

A417 Missing Link
TR010056

6.4 Environmental Statement
Appendix 2.1 EMP Annex H Site
Waste Management Plan

Planning Act 2008

APFP Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009

Volume 6

May 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009**

A417 Missing Link

Development Consent Order 202[x]

**6.4 Environmental Statement
Appendix 2.1 EMP Annex H Site Waste Management Plan**

Regulation Number:	5(2)(a)
Planning Inspectorate Scheme Reference	TR010056
Application Document Reference	6.4
Author:	A417 Missing Link

Version	Date	Status of Version
C01	MAY 2021	Application Submission

Table of contents

	Pages
Annex H Site Waste Management Plan	i
1 Introduction	i
1.1 Purpose of this document	i
1.2 Structure and scope of the site waste management plan	i
1.3 Responsibilities	ii
2 Regulatory Framework	iii
2.1 Definition of waste	iii
2.2 Legislation and guidance	iii
3 Waste arisings	iv
3.1 Waste forecasting	iv
3.2 Waste types	iv
3.3 Estimated waste arisings	vi
4 Management of waste	viii
4.1 Waste Hierarchy	viii
4.2 Waste management facilities	ix
4.3 Storage of waste	ix
5 Implementation	x
5.1 Training	x
5.2 Monitoring	x
5.3 Review	x
5.4 Report	xi
5.5 Storage of the SWMP	xi
References	xii

Table of Tables

Table 1-1	Key Project Staff	ii
Table 2-2	The waste hierarchy	iii
Table 3-1	Waste codes for construction waste	v
Table 3-2	Estimated waste arisings	vi

Annex H Site Waste Management Plan

1 Introduction

1.1 Purpose of this document

- 1.1.1 This document forms Annex H of Appendix 2.1 Environmental Management Plan (EMP) (Document Reference 6.4). Annex H is a Site Waste Management Plan (SWMP) for the A417 Missing Link scheme (the scheme). It has been prepared to set out proposals for the identification, segregation, handling and storage of different types of wastes identified as arising from the works, to be governed and managed in line with best practice requirements. The contractor will use this SWMP as a framework for producing the second iteration SWMP (construction stage) for use during the construction of the scheme.
- 1.1.2 Annex H Site Waste Management Plan is secured by environmental commitment MAW2 in the Register of Environmental Actions and Commitments (REAC). The REAC described in Table 3-2 of Appendix 2.1 EMP (Document Reference 6.4) presents an initial register which has been developed using information presented in the ES. The EMP and its associated Annexes will be updated by the contractor when preparing the EMP (construction stage) and then 'as required' as the scheme progresses.
- 1.1.3 The aim of using a SWMP is to minimise the amount of waste produced due to activities as a result of the project, minimising environmental impacts and maximising cost savings. Highways England and the contractor as named in this document would take all reasonable steps to ensure all waste from this site will be dealt with in accordance with the waste hierarchy in part 5 of The Waste (England and Wales) Regulations 2011 which should reduce the amount of material that requires off-site disposal and hence reduce the potential impacts relating to the movement of materials both on to and off-site.
- 1.1.4 The land likely to be required temporarily or permanently for the construction, operation and maintenance of the scheme is within the DCO boundary shown in General Arrangement and Section Plans (Document Reference 2.6).

1.2 Structure and scope of the site waste management plan

- 1.2.1 This SWMP (design stage) has been prepared during the preliminary design stage as part of the Environmental Statement (ES) Appendix 2.1 Environmental Management Plan (Document Reference 6.4) in support of the application for a Development Consent Order for the scheme. Detailed information on the waste arisings is not yet available. This information would become available during the detailed design stage upon appointment of the contractor.
- 1.2.2 The SWMP considers the type and volume of waste that is likely to be generated from the construction of the scheme. It sets out:
- how the waste would be managed on site
 - the waste management facilities available
 - the methods used to measure and record the quantity of waste generated from the construction of the scheme
- 1.2.3 The SWMP is a 'live' document that would be reviewed and updated to incorporate the detailed waste information.

