Environmental Statement

Volume 2i: Scheme-wide Assessment

Chapter 13: Waste and materials

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13. WASTE AND MATERIALS

Summary of principal findings

This chapter presents the waste and materials effects associated with the construction and operation of the Huddersfield to Westtown (Dewsbury) section of the Transpennine Route Upgrade (TRU) Programme. This chapter covers the assessment of the entirety of the Huddersfield to Westtown (Dewsbury) route (hereafter referred to as “the Scheme”).

Following the Institute of Environmental Management and Assessment’s (IEMA) guidance on waste and minerals assessment, study areas for the baseline information were established as Yorkshire and The Humber region for waste and Yorkshire and The Humber region and nationally (UK) for materials.

The construction of the Scheme could have the following effects:

- The high volume, short-term, permanent use of landfill void capacity;
- The high volume, short-term, permanent use of materials; and
- The permanent sterilisation of Mineral Safeguarding Areas.

To mitigate these effects the Scheme has been designed to utilise site won material to reduce the need for imported material and waste disposal, through the implementation of a Material Management Strategy, that will become a Material Management Plan before construction work on site begins. Onsite mitigation will also include best practice such as providing separate containers for waste to achieve high recycling rates.

The operation of the Scheme is not anticipated to result in significant effects, and it has therefore been scoped out of this assessment. However, there is still an opportunity for good practice measures to be implemented on site.

This will include source segregating waste arisings to increase recycling and training staff to minimise waste generation. Activities in the operation phase will also fulfil requirements of the Network Rail document “Environment and Social Minimum Requirements for Projects – Design and Construction”, referred to as NR/L2/ENV/015.

Having implemented the mitigation measures the residual effects of the construction phase are estimated to be Neutral for materials and waste, which are not considered significant.

13.1 Introduction

13.1.1 This chapter presents the effects associated with the construction and operation of the Huddersfield to Westtown (Dewsbury) section of the Transpennine Route Upgrade (TRU) Programme on waste and materials. This chapter covers the assessment of the entirety of the Huddersfield to Westtown (Dewsbury) route (hereafter referred to as the 'Scheme').

13.1.2 This chapter is set out as follows:

- Legislative and policy context – relevant international, national and local policy requirements, legal requirements and guidance which have been used to define the assessment approach are outlined;
- Assessment methodology – the methodology the assessment follows is defined including the justification for the study area and the approach for determining significance of effects;
- Baseline – a summary of the waste and materials baseline within the study area is provided;
- Potential effects – the potential impacts and effects (both beneficial and adverse) during construction are characterised;
- Mitigation measures – agreed avoidance, mitigation, compensation and enhancement measures are described;
- Residual effects – the significance of residual effects (both beneficial and adverse) following the implementation of mitigation measures is assessed; and
- Cumulative effects - the potential likely significant cumulative effects of the Scheme are described and assessed.

13.1.3 There are no Route Section Assessments (Volume 2ii) for waste and materials, due to the way waste is managed, and materials are handled, which means an assessment at a Scheme-wide scale is more appropriate.

13.1.4 A detailed description of the Scheme is provided in Chapter 2 (Scheme description) of this Environmental Statement (ES) and all appendices and figures referred to in this chapter are provided in Volumes 3 and 4 of this ES respectively.

13.1.5 For the purposes of this chapter, Waste is defined in Article 3 (1) of the European Waste Framework Directive 2008/98/EC (WFD) as 'any substance or object which the holder discards or intends or is required to discard'. The term 'holder' is defined as the producer of the waste or the person who is in possession of it and 'producer' is defined as anyone whose activities produce waste. The Waste Framework Directive was transposed into UK law by the Waste (England and Wales) Regulations 2011

13.1.6 Materials are defined to include both primary and secondary materials. Primary materials include materials such as virgin aggregates and minerals. Secondary materials include manufactured construction products such as recycled and reclaimed aggregates. Secondary materials typically originate off-site and are purchased as construction products however, some materials arise on-site, for example excavated soils and road planings.

