

# Lower Thames Crossing

## Outline Site Waste Management Plan

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## Outline Site Waste Management Plan

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## Covering Note

This document is a draft of one of a series of Control Documents that will form part of our planned DCO application. Following this consultation we will carefully consider your feedback as we finalise the documents for our planned submission of the DCO application for the Lower Thames Crossing later this year.

The Outline Site Waste Management Plan (oSWMP) sets out the key principles and procedures for managing waste during the construction of the new road. The plan also defines specific roles and responsibilities to ensure waste is managed effectively and covers all phases of work (enabling, demolition, highways and tunnelling) within the Order Limits during construction.

The following contains a draft copy of this document to provide an example of how mitigation and commitments would be secured within the DCO application when it is submitted.

The oSWMP reflects the changes to the design described in this consultation. Updates may be made to this document to reflect feedback received from stakeholders ahead of submitting the document as part of the DCO application

As this is a draft control document, there will be references to the upcoming Development Consent Order (DCO). Any documents referenced that will form the DCO will be mentioned with a (REF TBC).

# 1 Executive summary

- 1.1.1 The A122 Lower Thames Crossing (the Project) is a proposed new motorway connecting Kent, Thurrock and Essex via a tunnel beneath the River Thames.
- 1.1.2 The Project would provide a connection between the A2 and M2 in Kent, east of Gravesend, crossing under the River Thames through two bored tunnels, before joining the M25 south of junction 29.
- 1.1.3 The A122 road would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13 and junction 29 of the M25. The tunnel portals would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.
- 1.1.4 Waste would arise from many locations within the Project footprint including the enabling works, construction, demolition and excavation activities. The principles of how waste and materials will be transported both internally within the Project order limits, using a combination of the existing highway network and dedicated haul routes, and externally on the surrounding highway network, are detailed in the Outline Materials Handling Plan (oMHP). The oMHP is included, in draft, as part of the consultation material and would be submitted in support of the Development Consent Order application.
- 1.1.5 The purpose of this Outline Site Waste Management Plan (oSWMP) is to set out the overarching principles and procedures that would be applied for the management of waste during the construction of the Project.
- 1.1.6 The oSWMP also defines specific roles and responsibilities to ensure waste is managed effectively.
- 1.1.7 The Project is committed to implementing circular economy principles throughout design and construction, including the waste hierarchy, moving waste management practices as far up the hierarchy as practicable and minimising impacts on waste infrastructure receptors.

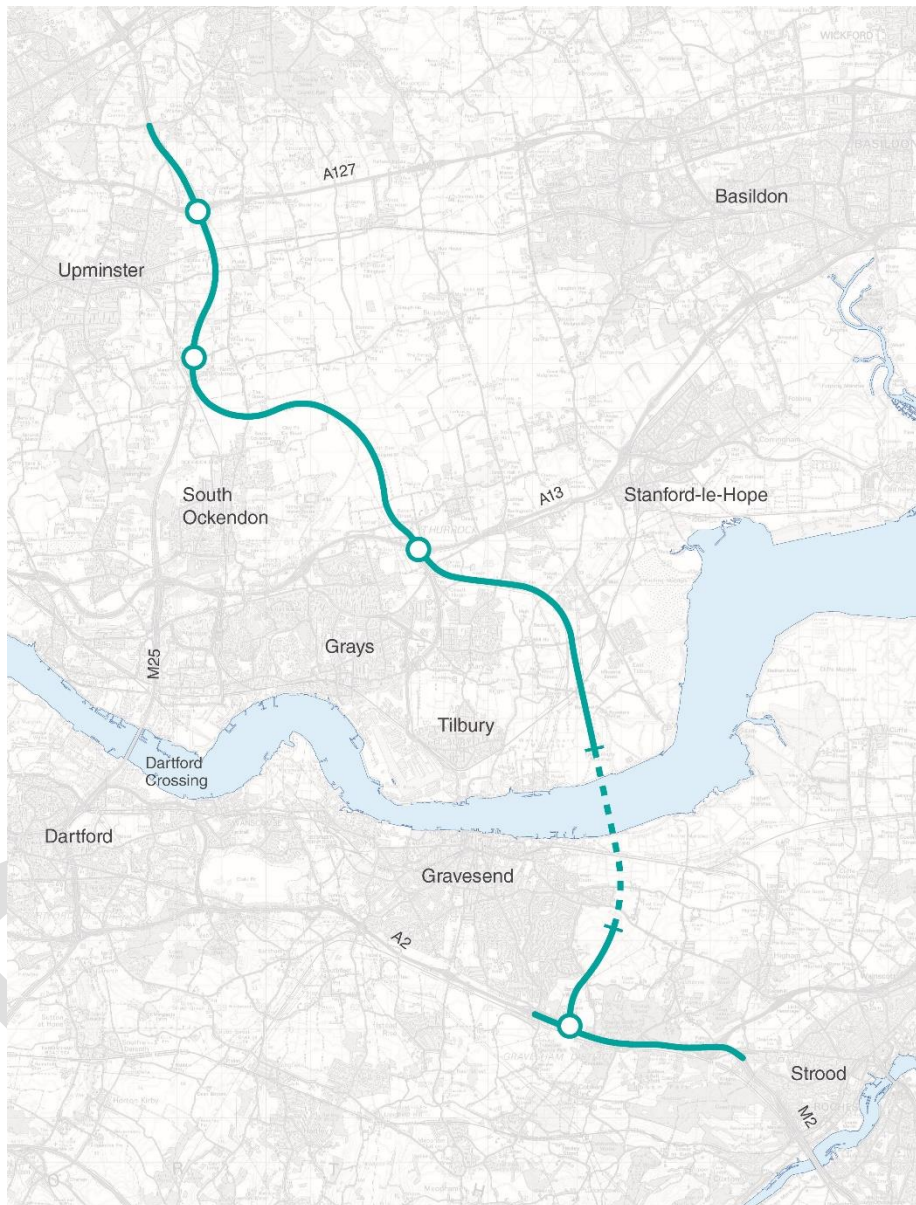
## 2 Introduction

### 2.1 The Project

- 2.1.1 The A122 Lower Thames Crossing (the Project) would provide a connection between the A2 and M2 in Kent, east of Gravesend, crossing under the River Thames through a tunnel, before joining the M25 south of junction 29. The Project route is presented in Plate 2.1.
- 2.1.2 The A122 road would be approximately 23km long, 4.25km of which would be in tunnel. On the south side of the River Thames, the Project route would link the tunnel to the A2 and M2. On the north side, it would link to the A13 and junction 29 of the M25. The tunnel entrances would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side.
- 2.1.3 Junctions are proposed at the following locations:
- a. New junction with the A2 to the south-east of Gravesend
  - b. Modified junction with the A13/A1089 in Thurrock
  - c. New junction with the M25 between junctions 29 and 30
- 2.1.4 To align with NPSNN policy and to help the Project meet the Scheme Objectives, it is proposed that road user charges would be levied. Vehicles would be charged for using the new tunnel.
- 2.1.5 The Project route would be three lanes in both directions, except for:
- a. link roads
  - b. stretches of the carriageway through junctions
  - c. the southbound carriageway from the M25 to the junction with the A13/A1089, which would be two lanes
- 2.1.6 In common with other A-roads, the A122 would operate with no hard shoulder but would feature a 1m hard strip on either side of the carriageway. It would also feature technology including stopped vehicle and incident detection, lane control, variable speed limits and electronic signage and signalling. Our A122 road design outside of the tunnel includes emergency areas spaced at intervals between 800 metres and 1.6km (less than one mile). The tunnel would include a range of enhanced systems and response measures instead of emergency areas.
- 2.1.7 The A122 would be classified as an 'all-purpose trunk road' with green signs. For the benefit of safety, walkers, cyclists, horse-riders and slow-moving vehicles would be prohibited from using it.
- 2.1.8 The Project would include adjustment to a number of side roads. There would also be changes to a number of public rights of way, used by walkers, cyclists and horse riders. Construction of the Project would also require the installation and diversion of a number of utilities, including gas pipelines, overhead power lines and underground electricity cables, as well as water supplies and telecommunications assets and associated infrastructure.