1.3 Responsibilities

1.3.1 The key roles and associated responsibilities with regard to this plan are outlined in Table 1-1 below.

Table 1-1 Key Project Staff

Position	Responsibility
Contractor Project Manager	<ul style="list-style-type: none"> • Ensuring that the SWMP is implemented effectively. • Reviewing and approving the SWMP.
Contractor Environmental Manager	<ul style="list-style-type: none"> • Making and maintaining arrangements that enable those engaged in construction and demolition to co-operate effectively in promoting measures to manage waste in accordance with the terms of the SWMP. • Ensuring, so far as is reasonably practicable, that waste produced during construction is re-used, recycled or recovered.
Contractor Site Manager	<ul style="list-style-type: none"> • Overall responsibility for waste management and any waste removed from site.
Contractor Safety, Health and Environment (SHE) manager	<ul style="list-style-type: none"> • Updating and delivering this SWMP on behalf of Highways England. • Ensuring all procedures in this SWMP are followed. • Ensuring all contractors are suitably qualified and experienced in implementing the measures within the SWMP. These measures would be contained within the terms of contracts to ensure understanding and accountability. • Regularly reviewing (every three months as a minimum) the SWMP and update where necessary. • Reporting on the performance of the SWMP within three months of the work being completed. • Establishing procedures for the regular review and recording of the quality of the works as part of its Quality Management System.
Contractor Waste management coordinator/champion	<ul style="list-style-type: none"> • Maintaining records relevant to the SWMP.

2 Regulatory Framework

2.1 Definition of waste

- 2.1.1 As defined by the Definition of waste: 2018 Waste Framework Directive amendments¹, waste is defined as any substance or object which the holder discards or intends or is required to discard.
- 2.1.2 CL:AIRE is the current management organisation for the DoW:CoP² and sets out good practice for the development industry to use when assessing on a site-specific basis whether excavated materials are classified as waste or not
- 2.1.3 As defined in The CL:AIRE Definition of Waste: Development Industry Code of Practice², materials are only considered waste if they are discarded, intended to be discarded or required to be discarded by the holder. Once discarded, this remains the case even when the holder of the waste changes and the subsequent holder has a use for it. On site, material arisings will either be a waste (managed under this SWMP) or are demonstrably not a waste (in line with CL:AIRE DoW CoP) and managed in the MMP.

2.2 Legislation and guidance

The Waste (England and Wales) Regulations 2011

- 2.2.1 The Waste (England and Wales) Regulations 2011³ requires measures taken before a substance, material or product has become a waste that reduce:
- the quantity of waste, including through re-use of products or the extension of the life span of products
 - the adverse impacts of generated waste on the environment and human health
 - the content of harmful substances in materials and products
- 2.2.2 The regulations require the waste hierarchy, set out in Table 2-2 to be followed in waste prevention and management. This reduces the amount of material that requires off-site disposal and hence reduces the potential impacts relating to the movement of materials both on to and off-site.

Table 2-2 The waste hierarchy

Stages	Includes
Prevention	Using less material in design and manufacture. Keeping products for longer; re use. Using less hazardous material.
Preparing for re-use	Checking, cleaning, repairing, refurbishing, whole items or spare parts.
Recycling	Turning waste into a new substance or product. Includes composting if it meets quality protocols.
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat and power) and materials from waste; some backfilling operations.
Disposal	Landfill and incineration without energy recovery.

Waste Classification, Guidance on the classification and assessment of waste, Technical Guidance WM3⁴

- 2.2.3 The waste generated during construction would be assigned waste codes in line with the guidance. These codes would be provided on each waste transfer note that would accompany every movement of waste from the site.

3 Waste arisings

3.1 Waste forecasting

- 3.1.1 To identify the types of waste generated by the scheme, the construction programme would be divided into its key stages. The key programme stages that have the potential to generate waste include:

- site clearance
- site remediation/preparation
- demolition
- construction

- 3.1.2 The quantities of waste would be determined during detailed design, preliminary estimated waste arisings are outlined in Table 3-2.

3.2 Waste types

- 3.2.1 The key waste streams produced on site can be classified as:

- Inert – wastes that would not cause adverse effects to the environment when disposed of, or do not decompose and they have no potentially hazardous content when placed in a landfill. Examples of inert wastes are rocks, concrete, mortar, glass, uncontaminated soils and aggregates.
- Non-hazardous – wastes that would decompose when buried resulting in the production of methane and carbon dioxide. Examples of non-hazardous wastes include timber, paper and cardboard.
- Hazardous – wastes that are harmful to human health or the environment (for example, pollution of watercourses) if they are inappropriately contained, treated or disposed of. Hazardous wastes may have one or more of the following properties: explosive, corrosive, flammable, highly flammable, infectious, oxidising or sensitising.

- 3.2.2 The scheme would not require any demolition of any existing major structures although the demolition of two residential properties on Crickley Hill (Woodside House and Pinewood) and two commercial properties (The Air Balloon public house and Crickley Hill Tractors) would be necessary.

- 3.2.3 Materials to be removed as part of the site clearance/demolition phase would include: demolition rubble, vegetation surface strip, kerbs, vegetation, trees, traffic signs, safety barriers, lighting, etc.