13.2 Legislative and policy context

13.2.1 A summary of legislative requirements in relation to materials and waste and how they apply to the Scheme is presented in the following paragraphs.

13.2.2 Many of the relevant UK acts and regulations relating to waste incorporate European Union (EU) directives into UK Law. These include:

- EU Revised Waste Framework Directive (2008/98/EC), transposed by Waste (England and Wales) Regulations 2011;
- EU Landfill Directive (1999/31/EC), as amended by the EU Directive (2003/33/EC) transposed into English and Welsh law by the Landfill (England and Wales) (Amendment) Regulations 2004 (now repealed) and re-transposed in the Environmental Permitting (England and Wales) Regulations 2007 (now repealed), and amended by Environmental Permitting (England and Wales) Regulations 2016; and
- EU Regulation 1272/2008 on classification, labelling and packaging of substances and mixtures (including revisions). Regulations are not directly transposed however The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019 contain provisions relating to 1272/2008/EC on Classification, Labelling and Packaging of Substances and Mixtures (EU CLP Regulation) and make specific amendments to the regime necessary to ensure the proper continued functioning of this legislation

National

National Planning Policy Framework

13.2.3 The National Planning Policy Framework (2019) (NPPF) identifies the importance of using natural resources prudently and minimising waste as part of its goal to support sustainable development. It identifies that strategic policies should make provision for minerals and waste management. Section 17 focuses on “Facilitating the sustainable use of minerals”, and states planning policies should include consideration of the following points:

- Provide for the extraction of mineral resources of local and national importance, except for peat;
- Take account of the contribution that recycled materials and minerals waste can make to supply of materials; and
- Safeguard mineral resources by defining Mineral Safeguarding Areas (MSA).

National Planning Policy for Waste 2014

13.2.4 The National Planning Policy for Waste follows the principles set out in Planning Policy Statement 10 (PPS10), which states that waste should be managed in line with the principles of the waste hierarchy. It is important to ensure that, where possible, waste production is minimised to reduce environmental impacts and to ensure an assessment is made of the local waste infrastructure type and capacities, to include, but not be limited to, an assessment of the local policies.

Resources and Waste Strategy for England 2018

13.2.5 The strategy sets out national policy for minimising waste, promoting resource efficiency and moving towards a circular economy. The strategy focuses on the importance of driving waste management up the waste hierarchy and states the importance of considering the Government’s ambition of achieving zero avoidable waste.

13.2.6 The strategy is based around two overarching objectives which aim to maximise the value of resource use and to minimise waste and its impact on the environment.

13.2.7 The strategy puts a strong emphasis on waste prevention through making products using fewer natural resources. The strategy references the UK statistics on waste which show that over 90% of non-hazardous construction and demolition waste was recovered in 2016.

The Environmental Protection Act 1990 (c.43) as amended

13.2.8 The Act implements integrated pollution control for the disposal of waste to air, land and water, including solid waste disposal.

13.2.9 As part of this, under Section 34, the Act imposes Duty of Care on anyone who produces, imports, keeps, stores, transports, treats or disposes of waste.

13.2.10 This will mean that the applicant and all contractors must take all reasonably practical steps to ensure that:

- Waste is consigned only to a registered waste carrier, licensed waste contractor, local authority waste collector or person dealing with waste in ways that are exempt from licensing;
- Waste that is disposed of is accompanied by a detailed written description of the waste to ensure its safe handling, treatment and disposal (waste transfer notes are to be kept for a minimum of two years and hazardous waste consignment notes are to be kept for a minimum of three years);
- Waste is securely contained to prevent it escaping to the environment;
- Appropriate measures are taken to ensure that others involved in the handling and disposal of waste do so in accordance with all applicable Regulations;
- Copies of registration certificates should be obtained for all waste contractors and waste carriers used as part of the Scheme and it should be ensured that they are on the Environment Agency's 'Public Register of Waste Carriers, Brokers and Dealers'; and
- Checks should be made on the destination of each waste, ensuring that each waste management facility is licensed to accept the waste. Duty of Care audits of carriers and waste management facilities are advisable.