2.1.9 The Project has been developed to avoid or minimise significant effects on the environment. Some of the measures adopted include landscaping, noise mitigation, green bridges, floodplain compensation, new areas of ecological habitat and two new parks.

**Plate 2.1 Lower Thames Crossing route**



## 2.2 Context

2.2.1 Waste would arise from many locations within the Project footprint including enabling works, construction, demolition and excavation (CD&E) activities. The flow of waste and materials, both internally within the Project order limits, using a combination of the existing highway network and dedicated haul routes and externally on the surrounding highway network, are detailed in the Outline Materials Handling Plan (oMHP).

2.2.2 The detailed assessment of the potential effects from materials and waste management will be discussed in Environmental Statement Chapter 11:

Material Assets and Waste (REF TBC) and the associated technical appendices (REF TBC). These will be submitted to support the application for a Development Consent Order.

## 2.3 Scope

- 2.3.1 The purpose of this Outline Site Waste Management Plan (oSWMP) is to set out the overarching principles and procedures that would be applied for the management of waste during the construction phase of the Project.
- 2.3.2 The oSWMP also defines specific roles and responsibilities to ensure waste is managed effectively. The oSWMP covers all phases of work (enabling, demolition, highways and tunnelling) occurring within the Order Limits during the construction phase.
- 2.3.3 Prior to the commencement of construction, the Principal Contractor would prepare and submit for the approval of the Secretary of State, a Construction Site Waste Management Plan (CSWMP), under Requirement 4 of the draft Development Consent Order (REF TBC). The CSWMP would need to be prepared in accordance with this oSWMP, and would need to be updated as a live document throughout the construction phase.
- 2.3.4 This oSWMP has been developed to provide a consistent framework for the following:
- a. The management and recording of material resources used and waste arising from CD&E activities
  - b. Evidence that the Project meets regulatory requirements
  - c. Reduction of waste management costs
  - d. Recording of design and construction decisions that demonstrate good and best practice in material resource use and waste minimisation and management
- 2.3.5 The intention of this oSWMP is to reflect the Project's proposed design, the associated quantities of waste arisings that are anticipated to be generated and to enable better control over material resources and waste arisings throughout the construction phase of the Project. Volumes of waste described in this document present a forecast and will be updated by the contractors as part of the CSWMP.
- 2.3.6 This oSWMP:
- a. Estimates waste arisings during the CD&E activities and identifies actions to reduce waste arisings and associated cost
  - b. Provides an initial indication as to whether material resources and waste arisings have the potential to be reused, recycled, recovered or need disposal
  - c. Proposes end destinations for waste arisings



## 2.4 Regulatory Framework

2.4.1 A non-exhaustive list of key legislation regulating construction waste management on the Project is presented in Table 2.1.

**Table 2.1 Key legislation regarding construction waste**

Description of legislation
<p><b>Directive 2008/98/EC on Waste (Waste Framework Directive)</b></p> <p>The Waste Framework Directive (WFD) contains the European Parliament and the Council of the European Union's legal definition of waste, which is adopted by Member States. This definition is used to establish whether a material is classified as waste or not. This Directive is transposed into UK law through the Waste (England and Wales) Regulations 2011 (as amended), which remain in force.</p> <p>The legal definition of waste is '<i>any substance or object which the producer discards or intends or is required to discard</i>'. The legal definition of waste also covers substances or objects which fall outside of the commercial cycle or out of the chain of utility. In particular, most items that are sold or taken offsite for recycling are wastes, as they require treatment before they can be resold or reused.</p> <p>In practical terms, wastes include surplus earthworks materials and soil, scrap, unwanted surplus materials, packaging, recovered spills, office waste, and damaged, worn-out, contaminated or otherwise spoiled plant, equipment and materials.</p> <p>Article 2 of WFD states that '<i>uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated</i>', are excluded from the scope of the WFD.</p> <p>The use of the waste hierarchy in waste management (prevention, preparation for reuse, recycling, other recovery and disposal) is mandated. In addition, it sets a target for increasing the recycling of non-hazardous construction and demolition waste to a minimum of 70% (measured by weight) by 2020 (Article 11).</p> <p>Annex III of Commission Decision of 18 November 2011, 'Establishing rules and calculation methods for verifying compliance with the targets set in Article 11(2) of Directive 2008/98/EC of the European Parliament and of the Council' (2011/753/EU), sets out the methodology implemented when calculating construction waste diversion from landfill.</p> <p>The Directive defines recovery as '<i>any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function</i>'. Disposal is defined as '<i>any operation which is not recovery, even where the operation has as a secondary consequence the reclamation of substances or energy</i>'.</p>
<p><b>Directive 1999/31/EC on the landfill of waste (Landfill Directive) and the Environmental Permitting (England and Wales) Regulations 2016</b></p> <p>The Landfill Directive establishes a framework for the management of waste and is implemented by the 2016 Regulations. The legislation outlines the management and monitoring required for each landfill class, including Waste Acceptance Criteria for incoming waste and a requirement for pre-treatment.</p> <p>A ban is also placed on the disposal of specific wastes, such as liquids and tyres, from landfill and the mixing of waste to meet waste acceptance criteria is prohibited.</p>
<p><b>Environmental Permitting (England and Wales) Regulations 2016 (as amended)</b></p> <p>These Regulations were created to standardise environmental permitting and compliance in England and Wales to protect human health and the environment. This includes provisions for the permitting of waste and recovery operations within the Order Limits by Contractors and at offsite third-party facilities receiving waste.</p>

<b>Description of legislation</b>
The Regulations also include a schedule of activities that are exempt from the requirements of obtaining a permit, although registration may still be required.
<p><b>Environmental Protection Act 1990 (Part II)</b></p> <p>This Act outlines the basic provisions for the management of all waste, which includes details on the definition of waste, and outlines the Duty of Care placed on those involved in managing wastes.</p> <p>Duty of Care requirements are set out in section 34 of the Environmental Protection Act 1990 and require parties who produce or handle (import, store, transport, treat or dispose of) waste to take all reasonable steps to ensure that the waste is managed properly. Anyone in possession of waste must take all reasonable steps to:</p> <ul style="list-style-type: none"> <li>• Prevent unauthorised or harmful deposit, treatment or disposal of waste</li> <li>• Prevent a breach (failure) by any other person to meet the requirement to have an environmental permit, or a breach of a permit condition</li> <li>• Prevent the escape of waste</li> <li>• Ensure that waste is only transferred to an authorised person</li> <li>• Provide an accurate description of the waste when it is transferred to another person</li> </ul> <p>The duty exists from the moment the waste is produced, until it is fully recovered or disposed of at an appropriately permitted facility. The Environmental Protection (Duty of Care) Regulations 1991 outline the statutory requirements for record completion and retention.</p>
<p><b>Hazardous Waste (England and Wales) Regulations 2005</b></p> <p>These Regulations transpose the Hazardous Waste Directive into English and Welsh law. The Regulations implement a duty to separate and prohibit the mixing of hazardous and non-hazardous waste. They also require that a Hazardous Waste Consignment Note is produced for each consignment of hazardous waste removed from site.</p>