- 3.2.4 The waste generated during construction would be assigned waste code in line with the List of Wastes included within Waste Classification, guidance on the classification and assessment of waste⁴. Waste are defined by the six-digit code for the waste and the respective two-digit and four-digit chapter heading. A list of relevant codes is provided in Table 3-1. These codes would be provided on each waste transfer note that would accompany every movement of waste from the site.

Table 3-1 Waste codes for construction waste

Chapter heading	Six-digit waste code
17 01 concrete, bricks, tiles and ceramics	17 01 01 concrete 17 01 02 bricks 17 01 03 tiles and ceramics 17 01 06* mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances 17 01 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 wood, glass and plastic	17 02 01 wood 17 02 02 glass 17 02 03 plastic 17 02 04* glass, plastic and wood containing or contaminated with dangerous substances
17 03 bituminous mixtures, coal tar and tarred products	17 03 01* bituminous mixtures containing coal tar 17 03 02 bituminous mixtures other than those mentioned in 17 03 01 17 03 03* coal tar and tarred products
17 04 metals (including their alloys)	17 04 01 copper, bronze, brass 17 04 02 aluminium 17 04 03 lead 17 04 04 zinc 17 04 05 iron and steel 17 04 06 tin 17 04 07 mixed metals 17 04 09* metal waste contaminated with dangerous substances 17 04 10* cables containing oil, coal tar and other dangerous substances 17 04 11 cables other than those mentioned in 17 04 10
17 05 soil (including excavated soil from contaminated sites), stones and dredging spoil	17 05 03* soil and stones containing dangerous substances 17 05 04 soil and stones other than those mentioned in 17 05 03 17 05 05* dredging spoil containing dangerous substances 17 05 06 dredging spoil other than those mentioned in 17 05 05 17 05 07* track ballast containing dangerous substances 17 05 08 track ballast other than those mentioned in 17 05 07
17 06 insulation materials and asbestos-containing construction materials	17 06 01* insulation materials containing asbestos 17 06 03* other insulation materials consisting of or containing dangerous substances 17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03 17 06 05* construction materials containing asbestos
17 08 gypsum-based construction material	17 08 01* gypsum-based construction materials contaminated with dangerous substances 17 08 02 gypsum-based construction materials other than those mentioned in 17 08 01

Chapter heading	Six-digit waste code
17 09 other construction and demolition wastes	17 09 01* construction and demolition wastes containing mercury 17 09 02* construction and demolition wastes containing PCB (for example PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors) 17 09 03* other construction and demolition wastes (including mixed wastes) containing dangerous substances 17 09 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03
* = Mirror entry wastes. Some wastes are not automatically hazardous or non-hazardous. These wastes have: a hazardous waste entry (or entries) marked with an asterisk (*), and an alternative non-hazardous waste entry (or entries) not marked with an asterisk.	

3.3 Estimated waste arisings

3.3.1 The type and quantities of waste likely to arise at each stage of the project have been estimated in Table 3-2 alongside their recover rates. The potential management routes for each waste arising has been identified, based on preliminary design estimates. It is not an exhaustive list of waste types and may be extended as the detailed design develops.

3.3.2 Materials would be reused on site where practicable, diverting away from the waste stream. Material won on-site from excavations will be re-used on-site as general fill for embankments and land landscaping.

Table 3-2 Estimated waste arisings

Project activity	Likely waste from the scheme	Quantity (tonnes)	Quantity (m ³)	Potential management routes	Recovery rate ⁵ (%)
Site remediation, preparation or earthworks	Contaminated soil	1,680	800m ³	Contaminated unacceptable U2 material to tip or treatment hub	0%
	Vegetation arising from site clearance	1,500	2,500	All assumed to keep and re-use on-site, or sent for off-site composting	100%
	Soil (topsoil and subsoil)	Not expected – balanced earthworks		-	-
Demolition	Asphalt from removal of existing road, some of which may contain coal tars	16,100	7,000	Off-site recycling or disposal depending on coal tar content	95%
	Materials from demolition of buildings	600	300	Segregated during demolition to allow for off-site recycling or disposal	75%
Construction	Concrete (ready mixed)	190	75	Off-site recycling or disposal	95%

