout.

The HMPs and MSs will be prepared by BADGER in consultation with Wiltshire Council and Historic England and, for sites within or affecting the WHS, HMAG, and approved by Wiltshire Council (in consultation with Historic England).

Spoil/Topsoil Stockpiling areas

The topsoil to be stripped within the site boundaries during the Construction Phase will be temporarily stockpiled until it is required for re-using on the various batters, verges and landscape areas, as per Environmental Masterplan requirements. These temporary topsoil stockpiles are all located within the DCO boundary and their indicative size shape and position are shown on **QS-13C** layout drawings; together with the selected areas indicated in the DAMS.

BADGER will include in our method statements before stockpiling the material, the mitigation measures to be adopted in compliance with the DAMS. These will include:

- No digging specific areas
- Protecting areas by temporary perimeter fencing or keeping in place the fence installed by the PW Contractor



- Installing the geotextile on the topsoil before to backfill in others defined areas.

The stockpiles will also be used to screen some working areas of the site, such as parts of compounds, from the public and to lessen the impact on views from the WHS. They will be sown with chalk grassland seed to reduce their visual impact. The stockpiles would normally be no more than 2 m high (**DAMS 5.2.62**).

No topsoil will be stockpiled within the WHS during construction works. An area within the Longbarrow Interchange has been allocated for the topsoil removed from the western tunnel portal approach cutting within the WHS; this topsoil will be used during works to downgrade the redundant section of the A303 within the WHS to a restricted byway.

The existing topsoil under and around the stockpiles will be retained in situ. A layer of High-Viz Orange Geotextile would be laid over the topsoil after light compaction by a smooth drum roller, and the topsoil stockpile placed over this. The geotextile would be carefully exposed during removal of stockpiles, taking care not to penetrate the original topsoil. We will prepare a Method Statement describing the stockpile requirements, in consultation with Wiltshire Council and Historic England. The Method Statement will be prepared with reference to the guidance on preserving archaeological remains published by Historic England (Historic England, 2016c) and based on a specific own study developed in consultation with the design consultant considering:

- The development of a geotechnical engineering model of compression effects
- The development of a project design for the preservation of archaeological remains.

Site Fencing and Hoarding

The compounds perimeter will be bounded by a combination of fencing, hoardings and the use of temporary earth bunds around (TW design will comply with a good integration within the landscape, both the fence and the embankment). These temporary vegetated earth

bunds will be created from excavated topsoil and will be located around most of the perimeter of the compounds as per the **OEMP** requirements. This will also be used to screen some parts of compounds, from the public and to lessen the impact on views from the WHS. The earth bunds will be sown with chalk grassland seed to reduce their visual impact. The earth bunds will normally be no more than 2 m high. We will plant mature trees at the existing hedgeline at the Longbarrow main compound and some hedge/shrubs on the top of the earth bund that follow the South border of the Longbarrow main compound to reduce the visual impact of the compound on the WHS (**TQ3A1.6&2.6**)

BADGER will comply with **OEMP MW-G28** regarding the adequate location of the palisade in order to avoid any possible damage. Buffer zones will be created between the compounds and existing retained vegetation through construction exclusion zones and suitable perimeter fencing.

Temporary fencing and hoardings will be provided for:

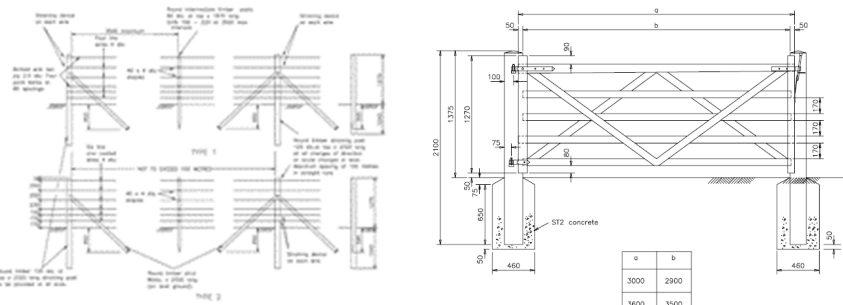
- Safety and security
- Livestock control
- Protection of heritage and environmental features.

Fencing and Hoardings will comply with the following requirements:

- Colour to aid integration into the landscape
- Will be kept free from graffiti and posters
- Will be kept well maintained
- Will not contain advertising or promotional information
- Fencing and hoardings in areas at risk of flooding, most notably within the floodplains of the River Till and River Avon, will be permeable to floodwater, unless otherwise agreed with the Environment Agency, to ensure that the fluvial floodplain and areas liable to other sources of flooding continue to function effectively for storage and conveyance of floodwater
- Fencing will protect existing water features from degradation and physical damage during construction



- Temporary fences will be of post and wire construction and comply with HCD H1 Type (i) or Type (ii). Types (iii) and (iv) (HCD H2) will not be permitted.
- Temporary gates in or impacting on the WHS will be timber (HCD drawing H21-H23).



Additionally, BADGER will provide:

- Site information boards
- Notices on site boundaries to warn of hazards on site
- Signage to indicate re-routed pedestrian/cycle paths.
- Within the Longbarrow compound, we will use Echo barriers not higher than 2m in order to mitigate aural impacts produced at certain premises such as the batching plants. We will make sure these are not visible outside the compounds (**TQ3A1.3**, **TQ3A2.3**, **TQ3A3.3**, **TQ3A4.3**).

All these components will be maintained during all of the construction phase.

Construction methodology for compounds, haul roads and temporary works area

The Main and Satellite construction compounds will be strategic construction hubs for core project management (Engineering, Planning, Construction delivery, H&S, Traffic Management, Security Management, General Services etc.), associated with the construction of the project. They will include an area for equipment

and materials storage, as well as providing the main welfare facilities for staff.

Once we have access to the area, BADGER will grade, level the site and then will pave the areas; before the final preparation of the areas with the connection of the utilities network and plant/equipment installation.

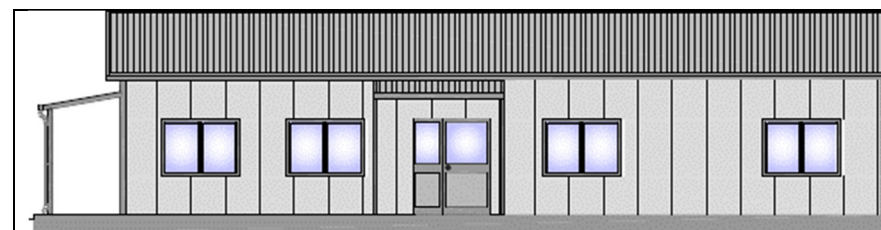
BADGER will take into account all the mitigation measures already described previously in this report and any requirements in the DAMS will be met.

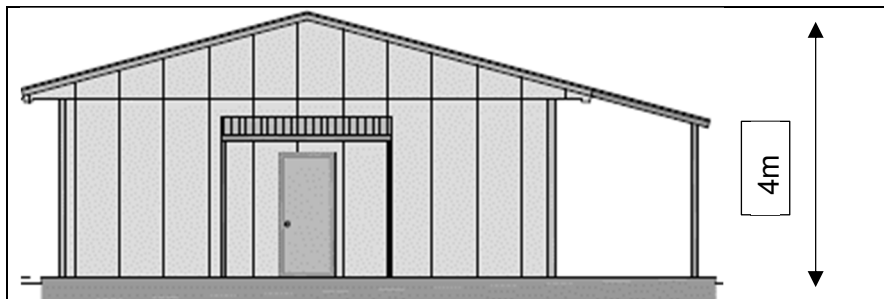
SITE OFFICES

As site offices will be temporary in nature, only there for the duration of the construction works, they will be prefabricated, constructed from portable or modular buildings for quick installation and removal, easy maintenance and low impact on environmental surroundings.

These will be standard sizes and will be fitted together to form the configuration required. Site offices will be easily transported on flat-bed trucks and set up on site using a crane. They will have four adjustable steel legs with attachments for coupling. Site office panelling will be made of galvanised steel sheet and a rigid insulation core. Windows will be designed to optimise light levels, with white walls and heavy-duty flooring that is easy to clean. They will be provided with anti-vandal protection, such as pyro-shield windows with steel shutters and high-security steel doors.

The prefabricated building will be positioned on top of a prefabricated element placed on the top of the filling material. This will provide a quick and effective mobilisation to site, complying with client requirements from the outset of the project. Indicative size shape and position of the buildings are shown on **QS-13C** layout drawings.





SITE COMPOUNDS AND WORKING AREAS

As previously mentioned, the Main Civils Compound north of the new Longbarrow Junction, and satellite compounds to the west of the River Till (off the B3083) and Countess East (north-east of Countess Services) will be established.

In these locations, surface disturbance will be minimised to ensure no impact to below-ground historical remains, existing topsoil will be retained in situ and protected with imported fill, separated by a layer of High-Viz Orange Geotextile to allow preservation of archaeological remains in situ. Provision is made in the Strategy for certain archaeological monuments to be excluded from fill areas, fenced off and protected (**DAMS 5.2.28**).

We will prepare a Method Statement (MSs), setting out how to preserve sensitive archaeological remains and prevent deformation of topsoil/subsoil horizons (including no-dig solutions) and how the measures would be reversed at the end of construction phase. The MSs will be approved by Wiltshire Council (in consultation with Historic England).