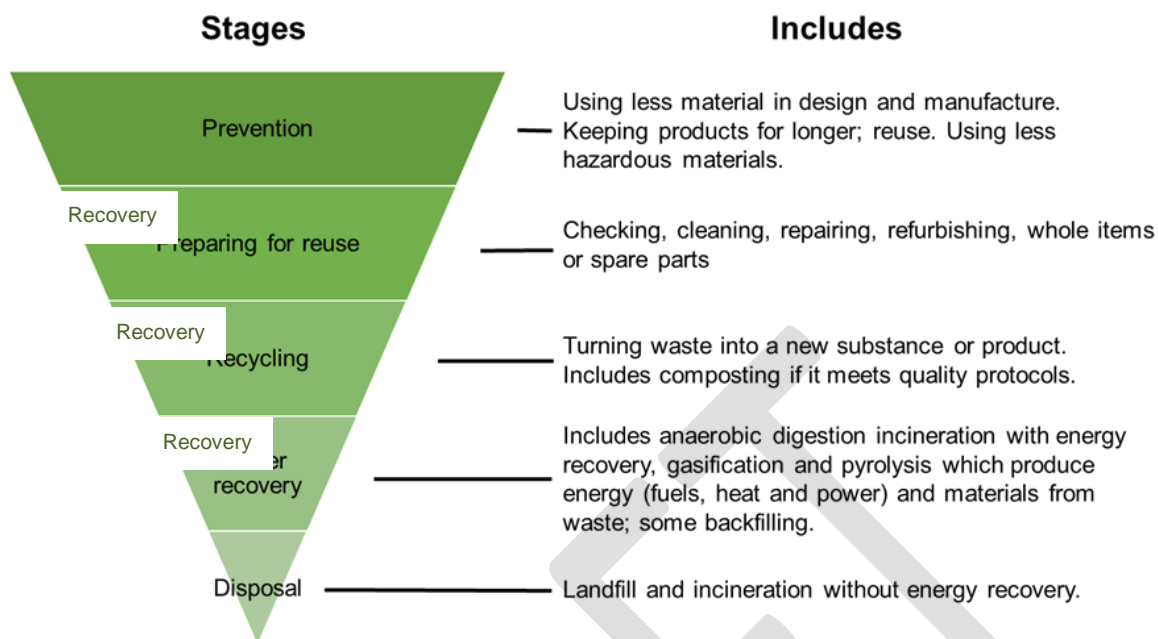
## 2.5 Outline Materials Handling Plan

- 2.5.1 The principles of waste and material transport both internally within the Project order limits, using a combination of the existing highway network and dedicated haul routes and externally on the surrounding highway network, is detailed in the oMHP.
- 2.5.2 The oMHP is a companion document to the oSWMP, providing the principles of waste movements associated with the Project. It provides further detail of waste generated from the Project's earthwork activities within the Order Limits.
- 2.5.3 In the context of waste, the oMHP covers environmental setting and existing infrastructure, construction logistics on large-scale projects, Materials movement and movement of excavated material transport options for material movements

## 2.6 Project commitments and targets

- 2.6.1 The Project is committed to implementing circular economy principles throughout design and construction, including the waste hierarchy, moving waste management practices as far up the hierarchy as practicable and minimising impacts on waste infrastructure receptors (Waste and Resources Action Programme (WRAP), 2020).

**Plate 2.2 Waste hierarchy (Department for Environment, Food and Rural Affairs, 2011)**



**Prevention**

2.6.2 Waste minimisation and prevention is at the top of the waste hierarchy and is concerned with avoiding the production of waste in the first place. Whilst complete avoidance of waste is impossible for a project of this scale, adopting certain waste minimisation practices would ensure that the overall quantity of materials not beneficially used within the Order Limits is kept to a minimum.

2.6.3 Opportunities with the greatest potential for improving resource efficiency and contributing to the circular economy in construction projects occur during the feasibility and early design stage. Circular economy principles have been implemented during design, such as:

- a. Designing out materials
- b. Identifying, securing and using materials onsite
- c. Designing for long life
- d. Designing for the future

2.6.4 A number of factors, including the aim of reducing waste, have influenced the Project throughout the design development process, from early route options assessment through to refinement of the Project design. An iterative process has facilitated design updates and improvements, informed by environmental assessment and input from the Project engineering teams, stakeholders and public consultation.

2.6.5 Waste prevention has been achieved in a variety of ways, for example:

- a. Maximising cut and fill to reduce the offsite management of excavated materials
- b. Altering the tunnel alignment and portal locations

- c. Reviewing the extent of the Order Limits to minimise the need to demolish buildings and structures
- d. Reusing demolition materials as recycled aggregate
- e. Retaining vegetation from site clearance for use in ecological mitigation works
- f. Reduction in footprint for temporary and permanent works
- g. Reduction in carriageway width
- h. Retention and reuse of all topsoil within the Order Limits

2.6.6 Some examples of waste reductions through the design process are presented in Table 2.2.

**Table 2.2 Waste elimination in design**

Item	Design change	Estimated reduction (m <sup>3</sup> )
1	Changes to the auxiliary lanes at junction 29 on the M25	11,500
2	Reduction of the Project road from three lanes to two between the M25 and A13 (southbound)	15,000
3	Moving the South Portal approximately 350m south from the location presented at Statutory Consultation resulting in a reduced excavation for the road cutting	620,000
4	Retention and reuse within the Order Limits of excavated materials and treated tunnel boring machine slurry to fulfil the Project's requirements for fill and landscaping material	10,400,000
5	Trenchless methodology for some utility works instead of open trenching would result in less material handling  Re-routing of the road alignment at Hornsby Lane/Chadwell St Mary to avoid the requirement to divert the existing the pylons  Refinement of compound locations and layouts to reduce the requirements for vegetation clearance and vegetation waste generation	Not quantified

2.6.7 Additional measures have been proposed to continue to drive waste prevention and reduction throughout detailed design and construction phase. The Register of Environmental Actions and Commitments (REAC) includes a number of actions and commitments relating to waste management prevention during the construction phase. The REAC would be included within the Code of Construction Practice (CoCP) and would be secured by Requirement 4 of the draft Development Consent Order. Each entry in the REAC has an alpha-numerical reference code (eg. REAC Ref. MW0XX) to provide a cross reference to the secured commitment.

- 2.6.8 In terms of prevention, mitigation measures and targets would be implemented for the works, see Table 2.3.