Project activity	Likely waste from the scheme	Quantity (tonnes)	Quantity (m ³)	Potential management routes	Recovery rate ⁵ (%)
	Concrete (products) e.g. Precast concrete kerb (includes existing kerbs removed but not reused)	500	200	Off-site recycling or disposal	95%
	Steel	40	5	Off-site recycling or disposal	100%
	Asphalt and bituminous material	150	65	Off-site recycling or disposal	95%
	Aggregates	200	100	Off-site recycling or disposal	95%
	Soil (topsoil and subsoil)	Not expected – balanced earthworks		-	-
	Timber/plywood e.g. form work and shutting to cast concrete	9	15	Off-site recycling or energy recovery	90%
Waste from the compounds	General office waste/construction worker waste	Domestic waste is considered to be minimal		Off-site recycling or disposal	85%
	Packaging from materials delivered to site	Packaging is considered to be minimal		Taken back by suppliers for reuse or recycling, sorted and taken offsite for recycling or disposal	85%
Operation	Typically, highway schemes have a material life span of 20-40years before maintenance or upgrading is required, dependent on material properties, maintenance and usage. Maintenance would be carried out in accordance with the Design for Roads and Bridges when the deterioration is judged to affect the standards of the service provided to the road user and the integrity of the pavement structure ⁶	Minimal due to the re-use of planned material		This would be managed by Highways England and is likely to consist of a combination of local recycling facilities, disposal at an inert or non-landfill site	-
Total		20,969	11,060		

3.3.3 The scheme would re-use as much material as practicable on-site, if suitable for re-use. Testing would be undertaken during construction to confirm the materials meet the specification requirements, which would be developed in line with the CL:AIRE Definition of Waste: Development Industry Code of Practice². This would ensure excavated material can be used directly within the scheme, subject to being suitable for use as dug or following site treatment, in line with the

requirements set out in the earthworks specification. Any material that does not meet this specification would be disposed of appropriately.

- 3.3.4 Demolition activities must be planned carefully to ensure opportunities to reuse / recycle on site and off site, are maximised. The CoP facilitates the reuse of source-segregated aggregates arising from demolition. Opportunities to reuse or recycle other demolition arisings will need to be covered under alternative protocols.
- 3.3.5 Should hazardous materials be encountered during construction, these would be handled at storage compounds, prior to transfer to external waste management sites. Non-hazardous materials would be segregated and appropriately re-distributed to alternative projects, subject to CL:AIRE CoP² or other exemptions, or re-distributed to waste management facilities.

4 Management of waste

4.1 Waste Hierarchy

- 4.1.1 The SWMP sets out how waste would be managed throughout each stage of the scheme. Prior to the commencement of any construction works, the contractor would identify suitable waste management contractors and investigate opportunities to recycle materials.
- 4.1.2 Construction waste generated from the scheme would be managed according to the principles of the waste hierarchy which ranks waste management options according to environmental impact. The waste hierarchy indicates “waste prevention” as the best outcome for the environment and “disposal” as the least favoured.

Prevention

- 4.1.3 The contractor would ensure that waste is prevented where possible by using less material in design and manufacture and only ordering quantities of material required.
- 4.1.4 The SWMP would record identified measures to be implemented to prevent and minimise the quantity of waste produced during construction. The following measures have been identified as ways of preventing and minimising the quantity of waste produced during this project:
- All waste arisings to be segregated on site.
 - All materials suitable for re-use will, as far as possible, be used on site (for example earthworks material recovery and material won on-site from excavations to be re-used on site as general fill for embankments and topsoil).
 - Re-usable materials to be identified on site and removed for storage and re-sale.
 - Recyclable materials to be removed from site for processing in licenced facilities.
 - Recoverable materials will be removed from site for processing in licenced facilities.
- 4.1.5 Annex E Materials Management Plan to ES Appendix 2.1 Environmental Management Plan (Document Reference 6.4) sets out the procedure for

managing the materials and identifies how the materials would be managed in order to minimise the amount of waste generated.

Re-use

- 4.1.6 The contractor would ensure that any waste generated on site would be re-used where practicable in accordance with the CL:AIRE Definition of Waste: Development Industry Code of Practice². Re-use is subject to confirmation of materials at the next design phase.

Recycling

- 4.1.7 Recycling facilities in the vicinity of the scheme would be identified by the contractor. Only appropriately permitted waste management facilities would be used to manage waste generated from the scheme. There is potential for the available sites for recycling, reprocessing and disposal to change and it is the responsibility of the contractor to evaluate the waste management market and identify suitable options.

Recovery

- 4.1.8 Opportunities for the recovery of waste generated by the scheme will be considered by the contractor.

Disposal

- 4.1.9 Any waste that cannot be prevented, re-used, recycled or recovered, would be disposed of in a responsible manner.
- 4.1.10 Local waste management facilities have been identified in ES Figure 10.1 Waste management infrastructure (Document Reference 6.3). Suitable waste management facilities would be confirmed and assessed to ensure adequate capacity for the waste generated by the scheme. It is not anticipated that there will be a large amount of waste requiring off-site disposal.