TEMPORARY HAUL ROADS

In order to allow access to all areas, two types of temporary haul roads will be required throughout the works:

Earthworks haul roads will be used predominantly by site traffic, such as dump trucks allocated for the earthwork activities. As the work proceeds, the routes of these earthworks temporary roads will be appropriately realigned as required and will often travel through

cuttings, across embankments and the landscape fill areas. No surface stone will be laid over these transient roads, unless required to maintain passage. The haul roads will be used all year including the winter months and will be maintained in accordance with item MW-TRA9 of the OEMP (as certified by the DCO). Work will cease if the weather is inclement.

All-weather haul roads will be protected by a surface layer of stone, will be used by road vehicles delivering concrete and other materials to the structure sites.

All-weather roads will be formed through the site from the Main Civils Compound at Longbarrow Junction North to Green Bridge No.1 at Ch. 2000; from the Tunnel Production Site to the Western Portal; and from the Eastern Portal to the Countess Interchange. These roads will be between 4m and 6m wide, with passing places.

The all-weather road between the Main Civils Compound and Green Bridge No. 1 lies outside the earthworks trace and will cross archaeological sites that will require protection and preservation of archaeological remains (Site 25), as well as sites where archaeological mitigation has been completed previously.

The all-weather haul road will be built considering the next steps:

- A layer of High-Viz Orange geotextile material will be laid over the existing ground to protect it
- A first layer of stabilised chalk fill will be laid on top of the geotextile
- A second layer of 200mm deep of 50mm crushed stone will then be overlaid on the geotextile and compacted in suitable layers using a vibrating roller
- Reinstatement will take place when the concrete works are completed. The layer of stabilised chalk and stone will be removed taking care to expose the High-Viz Orange Geotextile so as not penetrate the retained topsoil and either re-used for the subbase of the permanent pavement of the road scheme.

All other temporary all-weather roads will run within the chalk cutting.



In accordance with **MW-CH5** of the **OEMP** (as certified by the DCO), we will prepare a Method Statement setting out how we will preserve sensitive archaeological remains and prevent deformation of topsoil/subsoil horizons (including no-dig solutions), and how the measures will be reversed following the end of construction (e.g., removal of the all-weather haul roads). The Method Statement will be prepared in consultation with Wiltshire Council and Historic England and, for sites within or affecting the WHS, HMAG, and approved by Wiltshire Council (in consultation with Historic England). Implementation of the Method Statement will be monitored by the ACoW.

Construction plant will travel along the alignment of the Scheme using the footprint of the proposed embankments and cuttings, for example, from the Main Civils Compound northwest of the new Longbarrow Junction to the western tunnel portal. The indicative routes are illustrated on **QS-13C – Plan Layout-Compound Areas and Haul Routes**. Haul road maintenance and dust control measures will be adopted.

No haul roads are proposed within the WHS, other than those within the footprint of the proposed new permanent works. At the western section, an all-weather haul road will be established from the tunnel production area to the Parsonage Down area to enable the transfer of excavated material. This haul route will be constructed from material excavated from the Scheme construction and will run adjacent to, but outside of the main earthworks.

Haul roads will be appropriately modified throughout the construction phase to accommodate the different work scenarios. Further details are shown on **QS-13C** where we have included the different phases of the haul roads in the western part of the road scheme, before and after the completion of the section 1. These show the connection between the different points of the scheme, including the connection between the southern haul roads and the new haul road located on the westbound of the new A303 after the completion of the section 1.

At the western section, at the south-west of the scheme, we will build a haul route to facilitate the access to all construction sites.

A temporary crossing will be installed on the route of our internal haul road in order to gain connection between both sides of the B3083 byway. Safety boom barriers controlled by a banksman will be installed as safety measures in order to avoid collisions between B3083 traffic and construction site traffic.

These measures and the following additional ones will be recorded in the Site Traffic Management Plan. The crossing will be provided with Security fence, traffic signs (in both places, B3083 and haul route), signals indicators and gates on the haul roads which will be closed during non-working periods. CCTV cameras will be provided to control the gates during the non-working periods and in order to ensure a safe crossing. We will make sure the crossing on the B3083 is cleaned on a daily basis. Wash down facilities will be provided in each entrance/crossing with public highway network. Site access and egress points will be kept clean and in a safe condition at all times.

UTILITIES

Based on the information received within the tender documents and in particular **Vol 2 Part 2 Design and Technical Requirements**, the Preliminary Works Contractor will provide the connection to main water system and main power system in two specific locations inside the area of the Main Compound as shown on the **QS-13C – Plan Layout-Compound Areas and Haul Routes**.

BADGER will install and route the primary site services infrastructure around the full area including, but not limited to the following:

- Primary electrical supplies
- Mains water infrastructure
- Mains sewer runs (foul and surface water)
- Communications network ducting.

Temporary power, water and drainage will be installed and located to meet the needs of camps/welfare, working areas/construction, technical installations areas and along the internal compound's road. The installation will be phased to provide a supply on a zone-by-zone basis.



The principal system for 'service routing' is to bury them in excavated trenches (buried system). Should any (post-preliminary works) service / utility corridors require excavation, BADGER will avoid significant archaeological remains wherever possible and implement appropriate archaeological mitigation measures in accordance with the **DAMS**. Where utilities cross archaeologically-sensitive areas or areas where preservation in situ is required in the **DAMS**, a 'No dig' solution will be designed; the utility / service will be located within fill material for the compound road / compound area. For example, no dig utilities will be weather protected and when crossing an internal access or haul road covered by protection elements such as plates and the like. BADGER will prepare a SSWSI where service utility corridors cross archaeologically sensitive areas.

TEMPORARY WORKS AREAS

The main production area will be established on the west side of the main compound beyond a boundary limit at chainage 5250 approximately. Once we have access to the area, BADGER will grade, level the site and then pave the area; before the final preparation of the area with the connection of the utilities network and plant/equipment installation.

BADGER will take into account all the mitigation measures already described previously in this report and any requirements in the **DAMS** will be met.

The production area will be fenced and equipped with an access gate with a security checking point with a badge-controlled access system provided by BADGER.

A network of all utilities will be developed around the area to connect the main equipment and plant. The entire construction plant can be a significant source of emissions and therefore all control measures will be implemented to minimise any adverse impacts in accordance with the **Environmental Statement**. The site plant and equipment will be kept in good repair and maintained in accordance with the manufacturer's specifications.

Main Plant and Other Major Facilities (Main Compound)

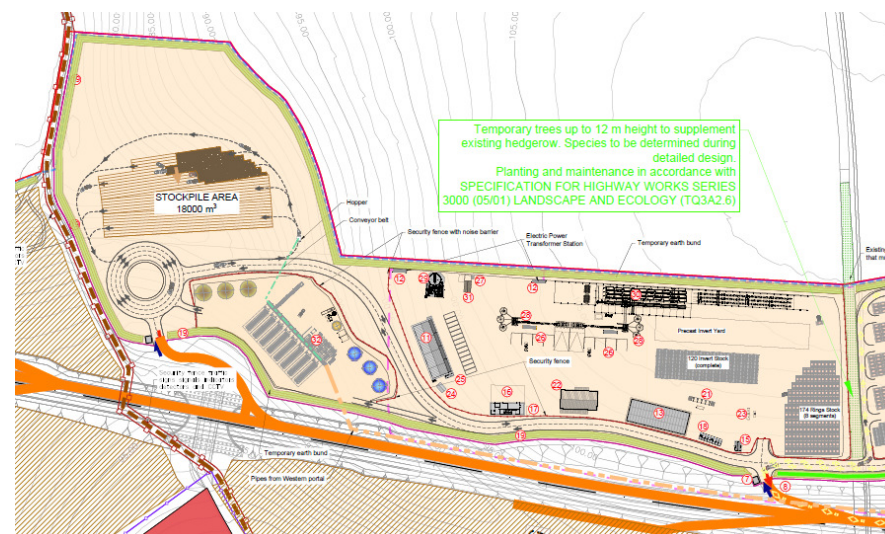
The Main Plant and major facilities foreseen within the production area at the main compound are:

- Precast yard and annexed facilities
- Batching Plants
- Spoil Treatment Plant (Slurry Treatment Plant).

As per **Environmental Statement** requirement **Chapter 7, Section 7.8, Table 7.4**, the Slurry Treatment Plant will be located to the west of the WHS and main compound and below the ridgeline. Reference location can be found in **QS-13C** layout drawings. These facilities will be provided with all necessary utilities' connection (electricity, water, sewage etc.) All plant and equipment within the production areas will be equipped with BPM to minimise noise and vibration effects, based on the requirements of the **ES Chapter 9, Section 9.8**.

The STP position is in compliance with the **ES-Figure 2.7 Construction Layout** as per clarification received from Highways England during the Competitive Dialogue.

The picture below (taken from **QS-13C**) shows the area dedicated to the STP.



Picture 4: Dedicated area for STP



The main features of the STP will be:

- Mud management section
- Separation section
- Press section.

The layout and main dimensions are shown in **QS-13C** and maximum height per section are as follow, based on the supplier specifications:

- Separation plant: 14 m maximum (with a concrete basin under the section)
- Slurry management section: The maximum height will be reached with silos, around 18 m. We can reduce with the height a bit with the supplier, by enlarging the diameter
- Pressing section: The housing will be at around 12,5 m high and the same as above for the silos (around 18 m).