**Table 2.3 REAC for waste management – enhancing waste prevention**

REAC Ref.	Commitment
MW001	<p>In line with the target set out in DMRB LA 110, 31% of aggregates used in construction would be recycled or secondary, for those applications where it is technically and economically feasible to substitute these alternative materials for primary aggregates. To facilitate compliance with this target, the Contractor would calculate the total aggregate required to achieve the detailed design, and the total where design specification dictates only primary aggregate is used. During construction, the Contractor would record the amount of primary and secondary/recycled aggregate by weight and calculate compliance with the target (offsetting the amount excluded by design specification).</p> <p>In line with the target set out in DMRB LA 110, 70% recycling and reuse on site of suitable, uncontaminated concrete from demolition activities to substitute use of primary material.</p> <p>Suitable uncontaminated concrete from demolition and construction activities would be processed to achieve non waste status in accordance with the Aggregates from Inert Waste Quality Protocol (WRAP, 2013)</p>
MW007	<p>Excavated material would be managed in line with the waste hierarchy with preference given to reuse where feasible and the design allows.</p> <p>Clean, naturally occurring soils would be reused on-site in line with Directive 2008/98/EC on Waste (Waste Framework Directive), Article 2.</p> <p>Contractors would implement all required environmental permits, exemptions and a Materials Management Plan (in accordance with the Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011) for the reuse of made ground and contaminated soils.</p> <p>Material that are not suitable for reuse or is excess to requirements would likely be managed as waste.</p>
MW008	<p>A ground investigation would be used to identify material that would be excavated on site that could be used as Class I-IV fill materials or construction aggregate to reduce the need to import equivalent materials in more detail.</p>

## Recovery and Disposal

- 2.6.9 A project of this size cannot eliminate all waste; thus, having applied the principles of designing out waste set out above, recovery of waste on or offsite is the next preferable option.
- 2.6.10 The terms ‘recovery’ and ‘disposal’ are set out in Table 2.1.
- 2.6.11 As outlined in the waste hierarchy, recovery activities include ‘preparing for reuse’, ‘recycling’ and ‘other recovery’. Example opportunities the Contractors could adopt to help achieve the waste recovery Project commitments in Table 2.5, are outlined in Table 2.4:

**Table 2.4 Example waste recovery options**

Management route	Example
Preparing for reuse	<ul style="list-style-type: none"> <li>Retaining existing elements, such as street furniture, lighting columns and fencing, for reuse within the Order Limits</li> <li>Bringing excess materials, eg kerbs, drainage pipework or temporary piles from previous projects for use within the Order Limits</li> <li>Retaining and reusing offcuts such as metal and timber for reuse elsewhere within the Order Limits</li> <li>Ensuring that materials are ordered in line with programme requirements and stored to prevent damage, thus allowing them to be used and avoid becoming waste</li> <li>Retaining packaging materials and returning to the supplier for reuse</li> <li>Reuse of suitable demolition materials in habitat creation, e.g. hibernacula</li> </ul>
Recycling	<ul style="list-style-type: none"> <li>Reprocessing asphalt planings and utilising for tracks, compounds or in the permanent works</li> <li>Crushing and reusing concrete and inert materials for use in the permanent or temporary works</li> <li>Chipping vegetation for use as mulch and weed suppression in landscaping</li> <li>Identifying third-party recovery opportunities for excavated material such as a reclamation project.</li> <li>Identifying offsite opportunities for reuse of construction waste materials, e.g. in community projects</li> </ul>
Other recovery	<ul style="list-style-type: none"> <li>Waste sent for energy recovery (e.g. reuse as fuel)</li> <li>Biological recovery (e.g. composting and anaerobic digestion).</li> </ul>

2.6.12 Disposal of waste is at the bottom of the waste hierarchy, as this is the least sustainable method of waste management.

2.6.13 Diversion from disposal and into recovery is required to minimise the impact on finite landfill capacity and divert potential waste into resource streams and thus deliver a circular economy.

2.6.14 In terms of recovery, mitigation measures and targets would be implemented for the works (Table 2.5). Again, these have been secured through the REAC included within the CoCP.

2.6.15 All commitments aim to ensure that waste would be handled in such a way as to enhance recovery rates achieved by the Project.

2.6.16 The commitments set out how waste would be managed both on and offsite, including requirements as to storage, segregation, labelling, sampling and classification.

2.6.17 Excavated materials are anticipated to be the largest sources of waste from the Project. A target has been set to ensure that these would be diverted from landfill disposal. In order to validate this proposal, an Excavated Materials Assessment (REF TBC) will be undertaken, which will verify that sufficient capacity is available in the study area to accept excavated materials for recovery activities.

**Table 2.5 REAC for waste management – enhancing waste recovery**

REAC Ref.	Commitment
MW005	<p>During construction it will be necessary to demolish various buildings, concrete structures and steel gantries. Pre-demolition surveys of these structures and buildings would be undertaken.</p> <p>Demolition materials would be identified and quantified including potential sources of recycled aggregate to be reused on site, as well as hazardous materials such as asbestos.</p>
MW010	<ol style="list-style-type: none"> <li>a. Contractors would implement the following measures during construction in order to enhance recovery and recycling rates and minimise the quantities of waste:</li> <li>b. All waste arisings would be characterised and recorded.</li> <li>c. All wastes would be classified, with mirror entry code wastes sampled to determine classification, in line with the prevailing technical guidance.</li> <li>d. Waste management off-site would be completed under Duty of Care (Section 34 Environmental Protection Act). All waste would be transported using licensed carriers and taken only to appropriately permitted facilities. All waste movements would be accompanied by waste documentation such as Waste Transfer or Consignment Notes (dependent of waste class) which would be retained for the appropriate legal period.</li> <li>e. Satisfy the legal need under the Waste (England and Wales) Regulations 2011 (as amended) for pre-treatment of waste and confirm this in a written declaration on the associated waste documentation.</li> <li>f. Demonstrate and document that sufficient space has been allowed within the construction working areas for stockpiles for topsoil, contaminated material (for later off-site management), materials to be reused, excess clean material and imported materials for construction. This would enable the segregation of waste types, prevent the mixing of hazardous and non-hazardous wastes and enhance recovery rates by minimising degradation, damage and loss.</li> <li>g. Segregate hazardous and non-hazardous waste, separating waste at source by type, where reasonably practicable, providing separate skips for general waste, metal, dry recycling and timber as a minimum at each compound. Suitable provision would also be made for common hazardous wastes, e.g. used absorbents, aerosol cans, oily rags and waste electronics.</li> <li>h. Provide impermeable surfaces with sealed drainage for remediation, quarantine and hazardous waste storage areas to minimise cross contamination of other waste streams and surrounding ground.</li> <li>i. Label stockpiles and skips with contents, to prevent the mixing of hazardous and non-hazardous wastes.</li> <li>j. Comply with any specific waste storage and handling requirements required by legislation, e.g. for asbestos or waste electronics.</li> </ol>