Clean Neighbourhoods and Environment Act 2005 (c.16)

13.2.11 Chapter 16 of the Clean Neighbourhoods and Environment Act prescribes the correct transportation, collection, disposal and management of waste and prohibits fly tipping.

Waste (England and Wales) Regulations 2011 (SI 2011/988)

13.2.12 The Regulations transpose the Revised EU Waste Framework Directive (2008/98/EC) into English law and require organisations to manage waste in accordance with the waste hierarchy, to prevent waste going to landfill.

13.2.13 Waste management contractors working on the Scheme will be required to provide evidence that the waste hierarchy has been applied. This evidence can be in the form of waste transfer notes and hazardous waste consignment notes, which themselves must be kept for two and three years, respectively.

The Hazardous Waste (England and Wales) Regulations 2005 (SI 2005/894)

13.2.14 The Regulations transpose the Waste Directive (Directive 91/689/EC), providing a definition of hazardous waste and require a hazardous waste consignment note to be produced for movement of hazardous waste.

Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 (SI 2013/3113)

13.2.15 The Regulations have a key objective to reduce the amount of WEEE that goes to landfill. This is to be achieved by making producers responsible for the collection, treatment and recovery of WEEE, including the associated costs.

13.2.16 For the Scheme, all WEEE produced in the construction, demolition and excavation (CD&E) and operational phases must be segregated and managed separately from other wastes, with relevant paperwork provided as described above.

The Waste Batteries and Accumulators Regulations 2015 (SI 2015/1935)

13.2.17 The Regulations main requirements are that producers of batteries and accumulators must either take back waste batteries and accumulators or fund the collection and recycling of them. The 2015 amendment removed several additional requirements, inclusive of the provision of operational plans and independent audit reports.

13.2.18 All batteries produced in the CD&E and operational phases must be segregated and managed separately from other wastes.

The Classification, Labelling and Packaging Regulations (EC 1272/2008)

13.2.19 The Regulations provide guidance on the application of the Classification, Labelling and Packing Regulations (CLP) criteria for hazards (physical, health and environmental). With specific reference to the Scheme, the Regulation should be used to support the classification of both waste and materials. All waste should be classified by a six-digit code, which must be recorded on all waste transfer notes and hazardous waste consignment notes for the movement of waste during the CD&E and operational phases of the Scheme.

13.2.20 The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use) (Amendment etc.) (EU Exit) Regulations 2019 contain provisions relating to 1272/2008/EC on Classification, Labelling and Packaging of Substances and Mixtures (EU CLP Regulation) and make specific amendments to the regime necessary to ensure the proper continued functioning of this legislation

Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 (SI 2000/1043)

13.2.21 The Regulations require the safe disposal or decontamination of all equipment that contains polychlorinated biphenyls (PCBs). Contaminated equipment containing over 5 litres or more of PCB substance or mixture is also covered by the Regulations. PCBs are often present in areas of historical industrial use.

The Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154)

13.2.22 The Regulations put in place requirements to ensure that sites that produce certain materials and undertake certain activities (such as the storage, use or treatment of waste) have a permit or exemption from the regulator (i.e. the Environment Agency (EA)).

13.2.23 Permit or exemption details of all sites that manage waste from the Scheme will be checked to ensure waste is being managed in accordance with all applicable legislation and policies and in accordance with good practice.

Environmental Damage (Prevention and Remediation) (England) Regulations 2017 (SI 2017/1177)

13.2.24 The Regulations introduce obligations to ensure the polluter pays for any environmental damage caused. The Regulations require caution to be taken when managing sites to prevent damage to water, land and biodiversity. Such damage could be caused by poor waste management practices and as such the generation of waste from the Scheme must be managed in accordance with all applicable legislation and policies and in accordance with good practice.