1.2. Construction Workforce Accommodation Strategy

The number of our workforce will vary during the construction phase. The maximum monthly workforce in the peak of production has been estimated to be around 300 people and as an average we will have around 125 people on site. Our first estimation for the workforce accommodation would be around 150 people. BADGER priority will be to resource the project with local workers from the surrounding communities that will help to minimise the need for accommodation within the local area.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Longbarrow	0	0	0	0	52	52	52	87	87	97	117	100	108	108	125	115
Countess	20	20	20	20	34	34	34	34	34	34	34	85	75	75	65	63
River Till	20	20	20	20	76	76	76	76	76	110	92	92	102	112	97	97
TOTAL	40	40	40	40	162	162	162	197	197	241	243	277	285	295	287	275

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
100	92	92	115	120	120	120	112	80	80	93	93	83	75	74	103	88	81
73	36	36	53	53	45	35	35	42	42	49	50	60	10	10	10	10	10
110	100	109	114	111	115	119	63	41	34	35	35	35	15	0	0	0	0
283	228	237	282	284	280	274	210	163	156	177	178	178	100	84	113	98	91

Month	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Longbarrow	74	70	115	130	115	105	105	90	90	90	75	75	45	45	45	25
Countess	15	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0
River Till	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	89	85	130	130	115	105	105	90	90	90	75	75	45	45	45	25

51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69
70	70	70	60	60	45	45	45	30	30	30	30	30	30	30	30	30	30	30
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	70	70	60	60	45	45	45	30	30	30	30	30	30	30	30	30	30	30

***NOTE:** These figures have been obtained from a preliminary construction programme and this may change through the tender process.

Off-site Workforce Accommodation

BADGER's priority is to source local accommodation within the surrounding communities, enhancing business activity within these communities.

Our Human Resources Manager (HRM) will liaise with local property agents to assist with/facilitate an accommodation search for those incorporating to the project in need of lodging solutions, e.g., preparing certificates stating the staff member works for BADGER/ agreeing a cooperation framework with rental agencies.

On-site Workforce Accommodation

On-site accommodation will not be considered for the project.

1.3 Construction Workforce Shift Patterns

BADGER will set up shift patterns in compliance with the requirements set out in the **OEMP** and relevant tender documents, including **General Provision – Working Hours** (see table overleaf on page 12).



The intended normal working hours (with the exception of underground works and related activities) will be from 07:00 to 19:00 on weekdays and from 07:00 to 13:00 on Saturdays. Sundays, Bank Holidays or Public Holidays will not be normal working days. BADGER will adhere to these normal working hours for each site as far as reasonably practicable. Tunnelling works and associated activities will be carried out on a 24 hours 7 days per week basis.

Below the list of the requirements from the **OEMP** that BADGER will comply with during the delivery of the Project.

Normal working hours, except for Earthworks and tunnelling works
07:00 -19:00 Monday – Friday 07:00 – 13:00 Saturday
Earthworks
Summer: 07:00 - 22:00 (British summer from March to late October) Winter: Normal working hours
Tunnelling works and associated activities
24 hours 7days/week basis
In two Specific sites (Between chainage 3520 –chainage 4180 and chainage 11300 – chainage 12400), the following hours will be considered
07:30 – 18:00 Monday – Friday 07:30 -13:00 Saturday
Proposed shift pattern for Tunnelling works
Shift Rotation 7/2 7/3 7/2 with 4 gangs on 8 hours

Suspension of works for solstices:

The surface works within the western section of the World Heritage Site (WHS) (location: chainage 6000 to chainage 7500), will be suspended during the summer solstice (for a period of up to 48 hours) and at the winter solstice (for a period of up to 48 hours). The timing

of the suspension will be determined, based on the precise timing of the solstices in that year and defined within the **CEMP** for each relevant year.

This suspension will not apply to the tunnelling operation, tunnel related activities or transport of tunnel arisings from the tunnel boring machine to the arisings management area at Longbarrow.

Tunnelling Works hours and external works hours

Tunnelling and directly associated activities such as removal and treatment of excavated material, supply of materials, supply of precast segments, extension of power HV cable, installation of ventilation systems, safety equipment and maintenance of tunnelling equipment will need to be carried out on a 24 / 7 basis. These working patterns will be developed once tunnelling procedures are in place.

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

For external works, we will set up mainly dayshift works. In some conditions during the delivery stage, nightworks will be needed to complete some works; there may be a requirement to undertake occasional works on evenings/weekends/nights/ and/or bank holiday, such as to tie in the Scheme into existing roads and bridge installations. This will be determined by BADGER once appointed and agreed with Wiltshire Council through the **CEMP**. This will be allowed as per **OEMP MW-G14** (Additional working hours).

Site Specific Working Hours

At certain locations, a different set of working hours will apply in order to limit the potential of noise impacts on residential areas and heritage assets north of both Winterbourne Stoke and Amesbury. These hours are the same as Wiltshire Council's standard hours for



noisy activities during construction. The specific locations to apply these working hours are:

- North of Winterbourne Stoke, Areas between Ch3520 to 4180 (UBR B3083 and beyond River Till viaduct)
- North of Amesbury, Area between Ch11300 to 12400 (Countess Roundabout).

BADGER may need to undertake work within the existing highway boundaries during the night, Saturday afternoon, Sunday and/or bank holiday working for reasons of safety or operational necessity and this may involve consecutive nights, work over weekends, and may, on occasion, involve longer durations. Activities outside core working hours that could give rise to disturbance will be kept to a reasonably practicable minimum.

Repairs or maintenance of construction equipment that are required to be carried out outside of core working hours will normally be carried out on Saturday afternoons or Sundays between 09:00 and 17:00.

In the case of work required in response to an emergency or which if not completed would be unsafe or harmful to the works, staff, public or local environment, Wiltshire Council will be informed as soon as reasonably practicable of the reasons for, and likely duration of the works. This information will also be made available to The Authority helpline and could include incidents such as where pouring concrete takes longer than planned due to equipment failure or where unexpectedly poor ground conditions, encountered whilst excavating, require immediate stabilisation. All the activities to be performed in the project will be planned in such a way to avoid any emergency.

The definition of the final shift patterns will need further evaluation.

1.4 Construction Workforce Travel Strategy

BADGER will develop a **STP** (Site Travel Plan) that will be included within the **TMP** (Traffic Management Plan). This will include a section

outlining the Construction Workforce Travel Strategy, in compliance with the requirements and local Authorities. Final agreed routes will be detailed within the **TMP** and all subcontractors will be provided with copies throughout the duration of the works. The dedicated plan will include:

- The estimation of the workforce for each site works during all the phases of the works
- Identification of a Travel Plan Coordinator inside our general services structure organisation and a description of their responsibilities
- Key workforce traffic issues to consider for each compound/construction site or group of sites
- Site activities affecting the surrounding transport network, including relevant context plans
- Anticipated workforce trip generation and how it may change during the construction process
- The measures used by BADGER to reduce worker vehicle movements, particularly at peak periods, including shift rotation periods taking place out of peak hours
- Travel mitigation measures that will be introduced to reduce the impact of construction workforce on the transport network
- Target to reduce individual car journeys by the construction workforce
- Monitoring the impact of the workforce on the community in its travel to and from work.

The construction site and access routes will be organised, allowing vehicles transporting the workforce and pedestrians using site routes to move around safely. 'Vehicles' includes cars, vans, SUV, minibus etc.

Car parking areas

On-site car parking for staff and construction operatives will be provided within the compound adjacent to the buildings.

BADGER will provide the site with allocated car parking areas at the main Longbarrow compound and satellite compounds. We will



provide a hard standing and access for a minimum of 293 cars adjacent to the office, where a minimum of 71 places will be allocated for the overseeing organisation. Car park areas will comply with the following requirements:

- Segregated walking routes to the main entrance of the office
- Five of the parking spaces will be reserved for visitors parking
- An appropriate number of disabled spaces will be provided
- Drop off area sufficient for 3 cars will be provided close to the main entrance of the office
- Covered and secured cycle parking for 10 bicycles will be provided close to the main entrance of the office
- The main car parking area in Longbarrow compound will include electric car charging points for a minimum of 15 cars
- All external lighting in the car park will be energy efficient
- Car parking and hardstanding facilities at the principal accommodation for the Overseeing Organisation will be available from 12 weeks after the first access date until 52 weeks after the Completion of section 3A.

Car Park Area	Longbarrow	River Till	Countess
Client	71	5	5
BADGER	70	10	10
Workforce	30	30	20
Disabled	3	1	1
Mini bus	2	1	5
Bikes*	10	10	10
Electric cars	15		
Visitors	5	2	2
Walking routes*	1	1	1
Drop off area	3	1	1
TOTAL	199	50	44
*Excluded in the TOTAL			

Additional information such as position, layout, access and egress points of the foreseen car parks are shown on the **QS-13C** Layout Compounds Drawings and haul routes.