REAC Ref.	Commitment
	<ul style="list-style-type: none"> <li>k. Vegetation waste should be reused on site wherever possible, e.g. for ecological mitigation (unless contaminated by invasive species).</li> <li>l. Where possible agree with material suppliers to reduce the amount of packaging on materials or to participate in a packaging take-back scheme.</li> <li>m. Implement a material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste.</li> <li>n. Monitor material quantity requirements to avoid over-ordering to reduce opportunity for oversupply and damage on site which would generate waste materials.</li> <li>o. Prioritise off-ground storage, e.g. on pallets, retention of materials in original packaging, protection from rain and collision by plant or vehicles.</li> <li>p. Ensure that the storage of lightweight or liquid/sludge waste materials will prevent dispersion by wind and precipitation.</li> <li>q. Seal stockpiles in place for over 30 days to maintain integrity of material.</li> <li>r. Seed topsoil stockpiles to reduce soil loss and maintain soil quality.</li> <li>s. Prohibit the burning of waste and unwanted materials on-site.</li> <li>t. In line with the requirements of DMRB LA 110, enhancement opportunities would be identified, reported and implemented during detailed design and construction to minimise the demand for material and the amount of waste sent for final disposal in landfill.</li> </ul>
MW011	The Contractor would seek to achieve a target that 95% (by weight) of inert excavated materials destined for off-site waste management outside the Order Limits would be diverted from final disposal in landfill.
MW012	The Contractor would identify reuse sites that score positively against a sustainability scoring system agreed with Highways England.
MW013	The Contractor would use the methodology in the Waste Framework Directive (2008/98/EC) to demonstrate the recovery of non-hazardous construction waste, with a target of 90%. The Contractor would achieve a minimum recovery of 70% (by weight).
MW015	The Contractor would seek to achieve a target of 70% (by weight) of hazardous construction waste to be diverted from landfill. It is anticipated that this would be achieved by undertaking remediation or treatment within the Order Limits or off site at third party facilities. It is acknowledged that the nature of some hazardous construction waste may preclude this. Where a hazardous construction waste cannot be diverted from landfill, the justification and evidence will be provided by the Contractor and logged by the Contractor in the SWMP



## 2.7 Roles and responsibilities

- 2.7.1 Many parties would be involved in constructing the Project, including Highways England, Designers, Principal Contractors and sub-contractors. Each has their own role to play in ensuring effective waste management.
- 2.7.2 Given the Project will be divided into different contracts, multiple Principal Contractors and Designers are anticipated, however all would be subject to the same responsibilities outlined below.
- 2.7.3 These responsibilities have been secured as Project commitments in the REAC and the appropriate reference is included (e.g. MW0XX).
- 2.7.4 The key roles and associated responsibilities for delivery of the CSWMP are summarised below. These roles and responsibilities are based on those required by the now-revoked Site Waste Management Plan Regulations 2008. However, it is considered appropriate to follow the revoked SWMP Regulations 2008 as this provides a suitable framework for setting out a SWMP.

### Highways England

- 2.7.5 Highways England is responsible for operating, maintaining and improving England's motorways and major A roads. Its responsibilities would include:
- Appointing the Principal Contractors and Designers
  - Monitoring the implementation of the CSWMP and Project commitments
  - Providing necessary direction to Contractors, e.g. setting contractual obligations
  - Monitoring the CSWMP as necessary in liaison with the Contractors, ensuring it is kept up to date
  - Sharing responsibility for ensuring that all waste from the site is dealt with in accordance with the waste Duty of Care in section 34 of the Environmental Protection Act 1990 and the Waste (England and Wales) Regulations 2011

### Designer

- 2.7.6 The Designer would be appointed with the Principal Contractor to develop the preliminary design which will be submitted in the application for a Development Consent Order, into the detailed design to be executed in construction. Their responsibilities would include:
- Supporting the Contractors to identify, prioritise and implement ways of meeting the Project targets for waste
  - Identifying further opportunities to reduce total waste and improving material resource management
  - Identifying opportunities to increase reused and recycled content (where there is no impact on cost or performance)
  - Supporting the development/implementation of the CSWMP from an early design stage, including the provision of waste forecasts and pursuing further waste reduction through design

## Principal Contractor

- 2.7.7 The Principal Contractor would be in control of the construction phase of a project involving more than one Contractor.
- 2.7.8 They would use the oSWMP and detailed design to write the CSWMP (or equivalent) to set out procedures for the characterisation, management and monitoring of waste arisings (MW009).
- 2.7.9 The CWSMP would contain:
- a. Initial forecast of construction waste listed by waste type, waste code, source and anticipated weight from detailed design.
  - b. Calculation of construction waste listed by waste type, waste code and source.
  - c. All wastes entered would have a final destination entered and the offsite destination, i.e. reuse, recycling, recovery or disposal.
  - d. Data in the document would be used to calculate the reuse of site-won materials.
  - e. Data in the document would be used to calculate recycling and reuse of demolition materials as recycled aggregate to demonstrate compliance with the Project target (REAC Ref. MW001).
  - f. Data in the document would be used to calculate offsite reuse of inert excavated materials to demonstrate compliance with the Project target (REAC Ref. MW011).
  - g. Data in the document would be used to calculate overall construction waste diversion from landfill to demonstrate compliance with the Project target (REAC Ref. MW013).
  - h. The document would be used to record relevant Duty of Care documentation (waste carrier registration, receiving site environmental permit number, waste transfer documentation reference) associated with the waste movement.
- 2.7.10 Where a Materials Management Plan (as defined by CL:AIRE (2011)) is required (see REAC Ref. MW007), the CSWMP would be compatible with the materials tracking element to enable the full traceability of all materials excavated during construction.
- 2.7.11 The CSWMP used to track the management of waste would be stored in an accessible location on site.
- 2.7.12 A Materials and Waste Manager would be appointed (MW006) to ensure:
- a. Procedures within the CSWMP and commitments outlined in the REAC would be followed during both the detailed design and construction
  - b. The waste hierarchy would be implemented and further opportunities to reduce waste generation or improve recovery/recycling rates are identified
  - c. Compliance with waste mitigation requirements and ensuring the CSWMP is written and updated
- 2.7.13 The Principal Contractor would provide adequate environmental training, including content on waste management and the CSWMP.

- 2.7.14 Where waste targets set out in the CSWMP are unlikely to be met, the Principal Contractor would notify Highways England in advance and provide justification.

### **Contractors/Subcontractors**

- 2.7.15 Contractors and Subcontractors are companies or persons who would carry out, manage or control works at the direction of the Principal Contractor. Their responsibilities would include:
- a. Carrying out the relevant waste management tasks detailed in the CSWMP
  - b. Assisting with required inputs, providing forecasts of waste produced through their activities when requested
  - c. Measuring and reporting progress for waste and reused and recycled waste in tonnes and/or cubic metres
  - d. Reporting performance for construction and excavation waste streams separately, measured in tonnes and/or cubic metres
  - e. Supporting the development/implementation of the CSWMP and working in full compliance with the methods detailed within the CSWMP, in particular complying with all actions to reduce and reuse waste and increase levels of recovery
  - f. Participating in site briefings/toolbox talks for operatives on materials handling and waste disposal
  - g. Informing the Principal Contractor (in advance) where waste targets set out in the CSWMP are unlikely to be met, and providing justification
  - h. Identifying additional ways to reduce and reuse waste and/or increase recovery and informing the Principal Contractor

## **2.8 Waste management contractors**

- 2.8.1 The Project would be located in the south-east of England in an area with a high density of registered waste carriers and appropriately licensed waste handling facilities.
- 2.8.2 Waste management contractors would provide evidence of registration/permitting prior to waste leaving the Project, and the relevant details entered on the accompanying waste documentation, eg waste transfer note.
- 2.8.3 Credentials of waste management contractors can be verified using the public registers managed by Defra (Defra, 2021).
- 2.8.4 Disposal and recovery facilities within the study area would be presented in the Environmental Statement Appendix 11.3 (REF TBC).