4.2 Waste management facilities

- 4.2.1 There would be three construction compounds including two main compounds and a third compound for material processing (crusher) and stockpiling. The location of the construction compounds can be found on General Arrangement and Section Plans (Document Reference 2.6).
- 4.2.2 One construction compound would complete material processing and would include the material processing crusher and material stockpile compound. This would be located in the fields on the south side of the scheme between Ch 2+300 and Ch 2+600.

4.3 Storage of waste

- 4.3.1 Waste would be stored in line with best practice measures, which include Pollution Prevention Guidelines (PPG)⁷. Whilst these guidelines have now been withdrawn and are undergoing a review, a replacement guidance series, Guidance for Pollution Prevention (GPPs)⁷ are available in addition to some PPGs which remain the most up to date guidance. In particular, PPG 6 will be followed which sets out general measures for storing waste. Further details

associated with storage of waste on-site would be confirmed during the detailed design stage.

- 4.3.2 The location of the construction compounds has been determined to prevent pollution, reduce waste and to encourage ease of use, and taken into account environmental considerations including the potential for leakage and contamination. Storage of any suspected contaminated material prior to treatment or disposal off-site would be in a designated, bunded area on an impermeable surface, in line with the requirements set out in ES Appendix 2.1 Environmental Management Plan (Document Reference 6.4).

5 Implementation

5.1 Training

- 5.1.1 A training regime focused on the provisions of the SWMP would be implemented for all relevant members of the construction team, including those carrying out demolition works to ensure their competence in carrying out their duties on the scheme.
- 5.1.2 Any SWMP training would be additional to the mandatory training requirements on site Health and Safety.
- 5.1.3 A general site induction would be developed to introduce all site personnel to the main provisions of the SWMP, important environmental controls associated with the construction of the scheme and effective delivery of the SWMP (for example, waste storage arrangements, waste segregation at source). A full register of induction attendance would be maintained on site.
- 5.1.4 Toolbox talks and method statement briefings would be given to the construction (and demolition) teams as work proceeds and would cover the types of wastes produced at each key build stage, and the SWMP controls related to specific activities undertaken during the works. A full register of toolbox talks and method statement briefing attendance would be maintained on site.
- 5.1.5 All training records would be maintained and filed on site. The records would include the content of the training courses (induction and toolbox training), record of attendance and schedule of review.

5.2 Monitoring

- 5.2.1 Monitoring of the SWMP would principally be achieved through recording waste type and destination for materials in waste management data sheets, and regular inspections of the works areas by the contractor to ensure that the provisions of this SWMP and control measures outlined in relevant method statements are being implemented.
- 5.2.2 Duty of Care paperwork documenting the movements of waste from the site (i.e. Waste Transfer Notes) and the registered carriers' details would be retained.

5.3 Review

- 5.3.1 During construction, the SWMP would be reviewed as often as necessary or at least once every six months to ensure that the plan accurately reflects the progress of the scheme in terms of waste estimates and targets. As part of the review, the contractor must record the following:

- The types and volumes of waste produced
- Identify on a plan the work area where the waste was removed from
- The types and volumes of waste that have been:
 - re-used (and whether this was on or off site)
 - recycled (and whether this was on or off site)
 - sent for another form of recovery (and whether this was on or off site)
 - sent to landfill
 - otherwise disposed of
- update the SWMP to reflect the progress of the project

5.4 Report

5.4.1 Within three months of the end of construction, the contractor would produce the SWMP (End of Construction) reporting on the performance of the SWMP. This would include:

- confirmation that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan
- a comparison of the estimated quantities of each waste type against the actual quantities of each waste type
- an explanation of any deviation from the plan
- an estimate of the cost savings that have been achieved by completing and implementing the plan
- review of performance against the scheme standards.

5.5 Storage of the SWMP

5.5.1 The contract would ensure the SWMP is kept at the site office or if there is no office, at the site.

5.5.2 The contractor would ensure that every contractor knows where the SWMP is kept and make it available to any contractor carrying out work described in the SWMP.

5.5.3 The SWMP should be kept for two years after the completion of the scheme at the contractor's principal place of business or at the site of the scheme.

References

- ¹ Definition of waste: 2018 Waste Framework Directive amendments, Updated 16 March 2021 [Online]. Available: <https://www.gov.uk/government/publications/legal-definition-of-waste-guidance/definition-of-waste-2018-waste-framework-directive-amendments> [Accessed: 23-Mar-2021].
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