Our on-site car parking will be available and mostly used by workers, construction operatives, contractor staff and overseeing organisation. We will incentivise car sharing and the reduction of individual car journeys and discourage parking on residential streets by the following measures:

- Tool box talks to all staff involved in the project (workers, construction operatives, contractor staff and overseen organization) explaining the advantages of the car sharing i.e., the savings in terms of CO2 emissions and fuel
- Inductions and training for all site staff, including subcontractors, on community relations requirements to minimise community impact
- Establish ride sharing programmes or use shuttle buses to transport workers to and from their accommodation.
- Undertake traffic modelling surveys to determine key routes for the workforce and how to best use ride sharing options to minimise local traffic impacts. This will also include considerations around start/finish times
- Implement incentive programmes for staff to use car sharing or shuttle bus options. (We will discuss with the local council the implementation of the shuttle bus across Amesbury and Winterbourne Stoke to pick up staff at selected bus shelters to transfer to the compound car park location, we will also coordinate with local bus companies) **(TQ2B3.1)**
- Minimise on-site parking availability to encourage ride sharing opportunities, with a parking permit system in place. Workforce requiring on-site parking permits will need to demonstrate ride-sharing or shuttle bus services are not a viable option. Permits will need to be renewed quarterly.
- Review workforce travel movements on a quarterly basis to ensure logistics plans and protocols remain fit-for-purpose and continue to reduce the impact to the local community.
- Through site inductions and toolbox talks to all staff involved in the Project we will discourage workforce parking on the public highway. As proactive measures for this purpose, the Community Relations Manager's team will monitor roads close to the worksite



and local residents will be encouraged to report instances of site workers parking inappropriately. We will carry out inspections and surveys on how workers travel to the site. Anyone found to be not adhering to this requirement will undergo retraining.

The workforce will be transported from car park locations to site by minibus using the site internal haul roads. Transportation will be done in the hours before and after the start and end of the shift time, minimising the traffic around the highways scheme and utilising the permitted routes for construction traffic as shown in **QS-13C**. Further details are provided in **section 1.9** of this document.

The average distance from labour accommodation to the site is 3-7 miles. Further considerations will be taken into account from a health and safety point of view. If COVID-19 guidelines are still in place, we will adopt the following mitigation measures as a minimum:

- Social distance guidelines for the workforce transportation
- PPE e.g., sanitary masks
- Shift schedule transportation for separate workers.

1.5 Temporary Power Requirements and Supply Arrangements for the Site

The power connections will be required at both ends of the Scheme to provide power to the construction activities and compounds. New electricity cables will run along compound internal roads or close to the fence corridor and be buried at a depth of about 1m when not running through archaeologically sensitive areas.

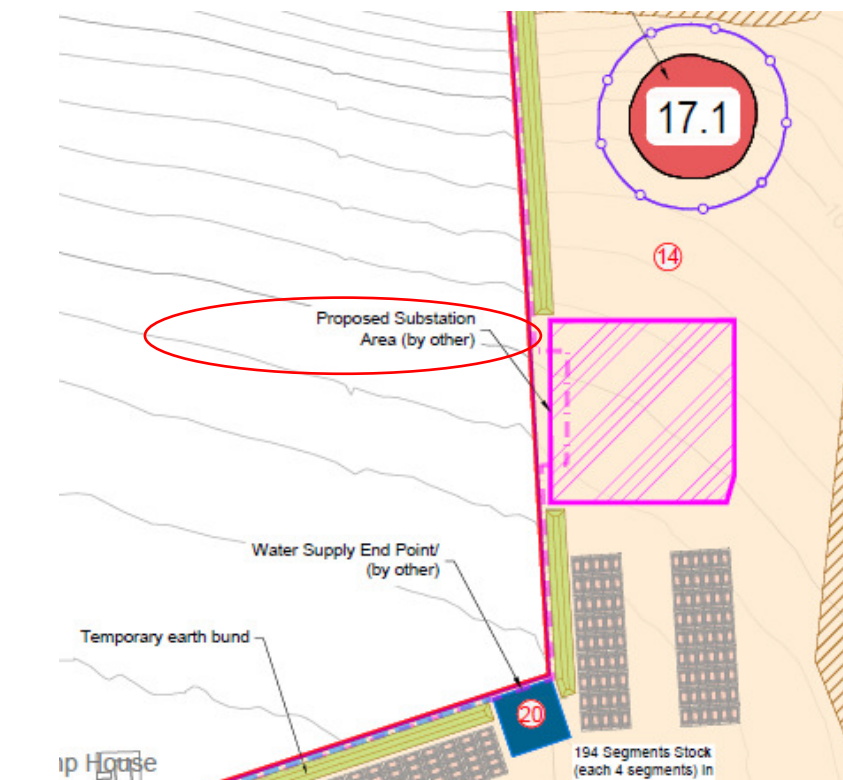
At Longbarrow construction compound the electricity supply will be guaranteed by SSE who will supply and install a substation within the area as shown on the **QS-13C Layout Compound drawing** (*Scottish & Southern Electric (SSE) are installing two (2) No. 11kV metering circuit breakers to provide a 30MVA supply to the Longbarrow construction compound-V2P2 Section 23*).

Where the existing network is not available or it is not able to supply the required capacity, electrical power will be produced and supplied

by a diesel electric generator. This approach can be considered to guarantee the preliminary mobilisation and preparatory works.

BADGER will provide all equipment from the busbar within the eleven (11) kV cable termination box on the incoming SSE electrical supply substation to the Longbarrow construction compound and related plant and facilities (switchboards, distribution boards, breakers, cables etc.). (*The SSE switchgear is configured to accept three (3) x 630mm² AL XLPE cables per phase.*)

An eleven (11) kV switch house will be provided adjacent to the SSE substation compound from which the electrical supply to the Longbarrow construction compound will be distributed.



Picture 5: Proposed substation area



The connection between the SSE substation and the adjacent eleven (11) kV switch house in the Longbarrow construction compound will be provided according to SSE standards and under the supervision of an SSE authorised person.

All electrical supply cables to the Longbarrow construction compound will be provided for maximum load conditions under an N-1 operating scenario. We will make sure the SSE substation in the Longbarrow construction compound is provided with:

- An emergency power off (EPO) to trip the SSE substation eleven (11) kV metering circuit breakers (CB) and
- Metering cabinets containing metering equipment.

Metering cabinets to the SSE substation in the Longbarrow construction compound will be located within twenty (20) metres of the SSE substation (SSE have indicated that it is desirable to be within 20 meters of the substation to reduce the burden on the metering current transformers (CT).)

At the eastern end of the Scheme, the temporary power for the Countess Satellite Compound will be connected to the existing network from the closest utilities' corridor.

Such services will be provided by us for use solely in connection with the proper execution of the works. We will comply with all laws and regulations of the public utility service providers and relevant authorities concerned.

We will provide and maintain all installations associated with such services, taking all reasonable precautions to safeguard the health and safety of all persons and the security of the site.

The HV supply for the TBM work front through the western tunnel approach will be provided by laying a temporary electric line from TBM facilities all the way through the new eastbound alignment of the A303 until it reaches the location of the TBM. This temporary supply line will be length extended as per the advance progress of the TBM. This extension of HV power supply will be recorded in the TBM cycle of works that will be defined upon operation. See the

sketch shown in the **QS-13C Layout Compounds Drawings and haul routes**.

We will provide a temporary generator at the launching shaft for the TBM just in case there is a power outage or sabotage for the following reasons:

- TBM must be in operation at all times
- H&S reasons (Power is needed inside the tunnel for the proper running of all the associated installations including emergency installations/measures).

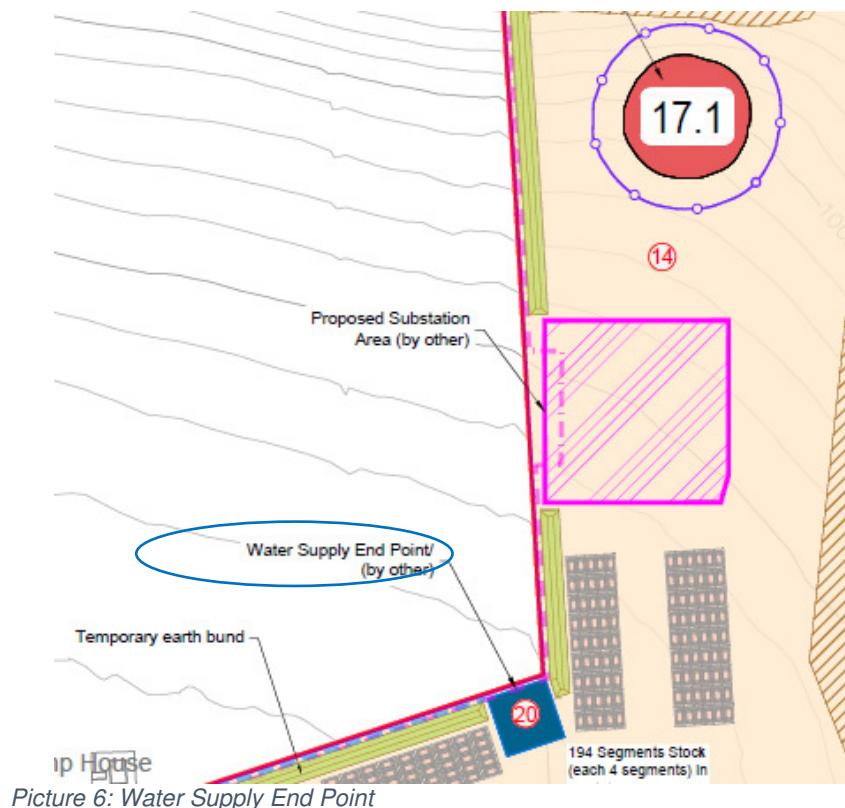
1.6 Temporary Water Requirements and Supply Arrangements for the Site

Mains water connections will be required at both ends of the Scheme and will be used to provide potable water to the construction activities and compounds and during operation for the proposed Fixed Fire Fighting System (FFFS).