## **2.9 Waste forecast**

- 2.9.1 In order to assist the management and segregation of waste and the completion of the CSWMP, estimations have been made of the types and quantities that will be generated during the construction phase of the Project.
- 2.9.2 The following information was collated:

- a. The types and quantities of waste arising from the Project (demolition, excavation arisings and remediation)
  - b. The amount of waste (by weight) that would be recovered and diverted from landfill either within the Order Limits or offsite
  - c. The type and quantity of hazardous waste
- 2.9.3 Calculations exclude excavated materials sourced and reused within the Order Limits as these are classed as non-waste, e.g. under Article 2 of WaFD or using a Materials Management Plan in line with CL:AIRE (2011).
- 2.9.4 The estimated recovery rates are based on the “good practice quick win” recovery rates set out in the Achieving Good Practice Waste Minimisation and Management report published by WRAP (undated). The overall recovery rate is calculated by tonnage.
- 2.9.5 The recovery potential of each waste stream is stated and indicates where Contractors are likely to increase recovery of this waste stream either within the Order Limits or offsite.
- 2.9.6 All the materials identified for use in construction were designated for use in either permanent or temporary works. All materials designated for use in the temporary works were assumed to be removed from the Order Limits as waste following the completion of construction to provide a worst-case estimate.
- 2.9.7 As outlined in Sections 1.6 and 1.7 of this oSWMP, it is expected that Designers, Principal Contractors and Contractors would identify waste management options to enhance the recovery of waste and further improve upon the data presented.
- 2.9.8 In addition to directly generated wastes, e.g. excavated soils and welfare bins, a wastage rate was also applied to all key materials used in construction (in both permanent and temporary works). The wastage factors defined in the Net Waste Tool (WRAP, 2008) were applied to account for damage and defects.
- 2.9.9 Table provides a breakdown of the waste arisings from surplus excavated material. These are presented based on the contract areas which comprise:
- a. Kent Roads
  - b. Tunnels and Approaches (South and North)
  - c. Roads North
- 2.9.10 Waste generated from enabling works and demolition activities may form part of these contracts.
- 2.9.11 Indicative waste types and quantities from non-earthwork-related activities are summarised in Table 2.7. The waste data presented in Table 2.7 has been separated into construction activity providing context regarding the stage of construction from which the waste may originate. Some entries have been marked with ‘TBC’ and will be updated for the oSWMP submitted in support of the Development Consent Order application.
- 2.9.12 It is intended that the oSWMP to be submitted with the DCO Application will divide the waste quantities detailed in Table 2.7 into proposed contract areas to facilitate use in individual Principal Contractors’ CSWMPs.

- 2.9.13 Annexes A.1 to A.5 provide a template for waste forecasting to be adopted by the Contractors as part of the development of the CSWMP and as a result, the entries in these tables have been marked TBC.
- 2.9.14 The content of Table 2.6 and Table 2.7 will be updated to reflect the waste quantities forecast for the Project design submitted as part of the Development Consent Order application.

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**Table 2.6 Indicative types, quantities and anticipated management route of surplus excavated material**

Location	Waste generated	Estimated m3	Anticipated management
<b>Section A - Kent Roads</b>			
<b>South of the River Thames -</b> Material is anticipated to be chalk (as dug), with lesser contributions of made ground and Head deposits.	Contaminated excavated material *potentially hazardous	6,600	30% sent for offsite disposal [MW015]
	Contaminated excavated material *potentially hazardous	15,400	70% recovered/recycled [MW015]
<b>Section B</b>			
<b>South of River Thames –Tunnels &amp; Approaches</b> South of the River Thames - Material is anticipated to be chalk (as dug) with lesser contributions of made ground, Alluvium, River Terrace Deposits and Head deposits.	Contaminated excavated material *potentially hazardous	600	30% sent for offsite disposal [MW015]
	Contaminated excavated material *potentially hazardous	1,400	70% recovered/recycled [MW015]
<b>North of River Thames – Tunnels &amp; Approaches</b> North of the River Thames Material is anticipated to be chalk slurry (from tunnel boring machine (TBM) with made ground (landfill), pulverised fuel ash, peat and Alluvium from the launch ramp and North Portal area.	Inert excavated material	520,000	Transportation to Ingrebourne Valley Limited receiver site which is located within the Order Limits

Location	Waste generated	Estimated m3	Anticipated management
	Contaminated excavated material *potentially hazardous	7,500	30% sent for offsite disposal [MW015]
	Contaminated excavated material *potentially hazardous	17,500	70% recovered/recycled [MW015]
<b>Section C – Roads North</b>			
<b>North of the River Thames</b> Material is anticipated to be made ground, Alluvium, River Terrace Deposits and clay	Inert excavated material	446,500	95% Diversion from landfill in line with commitment [MW011]
	Inert excavated material	23,500	5% landfill disposal
	Contaminated excavated material *potentially hazardous	4,500	30% sent for offsite disposal [MW015]
	Contaminated excavated material *potentially hazardous	10,500	70% recovered/recycled [MW015]
<b>Section D – Roads North</b>			
<b>North of the River Thames</b> Material is anticipated to be made ground, Alluvium, River Terrace Deposits and Clay	Inert excavated material	753,350	95% Diversion from landfill in line with commitment [MW011]
	Inert excavated material	39,650	5% landfill disposal
	Contaminated excavated material *potentially hazardous	1,800	30% sent for offsite disposal [MW015]
	Contaminated excavated material *potentially hazardous	4,200	70% recovered/recycled [MW015]

Location	Waste generated	Estimated m3	Anticipated management
<b>Summary</b>			
Total volume for offsite management (m3)	Inert excavated material (management outside of Order Limit)	1,265,000	
	Inert excavated material (management within the Order Limits)	520,000	
	Contaminated excavated material *potentially hazardous	70,000	



**Table 2.7 Indicative waste types (excluding surplus excavated materials), quantities and anticipated management route**

Activity	Waste generated	Estimated tonnage	Estimated m <sup>3</sup>	Recovery potential	Anticipated management
Site clearance/ utility connections/ enabling works	Aluminium (power cable and transmission towers – removed and wastage)	10,150	3,760	High	100% recycling offsite
	Steel (gas main and power transmission towers – removed and wastage)	830	110	High	100% recycling offsite
	Concrete (pre-cast pipes, slabs, foundations, sewer) – wastage and temporary works	7,300	3,040	High	95% recycling offsite
	Concrete (pre-cast pipes, slabs, foundations, sewer) – wastage and temporary works	390	160	High	5% disposal offsite
	Bituminous road surfacing *potentially hazardous (assumes 25% of total contains coal tar)	18,940	10,530	Medium	95% recycling offsite
	Bituminous road surfacing *potentially hazardous (assumes 25% of total contains coal tar)	1,000	560	Medium	5% disposal offsite
	Asphalt – wastage and temporary works	79,340	44,080	High	95% recycling offsite
	Asphalt – wastage and temporary works	4,180	2,320	High	5% disposal offsite
	Excess vegetation from site clearance	17,350	19,890	High	100% composting offsite

Activity	Waste generated	Estimated tonnage	Estimated m <sup>3</sup>	Recovery potential	Anticipated management
	Vegetation from site clearance – reused within the Order Limits	26,020	29,840	High	100% reuse (mulching, bio piles, habitat creation)
	Iron (manholes) – wastage	TBC	TBC	High	100% recycling offsite
	Plastic (utility pipework) – wastage and temporary works	TBC	TBC	Low	50% recycling offsite
	Plastic (utility pipework) – wastage and temporary works	TBC	TBC	Low	50% disposal offsite
<b>Demolition (properties and structures)</b>	Concrete from demolition reused as recycled aggregate	7,740	3,230	High	70% of total tonnes generated reused as secondary aggregate – retained
	Concrete from demolition – sent offsite	3,150	1,320	High	Of the 30% of total concrete tonnes generated sent offsite, 95% recycling offsite
	Concrete from demolition – sent offsite	TBC	TBC	High	Of the 30% of total concrete tonnes generated sent offsite, 5% disposal offsite
	Steel	2,090	270	High	100% recycling offsite
	Other inert (e.g. brick, glass)	4,110	1,720	High	95% recycling offsite
	Other inert (e.g. brick, glass)	TBC	TBC	High	5% disposal offsite
	Insulation	TBC	TBC	Low	50% recycling offsite
	Insulation	TBC	TBC	Low	50% disposal offsite
	Mixed metal	2,190	240	High	100% recycling offsite