At the western end of the Scheme, a new water pipeline will connect into an existing supply close to the B3083, north of Winterbourne Stoke and will be routed east, before the River Till Satellite compound and then through farmland to the north of the existing A303 alignment, beneath the River Till (using a Horizontal Directional Drilling method), and east to the Longbarrow Junction area to serve the main construction compound. It will subsequently be extended east along the new A303 alignment to the western tunnel portal to serve the operational tunnel requirements.

At the eastern end of the Scheme, a new water pipeline to serve the Countess satellite compound will be connected into an existing water main from the closest corridor of utilities.

The Longbarrow construction compound water supply will connect to the incoming water supply to the compound provided by Wessex Water prior to the Contract Date. Details can be found in the **QS-13C Layout Compounds Drawings and haul routes**.



Picture 6: Water Supply End Point

Wessex Water are terminating the incoming water supply to the Longbarrow construction compound at a chamber containing double non-return valves. The incoming water supply can provide water at a minimum flow rate of 5 l/s. Prior to the non-return valve, additional chambers containing mechanical flow control and a flow meter will be provided. All chambers are approximately 1.2m x 0.9m and 1.5m deep. Typical details of water supply and storage tank provision are shown on drawing **BO671-1300**. Water storage will be provided in the Longbarrow construction compound and will have a Type AA air gap.

BADGER will provide all equipment (pipework, storage and M&E) to the Longbarrow construction compound downstream of the non-

return valves on the incoming water supply. We will maintain the incoming water supply from the connection to the water mains at the B3083 until the water supply is adopted by Wessex Water on completion of section 3A.

Pumps will be provided to distribute the water supply around the Longbarrow construction compound and will maintain a net positive suction head during operation. All water supply works and equipment will:

- Comply with Wessex Water's policy for connections to their network
- Be provided to Wessex Water for review prior to connection to their network.

1.7 Strategy for Temporary Lighting

We will define within the **CEMP**, the proposed approach to site lighting around the construction compounds and elsewhere along the route alignment, giving consideration to the WHS context and other environmental constraints. We will consult with members of The Heritage Monitoring Advisory Group on the approach to site lighting in relation to matters within or affecting the WHS.

In accordance with **DCO Requirement 5**, we will develop a **Scheme-wide Heritage Management Plan (HMP)**, indicating how the historic environment is to be protected in a consistent and integrated manner with our strategy for temporary lighting and coordinated with all other relevant environmental topics, addressing all the points mentioned in **OEMP MW-CH1**.

At important ecological sites, if site lighting is required in the River Till valley or at the existing River Avon Viaduct, adjacent to known bat roosts at Countess Junction, the Nile Clumps, and woodland areas, we will use directional lamps / hoods / cowls, to ensure that light-spill to the watercourses and their banks is minimised. In order to minimise disturbance to environmentally sensitive areas, temporary lighting will be carefully sited.



Lighting will be at the minimum luminosity necessary and we will use low energy consumption fitting, avoiding light spillage. Lighting will also be designed, positioned and directed so as not to unnecessarily intrude on:

- Adjacent buildings
- Sensitive heritage receptors (e.g., scheduled monuments; non-designated assets or asset groups that contribute to the OUV of the WHS; listed buildings; registered parks and gardens)
- Ecological receptors
- Structures used by protected species
- Other land uses.

Lighting will be minimised bordering the WHS. We will use **led** lighting at the minimum luminosity necessary and use low energy consumption fittings, avoiding light spillage at the Portal Site. The lighting will also be designed and **positioned at low level** and directed so as not to unnecessarily intrude on sensitive receptors.

Lighting strategies will be designed to reduce light spill on important biodiversity features (*Bat Conservation Trust (2009) Bats and Lighting in the UK, Bats and the Built Environment Series. Bat Conservation Trust.*) And (*Bat Conservation Trust (2014) Interim guidance: Recommendations to help minimise the impact artificial lighting. Bat Conservation Trust*).

Lighting will be designed to prevent unnecessary disturbance and interference to local residents or passing motorists on nearby roads.

Workplaces, buildings and road systems, during the night and in general, when natural light is not sufficient, will be illuminated by artificial light. Light colour will not impact on signs perception.

Lights points will be positioned to avoid:

- Workers being affected by too much light
- Shadow zone creation
- Top light dispersions
- Light pollution.

When night working activities are in progress, the related areas will be illuminated with a centralised plant or, in case of isolated spots, with mobile lighting towers. The level of illumination will be in accordance with the Technical Requirements.

The illumination of the roads inside of the logistic and industrial areas will be provided by illumination poles equipped with “ad hoc” sized lamps.

The site yards and plant areas will be illuminated by illumination poles or lighting towers equipped with “ad hoc” sized lamps. Mobile sites will be provided with mobile lighting towers, providing the required illumination during the night construction activities.

1.8 Strategy for Site Waste Management

BADGER will develop the **Site Waste Management Plan (SWMP)** which will define the work practices, environmental management procedures and management responsibilities relating to all aspects of waste management for the duration of the construction phase of the A303 Scheme. This SWMP is based on the **OEMP** and BADGER’s own experience of infrastructures and large-scale earth moving projects. This document will form part of the **CEMP**, which will be a live document during the construction period. We will ensure environmental and waste requirements are included on requisitions and in subcontracts and orders.

The Site Materials and Waste Manager will be responsible for ensuring that all materials and waste elements of the CEMP are complied with during construction. He/she will be in charge of preparing the **Site Waste Management Plan (SWMP)** and will be responsible for implementing the SWMP and **Materials Management Plan (MMP)** throughout the construction of the Scheme. He/she will ensure objectives and targets for reducing, reusing and recovering waste streams on site are set, tracked and reviewed. The SWMP will ensure that the waste hierarchy principles are the priority in managing wastes with disposal as the last option



and to ensure that waste is disposed of economically and safely in line with the SWMP.

The SWMP will:

- Identify and record the types, quantities, and destination of waste arisings from the scheme
- Report this information to The Authority on a periodic basis and will be updates as appropriate
- Define measures to minimise waste arisings from the scheme
- Recover waste materials in accordance with the principles of the waste hierarchy.

The MMP will:

- Be developed in accordance with CL:AIRE Definition of waste: Development industry code of practice
- Manage the re-use of excavated materials, including tunnel arisings and material excavated for highway cuttings
- Incorporate an earthworks method statement covering the excavation, on-site movement, placement and compaction of excavated material.

The estimated quantities of earthworks materials (excluding tunnel arisings) are expected to be balanced, in that the quantities of excavated material would be approximately equal to the quantities of fill required, and hence there would be no requirement for off-site (outside the boundary of the Scheme) transport, reuse, recycling or disposal of surplus excavated soil and rock. Refer to **QS-11C** for more detail.

In the unlikely event that off-site disposal of excavated soil is required, the material will be characterised to determine firstly whether it is Hazardous or Non-Hazardous waste in accordance with the Environment Agency's Technical Guidance WM3. The appropriate disposal facility will, where required, be determined through Waste Acceptance Criteria (WAC) analysis as required.

In addition to these earthworks, it is estimated that an additional 900,000m³ of tunnel arisings will be generated from the tunnelling

works. Excavated material will be re-used within the boundary of the scheme, to the east of Parsonage Down National Nature Reserve. Excavated material will be managed in accordance with the MMP and will not be considered as a waste. The on-site management of this excavated material will therefore not require the use of any existing waste management capacity in the region and will not have significant waste management effects.

This is a major achievement in diversion of waste from landfill with the added significant environmental benefits of reduced lorry movements for material offsite and resultant emissions saving.

We will produce a detailed **Soils Management Strategy** (SMS) based on the outline SMS within **Annex A.3** of the **OEMP**. The SMS will identify the nature and types of soil that will be affected and the methods that will be employed for stripping soil and the restoration of agricultural land (where the restoration of agricultural land is required). It will be consistent with the DAMS and any Heritage Management Plan, Archaeological Method Statement or SSWI. The detailed SMS will be appended to the **CEMP**. BADGER will follow the guidance in Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) when handling agricultural soils and in particular the land to be reprofiled for use as permanent chalk grassland.

When construction is taking place on or adjacent to land affected by contamination, materials used for the Scheme will be proven "Suitable for use" by adoption of acceptance criteria and will be deposited under either environmental permitting regulations or the Definition of Waste: Development Industry code of practice.

Earthworks material would generally be retained and re-used within the Scheme, but there may be some small quantities of contaminated material that would need to be transported to licensed waste management facilities.

Construction Waste Types



The construction of the scheme is expected to generate approximately 53.000 tonnes of waste (approximately 30.000 m³), excluding excavated material which would not be managed as waste. Estimated quantities of materials and waste generated during construction phase can be seen in the **ES Chapter 12** Material and waste, Table 12.11: Estimated quantities of waste.

Our aspirational goal is for a recovery rate of 70% for construction and demolition waste (excluding excavated soils and stones), by applying good industry practice to management of the waste materials generated by the scheme.

We will aim to achieve a rate of 22% use of secondary and recycled aggregates, for those applications for which substitution of primary aggregates is technically and economically feasible. We recognise that due to the location of the site, this target will be complex to achieve.

The SWMP will establish the procedures and standards which must be adhered to, and manage, dispose and minimise hazardous and non-hazardous waste to ensure:

- Materials are minimised at source, i.e., ordering and storage of materials
- Materials are minimised prior to removal, i.e., size reduction, compaction
- On-site segregation of waste will be undertaken at each location. As a minimum, hazardous waste will be segregated from non-hazardous waste
- No unauthorised deposit or disposal of waste materials
- No unauthorised treatment of waste
- No escape of waste material
- Waste is only transferred to an authorised person
- A compliant transfer note is produced for waste collection.

We will provide suitable containers for reception and temporary storage of waste on site, and we will arrange for waste to be periodically collected and transported to a suitably licensed facility for

treatment or disposal. We will be responsible for obtaining any necessary permits or exemptions for on-site management of waste.

Training

Our SMWM will ensure that key objectives and procedures outlined in the SWMP are communicated to all site personnel initially via the Site Induction and then by regular toolbox talks. Only trained personnel will manage particular tasks such as refuelling plant and equipment, managing the stores, water quality monitoring and supervising the segregation and collection of waste. Our trained people will ensure that all site personnel are aware of achieved recycling rates for the site and will encourage site personnel to continue to try to increase the rate of recycling and reuse of materials on site.

BADGER will also display charts on the site Environmental noticeboard in the compound that will present monthly waste management statistics and the site's progress towards achieving annual project objectives and targets for waste recovery/recycling. Waste management questions will feature in the Environmental assessments that will be held on a monthly basis to gauge environmental awareness on site.

Copies of the SWMP will be displayed on site offices and site canteens for referral by site personnel. Our SMWM will ensure that all site personnel are informed on how to segregate waste and recycle correctly with signage on all bins and skips to ensure appropriate disposal.

Auditing and Reporting

BADGER will undertake regular audits and inspection of waste management activities to ensure compliance with requirements of the approved SWMP, statutory controls and other scheme policies and procedures relevant to the management of surplus excavated material and waste.



Within these audits, BADGER will record observations and actions for close out. Each action will be given a priority listing, a date for close out and will be assigned to a team member.

BADGER's Environmental Manager will maintain records of all arisings, movements and treatment of construction and demolition waste discards during the construction stage of the project. These records will provide summarised data, giving an account of waste management activities/movements for each and will also be presented within the monthly environmental report.

BADGER's Environmental Manager will also liaise with specialist consultants dealing with hazardous wastes and will review draft reports issued by these consultants before issuing a final draft to Highways England for review and comment. Our Environmental Manager will also address and close out any non-compliance issues raised relating to waste management.

1.9 Procedures and Routes for the Transport of Materials and Plant into the Site, including a description of the site access and egress routes and points

Permitted access routes to and from the Site

Our Traffic Management Plan (TMP) will illustrate the relevant procedures, requirements and restrictions of the routes to be used for the transport of materials and plant into the site. Our Traffic Manager will be responsible for the development and correct implementation of this plan.

Along the A303 scheme, BADGER will be compliant with the requirements as shown in the contract drawings **HE551506-AMW-GEN-SW_GN_000_Z-DR-CH-4101-P02** and **HE551506 AMW-GEN-SW_GN_000_Z-DR-CH-4102-P03** where all the allowed site Access routes for construction traffic are shown. This information is also depicted in our **QS-13C** drawings:

- Permitted routes
- Permitted routes (Max weight 3.5 tons)

- Access and egress points
- Haul routes.

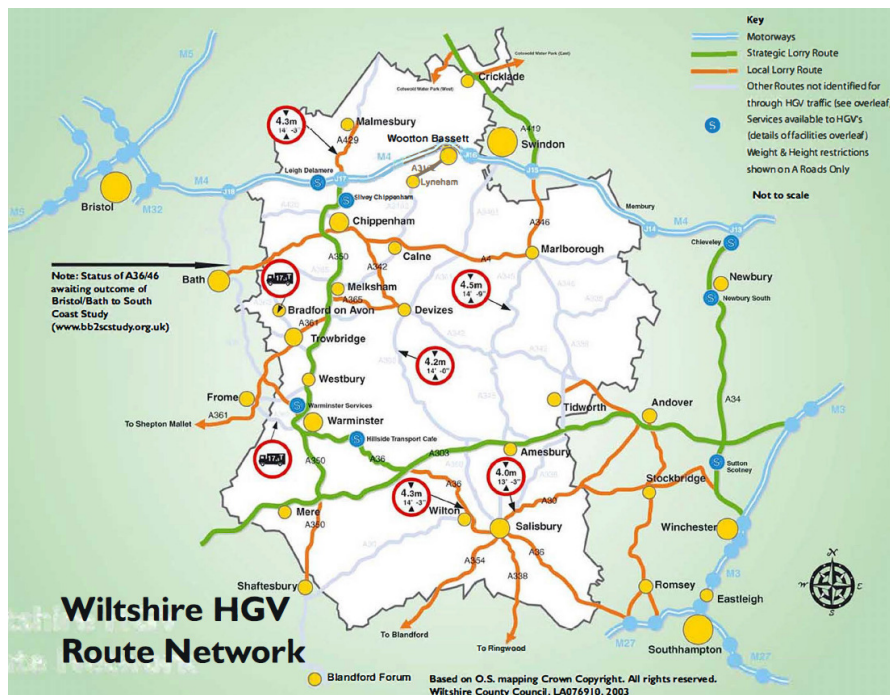
BADGER will guarantee access to all private and commercial properties throughout the duration of the works. We will liaise with all affected third parties to agree access arrangements and any security measures deemed necessary.

Access along residential roads will generally be prohibited unless there are clear reasons for their use. Where residential roads are to be utilised, residents will be informed in advance of the timing of the works.

All construction traffic, including the delivery of any kind of materials, plant or elements needed on site will be done via the permitted routes, trying to avoid the use of local roads as much as possible. When this is unavoidable, BADGER will consult with the relevant authorities, such as Wiltshire Council and Highways England prior to use. Once permission is granted, BADGER will keep running these roads for the minimum time necessary.

A key component of Wiltshire's Freight Strategy is the establishment of a network of advisory lorry routes. This network currently comprises a series of strategic and supporting local lorry routes.

Freight Route Network Map provided by Wiltshire Council is shown in the picture below: (The complete drawing can be seen on the Wiltshire Council website)



Picture 7: Freight Route Network Map provided by Wiltshire Council

Access routes for construction traffic will be via special and trunk road network(s) and principal roads on the road network only. Main routes to follow for all the deliveries will be:

- Motorways/trunk roads
- A36 (North)/A303 West of A36 junction
- A34/A303 East of the scheme

BADGER will make sure that all deliveries of construction material/equipment take place during 'non- peak' time hours, within the "Normal Working Hours" established as a 12 hour period between 7am and 7pm (MW-G12), other than in exceptional circumstances agreed with the relevant authority (e.g., abnormal loads).

Long distance journeys from the south coast will be routed by alternative roads, such as the A34. The A36 to the south of the A303

and through Salisbury is usually used for local journeys only and long distance movements will not be encouraged through these.

By using these routes, drivers will reduce the stress of driving by avoiding unsuitable roads and minimise their impact on the environment and local residents while still meeting the economic needs of the County.

BADGER will perform a survey of the condition of the surrounding highway network before the commencement of construction activities and will provide a full report with photographic and video evidence. We will rectify any possible damage caused by the construction activities or associated plant movements.

When entering into any subcontract for the execution of the works, including the supply of plant and equipment and materials, we will incorporate the requirements of this appendix into any subcontract arrangements.

Site Access and Egress Points

We will develop a Site Access Plan (SAP) – to be included within the TMP in consultation with Wiltshire Council, identifying site access and egress routes and points that will be used by BADGER and the mechanisms for how they can be varied.

We will assign a unique reference number for each access point to the site. Routes and access points will be planned daily by our Traffic Management Planner. Number plates of all vehicles approved to access the site will be recorded on our database, including supply chain partner vehicles. We will use ANPR to verify that approved routes and designated access points have been used. Security control kiosks will be installed at the access of the site compounds and plates will be checked.

Our TM monitoring team in the ITCR will use our CCTV system to observe vehicle movements to and from the site and work with our logistics team to address any issues.



All site access points will be left in, left out, except for the access to River Till compound from B3083. Crossing traffic lanes to enter or exit the site will not be allowed to avoid disruption to traffic flow and risk of collisions.

Access and egress to the main **Longbarrow main compound** will be through 2 different points:

- Access from the A360 to the main car park adjacent to the main offices
- Access from the new northern roundabout in Longbarrow junction.

During the first months of the construction phase, while the new northern roundabout in Longbarrow junction is being constructed, access and egress point will be through the A360. Once the new northern roundabout is operative, the main access/egress point will be located there and the entry/exit from the A360 will remain open.