Activity	Waste generated	Estimated tonnage	Estimated m <sup>3</sup>	Recovery potential	Anticipated management
	Plastic	TBC	TBC	Low	80% recycling offsite
	Plastic	TBC	TBC	Low	20% disposal offsite
	Timber	TBC	TBC	High	90% recycling offsite
	Timber	TBC	TBC	High	10% disposal offsite
	Plasterboard	TBC	TBC	Low	90% recycling offsite
	Plasterboard	TBC	TBC	Low	10% disposal offsite
	Hazardous waste (e.g. asbestos)	Unknown	Unknown	Low	70% diversion from landfill
<b>Construction (earthworks, compounds, haul roads, tunnel and highways)</b>	Concrete (temporary and permanent works, including pre-cast and poured)	800,710	333,630	High	95% recycling offsite
	Concrete (temporary and permanent works, including pre-cast and poured)	42,150	17,560	High	5% disposal offsite
	Steel	98,260	12,440	High	100% recycling offsite
	Rubber	610	410	Low	100% disposal
	Plastic	19,840	22,040	Low	80% recycling offsite
	Plastic	4,960	5,510	Low	20% disposal offsite
	Aggregate	610,370	339,100	High	95% recycling offsite
	Aggregate	32,130	17,850	High	5% disposal offsite
	Cement	5,750	4,110	Medium	75% recycling offsite
	Cement	1,920	1,370	Medium	25% disposal offsite
	Bentonite	77,060	154,120	Medium	75% recycling offsite

Activity	Waste generated	Estimated tonnage	Estimated m <sup>3</sup>	Recovery potential	Anticipated management
	Bentonite	25,690	51,380	Medium	25% disposal offsite
	Iron	240	30	High	100% recycling offsite
	Asphalt	64,790	36,000	High	95% recycling offsite
	Asphalt	3,410	1,900	High	5% disposal offsite
	Timber	24,350	34,780	High	90% recycling offsite
	Timber	2,710	3,870	High	10% disposal offsite
	General waste skips	13,500	13,500	Medium	50% recovery offsite
	General waste skips	13,500	13,500	Medium	50% disposal offsite
	Cardboard (packaging)	11,480	25,500	High	85% recycling offsite
	Cardboard (packaging)	2,030	4,500	High	15% disposal offsite
	Tunnel boring machine (TBM) and ancillaries x2	6,720	860	Low/Medium	49% recycling offsite
	TBM and ancillaries x2	7,000	2,340	Low/Medium	51% disposal offsite

*Potential* European Waste Catalogue (EWC) codes have been provided. However, the waste producer will be legally responsible in providing an appropriate description of any waste produced.

## 2.10 Monitoring

- 2.10.1 As outlined in Section 1.6 of this document, all Contractors would assist the Principal Contractor in collating waste data and Duty of Care records.
- 2.10.2 The Principal Contractor would utilise this information in addition to site audits to monitor ongoing compliance against the legal requirements laid out in Table 2.1 and the Project targets and commitments laid out in Table 2.3 and Table 2.5.
- 2.10.3 The Principal Contractor would submit quarterly monitoring waste reports to Highways England, which would present the following information as a minimum:
- Confirmation of compliance with waste legislation
  - Summary of waste management performance against targets, consents, environmental permits and exemptions registered for construction activities within the Order Limits in the monitoring period
  - A summary of waste sent offsite for disposal and recovery and compliance against the Project targets (see Table 2.8)
  - Where targets are projected to be missed, the Contractors will be required to provide a plan setting out how they can rectify the situation and bring it back to compliance
  - A copy of the latest Contractor audit would be attached, verifying compliance with REAC items MW001 to MW015

**Table 2.8 Project targets**

REAC Ref.	Target	Project % Targets
MW001	Total uncontaminated concrete from demolition	70% recycling and reuse on site of suitable, uncontaminated concrete from demolition activities to substitute use of primary material
	Total crushed and reused within Order Limits	
	Total sent off site for recovery during demolition phase	
	Total sent off site for disposal during demolition phase	
MW013	Total non-hazardous waste generated	Achieve a minimum recovery of 70% (by weight) of non-hazardous construction waste
	Total non-hazardous waste recovered on site* (*excluding site-sourced, naturally occurring excavated ground materials)	
	Total non-hazardous waste sent off site for recovery	
	Total non-hazardous waste sent off site for disposal	
MW011	Total excavated inert ground materials leaving Order Limits	Achieve a target that 95% (by weight) of inert excavated materials

REAC Ref.	Target	Project % Targets
	Amount of excavated inert ground materials leaving Order Limits for recovery	destined for off-site waste management outside the Order Limits would be diverted from final disposal in landfill
	Amount of excavated inert ground materials leaving Order Limits for disposal	
MW015	Total hazardous waste generated	Achieve a target of 70% (by weight) of hazardous construction waste to be diverted from landfill
	Total hazardous waste recovered on site (e.g. remediation)	
	Total hazardous waste sent off site for recovery	
	Total hazardous waste sent off site for disposal	

- 2.10.4 At the close of the construction phase, a final report would be provided and include an Action Plan to address the lessons that have been learned from the Project that could be implemented for future similar projects.
- 2.10.5 Highways England would monitor the Project performance and the implementation of the CSWMP at regular intervals.

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## 3 Conclusion

- 3.1.1 This Outline Site Waste Management Plan (oSWMP) sets out the overarching principles and procedures that would be applied for the management of waste during the construction of the Project. It also defines specific roles and responsibilities to ensure waste is managed effectively.
- 3.1.2 Prior to the commencement of construction, the Principal Contractor would prepare and submit for the approval of the Secretary of State, a Construction Site Waste Management Plan (CSWMP), under Requirement 4 of the draft Development Consent Order (REF TBC). The CSWMP would need to be prepared in accordance with this oSWMP and would need to be updated as a live document throughout the construction phase.

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## References

Contaminated Land: Applications in Real Environments (CL:AIRE) (2011). Definition of Waste: Development Industry Code of Practice, Version 2. Accessed July 2020.

<https://www.claire.co.uk/projects-and-initiatives/dow-cop>

Department for Environment, Food and Rural Affairs (Defra) (2011). Guidance on applying the Waste Hierarchy.

Department for Environment, Food and Rural Affairs (Defra) (2021). Public registers. Accessed January 2021. <https://environment.data.gov.uk/public-register/view/index>

Environment Agency and Waste and Resources Action Programme (WRAP) (2013). Aggregates from Inert Waste: End of waste criteria for the production of aggregates from inert waste. Accessed April 2020.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/296499/LIT\\_8709\\_c60600.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/296499/LIT_8709_c60600.pdf).