Access and egress point to the **River Till satellite compound** will be from the B3083 at the south west corner of the compound with a right in/ left out to /from the dedicated compound area. This access will be available whilst the satellite compound is operative. An additional access will be provided through the haul road located at the south east of the compound.

Access to the **Countess satellite compound** will be restricted to the eastern access/gate to the site compound, with egress restricted to the western site gate. Site Traffic will not be allowed use of the internal road network of the service station.

Details for access and egress locations can be found in the **QS-13C Layout Compounds Drawings and haul routes** and in addition within **QS-13B Traffic Management Strategy, section 3**, where the access to the Service station/Satellite compound from the A303 is clearly shown, in compliance with the standards, through the different arrangements of slip roads during the traffic management staging to allow the construction of the permanent scheme road, east of the roundabout.

At the western end of the scheme, at the end of the new Winterbourne Stoke bypass, where the existing A303 ties in the new road (chainage 2000), BADGER does not intend to use this point as a main site access/egress and will install a road restraint system with security fences to keep closed the area between the contract boundaries.

Only occasionally, if necessary, the access will be opened temporarily to allow the entrance of truck/suppliers and this will be determined by BADGER once appointed and agreed with Wiltshire Council and local authorities through the **CEMP**.

In the picture to the right, captured from **QS-13C**, the details of the arrangements considered by BADGER at the western end of the Longbarrow bypass where the existing A303 (green line) ties in the new A303 are shown:



Picture 8: Western Tie In

Site access / egress points will be kept clear, clean and in a safe condition at all times and we will design and construct these points to such a standard as to enable the smooth access / egress of vehicles in a forward direction, to limit disruption to road users due to use of the access points. The SAP will identify proposals and the process



for the removal of such access and egress routes when no longer required for the scheme works.

BADGER will ensure that wheel wash facilities will be available prior to the main exit gates in the compound, and work sites access and egress points for all vehicles exiting the site, to ensure mud, dirt and dust etc. is not carried onto the public highway during the works. These will be suitable for all site vehicles.

Temporary 'Slippery Road Ahead' warning signs to TSRGD diagram no. 557 will be erected as necessary.

Movement of Machinery and Plant Across Public roads

We will ensure that labour, plant and materials will be kept within the boundaries of the site and will not use areas of carriageway open to the public and live traffic, except in the following circumstances:

- Labour and plant required for traffic management purposes
- Labour, plant and materials being moved to and from the Working Area by suitable vehicles.

Although the proposed haul routes and the alignment of the Scheme will be used for the majority of on-site vehicle movements, it will be necessary to use the existing A303 for some operations. For example, while much of the material excavated at the eastern end will be used to construct the embankments for the Countess Roundabout flyover, there will be some surplus chalk material that will need to be transported during off-peak hours periods along the A303 from this eastern section of the works towards the allocated disposal areas in the western section of the scheme.

At-grade crossings of the A303 are not permitted. No vehicle or plant used in the contract for the execution of the works will be operated on carriageways, lanes open to public traffic in a way that would affect the usual traffic flow.

We will agree with the Overseeing Organisation the timing of the movement of any exceptionally heavy or large items of plant on the public highway. The appropriate approval from The Authority and / or

Wiltshire Council, as relevant to the roads in question, will be previously obtained. For example, when the TBM is dismantled for the first time at the east portal after the first TBM bore is finished, it will be in the same way as when it was delivered. The parts will be then transported to the Western Portal area by using the existing A303 (permitted route) via abnormal loads procedure. After the end of the tunnel boring, the TBM will be dismantled once more at the Eastern Portal and transported away by road in a similar manner.

BADGER's onsite concrete batching plant for in-situ concrete elements will remove the concrete trucks at peak hours from the local network, as these will use the internal haul roads, adding flexibility to the works. The raw goods will gain access to the site during off-peak hours (**TQ2B3.1**).

BADGER will provide protection to all drains or ducts wherever there is a need to move plant or vehicles across drains or ducts and will reinstate at our own expense any such drain or ducting which becomes damaged or disturbed.

Delivery of Materials

The construction traffic arriving from off site will consist of vehicles delivering the products required for the construction of the Scheme, including concrete, raw materials to manufacture concrete, bitumen, aggregates, pipes and steel among others. Some deliveries will arrive as abnormal loads, such as large construction plant and TBM major equipment (refer to **section 1.11** of this document). In most cases these construction traffic movements, as well as site worker journeys, will be directly to and from the main compound area at Longbarrow, using the existing A303 and the A360.

The routes and access points will be provided to the supply chain from tender stage and requirements handed down into the contract. Suppliers will notify the Logistics Manager when goods will be dispatched to manage logistics when getting into the compounds and avoid trucks queuing into the site. Trucks will also be monitored when driving towards the site. Records of deliveries will be kept by the Logistics Manager.



Final agreed routes will be detailed within the TMP and all subcontractors will be provided with copies.

Materials and goods will be delivered to site on a 'just in time' basis for roadworks materials managed by the supply chain in order to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste. Approximately 80% of all deliveries will go to the main construction compound and tunnel production area at Longbarrow with the remainder going to the satellite compound at Countess Junction and River Till (**TQ2B3.1**).

For occasional deliveries, we will look to operate "stop and escort" points: whenever traffic delays exceed the thresholds previously agreed with the relevant authority, the delivery vehicle approaching the site (whose position will be controlled by advance telematics) will be derived to a "stop and escort point" where it will wait until the Integrated Traffic Control Room (ITCR) indicates it is allowed to continue on to site. Additionally, any delivery vehicle intending to approach the site at peak-hours, will be told to wait at these points (**TQ2B.3.1**). Refer to section **1.11** for abnormal goods deliveries.

The TMP will define the measures used by BADGER to reduce the impacts and to reduce HGV movements, particularly at peak periods.

On-site manufactured materials

Raw materials will be transported into the site in accordance with the TMP and previous subsection "Delivery of materials". Once manufactured, we will use the internal haul roads to transport the goods to the relevant location within the site.

Anticipated on site manufactured materials includes, but not only, precast concrete tunnel lining and precast element for the under deck gallery (refer to **QS-13C** for haul roads detail from stock yard to western portal).

Deposition of the tunnel spoil at Parsonage Down

BADGER will use trucks to transport the treated material from the spoil treatment area at the main Longbarrow compound to the Parsonage down area; in this protected area of destination the material will be downloaded and spread around the landsite and placed to remodel the landscape areas as per requirements.

The new A303 East Bound will be provided as a haul road in order to connect the west end of the scheme with the western tunnel approach. This haul road will be used to transport the tunnel treated material from the STP stockpile to the Parsonage Down area. The River Till will be crossed through the new River Till Viaduct (eastbound).

The deposition of material within Parsonage Down, whether stockpiling or distributing will only be carried out within the "Normal Earthworks Working Hours" stated in MW-G12 of the OEMP.

In the event that access to Parsonage Down is needed during the construction of Section 1 (including construction of the River Till Viaduct and the B3083 Underbridge) of the Scheme, access and earthworks movements will be through the southern haul road. The River Till crossing will be allowed through the River Till temporary bridge. The River Till temporary bridge will be used for 2 years as per requirement and not relocated but definitely removed as we can get access to the south side of the road scheme by the haul road through the under deck viaduct and by the temporary haul road on the top of Green Bridge 2 as shown on the QS-13C (Haul roads - Phase 2 - West of the road scheme). This way we will ensure a proper connection between all the points of the scheme in all the stages of the project.

1.10 The Strategy for On and Off-Site Fabrication and Production

BADGER is evaluating the space available for on-site and off-site fabrication. Our strategy for on-site or off-site fabrication will be based on creating no new or different effects of what has been considered by Highways England in the **ES**. Other aspects will be also taken into



account for the final decision, as economic criteria and to meet the aim to minimise the likelihood of any localised impacts of waste on the surrounding environment.

The CEMP will require off-site prefabrication, where practical, including the use of prefabricated structural elements, cladding units, toilets, mechanical and electrical risers and packaged plant rooms. For off-site fabrication and production, we are considering at this stage the main following items:

- Steel beams for River Till Viaduct
- Concrete beams for:
 - Cut and cover for tunnel approach
 - Countess Flyover
- Road barriers
- Reinforcement steel
- Asphalt Plant
- Green bridges precast elements
- Precast panel for MSE wall.
- Precast kerbs

For on-site fabrication and production, we are considering, at this stage, the following items:

- Concrete segments for tunnel lining. A rough estimation of 30.000 m² will be considered for the precast yard, stockpiling area and concrete batching plant (exclusive use for precast segments)
- A Slurry treatment plant for extracted material from tunnel works.

An additional Concrete Batching Plant will be provided for in-situ concrete elements such as foundations, piles and bridge deck among others. This will be required in order to produce high quality coloured concrete as required for all the structures and concrete elements.

1.11 Routes and Procedures for Abnormal Loads

As previously stated in **Section 1.9** of this document, BADGER will prepare a TMP which will include a section outlining the Site Travel Plan (STP), in compliance with the requirements and local authorities.

The plan will identify routes to sitework and compounds for materials and plant. Final agreed routes will be detailed within the TMP and all subcontractors will be provided with copies throughout the duration of the works. This clause will be mandatory for all subcontractors and will be included in the subcontract arrangements. The plant and equipment will include abnormal loads and deliveries for which a dedicated route will be studied.

The abnormal loads being delivered to the works will be managed and coordinated by our logistic team working in close cooperation with the TM team. The main abnormal load considered at this first stage are:

- TBM and its related elements
- Batching Plant elements
- Large Construction Plant
- Special Precast elements
- Prefabricates elements for GB3: 33.3m divided in two pieces.
- Reinforced concrete beams for Countess junction. Dimensions: 25.10 m length
- Steel Beams for the River Till Viaduct. Max. Length:
 - 47.5 m length divided in 2 pieces
 - 36 m length
- Slurry Treatment plant for extracted material from tunnel and its equipment

The existing A303 in the Scheme area is identified as a high load route for vehicles with a maximum height of 6.1m. except for two bridges across the A303 between Countess and Solstice Park whose headroom is less than 6.1m. These will be acknowledged and contemplated when planning the routing of abnormal loads. When moving "abnormal loads" BADGER will inform in advance the following authorities of the routes we intend to use for delivery of abnormal loads or those that require a police escort for deliveries outside core working hours:

- Wiltshire Council
- Highways England
- Network Rail



- Canal & River Trust
- Wiltshire Police

Wiltshire Council will liaise with the police and BADGER and will check all the routes submitted for height, weight, width and axle load restrictions. We will provide additional options for re-routing the vehicles if necessary.

BADGER will have the correct indemnity policies to cover any damage that maybe incurred whilst travelling through the Wiltshire County.

BADGER will submit the route through the **ESDAL Portal** managed by Highways England. Three Highway Authorities operate within the geographical boundary of Wiltshire council:

- Wiltshire council non trunk roads
- Swindon Borough council non trunk roads within the Swindon Borough council boundary
- Highways England trunk roads and motorways

In addition, there are two bridge authorities:

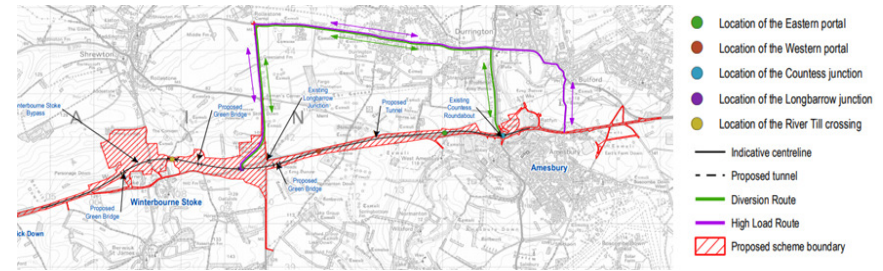
- Network Rail
- Canal & River Trust

Depending on the selected route, the relevant authorities will be notified accordingly.

We have identified the main network dedicated to special loads:

- Heavy and High Routes (Highways Agency)
- High Load Grid Routes (Highways Agency)

Along the A303 scheme, we will be compliant with the requirements as shown in the drawing **TR010025-000213-6-2_ESFigure_2.6_HighLoad_Diversion Route** opposite:



Picture 9: High Load Diversion Routes

BADGER will try to avoid the use of local and unauthorised roads for construction and deliveries traffic. Where unapproved roads need to be utilised, we will seek approval from Wiltshire Council prior to use. Once approved, use of local roads will be for the minimum time necessary.

Oversized and abnormal loads will stop at agreed remote points outside the 'free recovery' signs at the extent of works on the A303. Abnormal loads will stay at these holding locations until temporary traffic management layouts, site access points and traffic conditions are suitable for them to enter the site safely and with minimal disruption to road users (**TQ**). External abnormal load requests for passage through the works will be coordinated by our project Abnormal Loads Officer in the TM team. They will coordinate with the Authority, Traffic agency and Police through the TMP.

Abnormal loads will be met by one of our TM teams who will escort them onto the site via the designated access point. Where necessary our TM team will make short term localised changes to site access points to enable passage of the abnormal load, then immediately return to the site access point detail for normal use to prevent incursions by public road users. Our ITCR will use our variable message signs to advise road users of the movement of abnormal loads.

For the main elements of the Tunnel Boring Machine used to excavate the tunnels, the goods limits are approximately 5,5m width, 5,0 height and 13m length, maximum 100 tons payload. These



abnormal loads will be delivered by road, with the main routes potentially from Dover via M20/M25/M3/A303 to site.

1.12 How Movements and Interfaces between People, Material And Plant Within The Site Will Be Coordinated And Managed

Along the scheme, the main work sites are in correspondence with existing roads and connections, villages, access to houses and restricted roads, bikeways, bridleways and footpaths such as Countess Junction. BADGER will take into account all interfaces to minimise the impact of the works on local communities and traffic. In close coordination with local authorities and police, we will organise:

- A Site set out strategy to minimise pedestrian/ plant interface
- Provide separate pedestrian routes
- Clearly signed intersections between people and plant routes
- Produce a vehicle and pedestrian management drawing for each compound and area where clashes are likely to happen between site traffic and pedestrians. These drawings will show access and egress to the area, traffic flows, holding areas and all elements needed to ensure the movements safety in the area
- Provide Traffic Banksmen at crossings to control pedestrian/plant interface
- Provide Banksmen to assist all reversing plant.

All the aforementioned points will be fully described in the TMP and, when necessary, recorded in the relevant drawings in order to have a safety and efficient management of these interfaces.

Footways and Pedestrian Paths

Where footways are required, BADGER will provide footways of adequate width to facilitate pedestrian flows with signs provided to aid safe access around the site boundary. Adequate lighting near hoardings will illuminate these footways.

Our pedestrian access proposals will be controlled and coordinated through the TMP sitting within our Integrated Management System (IMS). The plan will identify all the temporary measures associated with each construction operation and be cross-referenced to the duration of each phase of the Programme.

We will always consider the needs and safety of pedestrians, minimising the number, duration and length of any unavoidable route closures and diversions. In the event any NMU needs to be closed, proper alternative and accessible routes or crossings will be provided. Whenever these NMUs cross live site traffic, then these will be controlled by a banksman. Crossings will be provided with gates on the haul roads which will be closed during non-working periods. CCTV cameras will be provided to control the gates during the non-working periods. We propose the installation of pedestrian barriers at Pegasus NMU Crossings. We will open the new permanent routes as soon as it is safe to do so.

The main NMU impacted by the works are identified in **QS-13C** drawings.

1.13 Strategy for Reinstatement of Compound Areas and Haul Roads Upon Works Completion

At the end of the construction stage, where land is to be used temporarily and returned to the landowner, such as the compound areas and haul routes, BADGER's strategy will be aligned with **OEMP** requirements.

We will produce a detailed Soils Management Strategy (SMS) based on the outline SMS within **Annex A.3** of the **OEMP**. The SMS will identify the nature and types of soil that will be affected and the methods that will be employed for stripping soil and the restoration of agricultural land (where the restoration of agricultural land is required) and be consistent with the DAMS and any Heritage Management Plan, Archaeological Method Statement or SSWI. We will have regard to the guidance in Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009) when



handling agricultural soils and in particular the land to be reprofiled for use as permanent chalk grassland.

As part of the SMS, we will prepare a Soil Handling Strategy for each land parcel where there is the potential for the disturbance of soil resources. This will include, between others:

- Site compounds and working areas
- Temporary haul roads
- Temporary roads
- Topsoil stockpiles.

Where land is to be used temporarily and returned to the landowner, through the Agricultural Liaison Officer (ALO), as stated in the provisions of items **MW-COM4** and **MW-COM8** of the **OEMP**, BADGER will:

- a) Liaise with the landowner on the working methods and the detail for restoration of each specific land parcel
- b) Undertake site inspections during construction to monitor working practices and compliance of BADGER with their obligations to landowners and occupiers under the OEMP
- c) Liaise with the landowner/occupier on the reinstatement measures following completion of the works
- d) Undertake further inspections of restored agricultural land with the landowner/occupier and Highways England's soils experts (and valuer, if required) to assess the progress of the restoration.

We will produce Preconstruction Soils Statements for areas of agricultural land within individual land holdings that will be temporarily occupied during the construction of the Scheme. These will provide a baseline schedule of soil condition against which the restoration of the soil will be assessed. The statements will identify soils resources, topsoil and subsoil unit plans and will include as a minimum, all pre-construction soil survey information obtained to inform the ES, the development of the soils management strategy and the information gathered from the record of condition surveys.

The temporary haul roads, earthworks haul roads, all-weather road and temporary stockpiles will be removed once no longer required, taking care to expose the High-Viz Orange Geotextile so as not penetrate the retained topsoil. Topsoil preparation prior to return to agriculture would be limited to ploughing to the depth normally applied by the landowner. For those areas that are not normally ploughed by the landowner, topsoil will be restored to its former use or in accordance with the requirements of design as appropriate.

BADGER will monitor vegetation during both the construction and operation phases using our ecologist specialist. This monitoring will end when the habitat has been restored to the satisfaction of the Authority and the landowner.

All materials will be removed and classified to allow their re-use or to be removed from site according to the SWMP. The surfaces occupied by the construction activities will be reinstated according to the OEMP.

BADGER will ensure that on completion of construction works, plant, materials, equipment, temporary buildings and vehicles not required during subsequent activities are removed from the site and that land is restored to its former use in accordance with the requirements of design as appropriate. Temporary access points will be removed or downgraded as appropriate.