Highways England (2019). Design Manual for Roads and Bridges, LA 110 Material assets and waste. Accessed July 2020. <https://www.standardsforhighways.co.uk/dmrb/>.

Scottish Environment Protection Agency (SEPA), Natural Resources Wales (NRW) and Environment Agency (2021). Waste Classification: Guidance on the classification and assessment of waste, WM3. Edition v1.1. Accessed July 2020.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/719394/Waste-classification-technical-guidance-WM3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/719394/Waste-classification-technical-guidance-WM3.pdf).

Waste and Resources Action Programme (WRAP) (undated). Achieving Good Practice Waste Minimisation and Management: Guidance for construction clients, design teams and contractors. Accessed April 2020.

<http://www.wrap.org.uk/sites/files/wrap/WMM%20guide%20Mid%20level.pdf>.

Waste and Resources Action Programme (WRAP) (2008). Net Waste Tool, Guide to Reference Data, Version 1.0.

Waste and Resources Action Programme (WRAP) (2020). WRAP and the Circular Economy. Accessed July 2020. <https://www.wrap.org.uk/about-us/about/wrap-and-circular-economy>



## Annex A CSWMP data Templates

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## Annex A.1 Enabling Works Template

Annexes A.1 to A.5 provide a template for waste forecasting to be adopted by the Contractors as part of the development of the CSWMP and as a result, the entries in these tables have been marked TBC.

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
<b>Site clearance/utility connections/enabling works</b>	Exported utility trenching as-dug offsite waste *potentially hazardous	170503*	TBC	TBC	TBC
	Exported utility trenching as-dug offsite *potentially hazardous	170503*	TBC	TBC	TBC
	Exported utility trenching as-dug offsite (non-hazardous)	170504	TBC	TBC	TBC
	Aluminium (power cable and transmission towers) – removed and wastage	170402	TBC	TBC	TBC
	Steel (gas main and power transmission towers) – removed and wastage	170405	TBC	TBC	TBC
	Concrete (pre-cast pipes, slabs, foundations, sewer) – wastage and temporary works	170101	TBC	TBC	TBC
	Concrete (pre-cast pipes, slabs, foundations, sewer) – wastage and temporary works	170101	TBC	TBC	TBC
	Bituminous road surfacing *potentially hazardous (assumes 25% of total contains coal tar)	170301*	TBC	TBC	TBC
	Bituminous road surfacing *potentially hazardous (assumes 25% of total contains coal tar)	170301*	TBC	TBC	TBC

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
	Asphalt – wastage and temporary works	170302	TBC	TBC	TBC
	Asphalt – wastage and temporary works	170302	TBC	TBC	TBC
	Excess vegetation from site clearance	200201	TBC	TBC	TBC
	Vegetation from site clearance – reused within the Order Limits	200201	TBC	TBC	TBC
	Iron (manholes) – wastage	170405	TBC	TBC	TBC
	Plastic (utility pipework) – wastage and temporary works	170203	TBC	TBC	TBC
	Plastic (utility pipework) – wastage and temporary works	170203	TBC	TBC	TBC

## Annex A.2 Demolition Works Template

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
<b>Demolition (properties and structures)</b>	Concrete from demolition reused as recycled aggregate	170101	TBC	TBC	TBC
	Concrete from demolition – sent offsite	170101	TBC	TBC	TBC
	Concrete from demolition – sent offsite	170101	TBC	TBC	TBC
	Steel	170405	TBC	TBC	TBC
	Other inert (e.g. brick, glass)	170107	TBC	TBC	TBC
	Other inert	170107	TBC	TBC	TBC
	Insulation	170604	TBC	TBC	TBC
	Insulation	170604	TBC	TBC	TBC
	Mixed metal	170407	TBC	TBC	TBC
	Plastic	170203	TBC	TBC	TBC
	Plastic	170203	TBC	TBC	TBC
	Timber	170201	TBC	TBC	TBC
	Timber	170201	TBC	TBC	TBC
	Plasterboard	170801* 170802	TBC	TBC	TBC
	Plasterboard	170801* 170802	TBC	TBC	TBC
Hazardous waste (e.g. asbestos)	170603* 170605*	TBC	TBC	TBC	

## Annex A.3 Construction: Highways North Template

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
<b>Construction (earthworks, compounds, haul roads and highways)</b>	Concrete	170101	TBC	TBC	TBC
	Steel	170405	TBC	TBC	TBC
	Rubber	200301	TBC	TBC	TBC
	Plastic	170203	TBC	TBC	TBC
	Aggregate	170504	TBC	TBC	TBC
	Cement	170101	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Iron	170405	TBC	TBC	TBC
	Asphalt	170302	TBC	TBC	TBC
	Timber	170201	TBC	TBC	TBC
	Contaminated excavated material *potentially hazardous	170503*	TBC	TBC	TBC
	Non-hazardous excavated material	170504	TBC	TBC	TBC
	Inert excavated material	170504	TBC	TBC	TBC
	Inert excavated material – retained in Order Limits	170504	TBC	TBC	TBC
	General waste skips	200301	TBC	TBC	TBC
	Cardboard (packaging)	200101	TBC	TBC	TBC
	Dry mixed recycling	200102 200108 200139 200140	TBC	TBC	TBC

## Annex A.4 Construction: Tunnels Template

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
<b>Construction (earthworks, compounds, haul roads and tunnels)</b>	Concrete	170101	TBC	TBC	TBC
	Steel	170405	TBC	TBC	TBC
	Rubber	200301	TBC	TBC	TBC
	Plastic	170203	TBC	TBC	TBC
	Aggregate	170504	TBC	TBC	TBC
	Cement	170101	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Iron	170405	TBC	TBC	TBC
	Asphalt	170302	TBC	TBC	TBC
	Timber	170201	TBC	TBC	TBC
	Contaminated excavated material *potentially hazardous	170503*	TBC	TBC	TBC
	Non-hazardous excavated material	170504	TBC	TBC	TBC
	Inert excavated material	170504	TBC	TBC	TBC
	Inert excavated material – retained in Order Limits	170504	TBC	TBC	TBC
	General waste skips	200301	TBC	TBC	TBC
	Cardboard (packaging)	200101	TBC	TBC	TBC
Dry mixed recycling	200102 200108 200139 200140	TBC	TBC	TBC	

## Annex A.5 Construction: Highways South Template

Activity	Waste generated	Possible EWC code	Estimated tonnage	Estimated m <sup>3</sup>	Anticipated management
Construction (earthworks, compounds, haul roads and highways)	Concrete	170101	TBC	TBC	TBC
	Steel	170405	TBC	TBC	TBC
	Rubber	200301	TBC	TBC	TBC
	Plastic	170203	TBC	TBC	TBC
	Aggregate	170504	TBC	TBC	TBC
	Cement	170101	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Bentonite	200301	TBC	TBC	TBC
	Iron	170405	TBC	TBC	TBC
	Asphalt	170302	TBC	TBC	TBC
	Timber	170201	TBC	TBC	TBC
	Contaminated excavated material *potentially hazardous	170503*	TBC	TBC	TBC
	Non-hazardous excavated material	170504	TBC	TBC	TBC
	Inert excavated material	170504	TBC	TBC	TBC
	Inert excavated material – retained in Order Limits	170504	TBC	TBC	TBC
	General waste skips	200301	TBC	TBC	TBC
Cardboard (packaging)	200101	TBC	TBC	TBC	
Dry mixed recycling	200102 200108 200139 200140	TBC	TBC	TBC	

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