The Control of Asbestos Regulations 2012 (SI 2012/632)

13.2.25 The Regulations require notification to the appropriate authority of all notifiable asbestos works (as specified in the Regulations), the medical surveillance (from April 2015) and health records for employers dealing with asbestos, the provision of the correct equipment and training for working with asbestos; and the documentation of the method, storage and disposal of asbestos waste. Any waste containing asbestos (e.g. insulation or lagging) must be stored and disposed of, in suitable packaging to prevent fibre release, in line with the Regulations. All asbestos must be removed by a licensed contractor who has undergone the appropriate training for the removal of asbestos and must wear the appropriate Personal Protective Equipment (PPE). Written records must be kept of the workers and the likely level of exposure. The asbestos must only be disposed of at an appropriately permitted disposal site.

Local

Yorkshire and Humber Waste Position Statement 2016

13.2.26 The position statement describes the area (sub regions of Humber, North Yorkshire, South Yorkshire and West Yorkshire), highlighting its diversity from large urban areas to extensive, highly rural areas. Reflecting this is the diversity of facilities across Yorkshire and Humber with some areas having a high proportion of energy recovery facilities while others have a larger proportion of landfills.

13.2.27 It also sets out its support of the Government's goal to move waste up the waste hierarchy.

13.2.28 In terms of infrastructure, the position statement shows that at the end of 2014 the area had approximately 92 million cubic metres (m^3) of landfill capacity (31 million in West Yorkshire), down from 101 million m^3 in 2011. In contrast there were several new large-scale capacity energy recovery facilities being constructed or soon to be constructed (six of which are to be in West Yorkshire).

13.2.29 In relation to the Scheme, the position statement showed that West Yorkshire has the most operational facilities of the four sub regions, with 288 facilities (including anaerobic digestors and composting, transfer stations and material recycling facilities, energy from waste facilities and landfills). As such, waste from the Scheme should seek to be managed as close to the point of generation as possible.

West Yorkshire Combined Authority Waste Needs Assessment 2017

13.2.30 This analysis showed that most CD&E waste generated in the West Yorkshire sub-region is managed there, whilst "exports" were only significant to adjacent authorities within the Yorkshire and Humber region. Exported CD&E waste accounted for less than 10% of estimated arisings and 92% of these exports remained within the Yorkshire and Humber region.

13.2.31 Data showed most of the construction and demolition waste is recycled whereas the majority of excavation waste is landfilled.

13.2.32 The future modelling (2017 to 2036) shows there is not likely to be a gap in capacity for transfer stations up to 2036 and there is likely to be excess capacity for recycling until 2028 although by 2036 there may be a capacity gap of 4,398 tonnes. The modelling also anticipates there may be a capacity gap for inert landfill of 697,045 tonnes by 2036 in the worst case. This relates specifically to excavation waste and indicates the Scheme should ensure all measures are taken to reduce excavation waste (see Section 13.6 on mitigation measures which will be taken).

Kirklees Local Plan 2019

13.2.33 The plan sets out how much new development is anticipated in the district and the designated areas for it, up to 2031. Within this it covers issues including minerals (materials) and waste. The two main policies which need to be considered in relation to this Scheme are summarised below.

13.2.34 Policy LP38 deals with Minerals Safeguarding and sets out stipulations for when surface development will be permitted within MSAs, which includes demonstrating that there is an overriding need for the development.

13.2.35 The Scheme passes through sand and gravel and clay MSA and the plan highlights that there are only limited sand and gravel reserves in the district. The design has minimised land take to that which is unavoidable, which will minimise the area of the MSA that the Scheme encroaches on. Figure 13-1 (Sand and gravel) and Figure 13-2 (Clay), show which areas of the MSAs are affected by which sections of the Scheme.

13.2.36 Policy LP43 highlights the importance of the waste management hierarchy and that the council will encourage and support the minimisation of waste and support the re-use and recovery of waste.

13.2.37 The section on waste management further discusses that the UK must reduce packaging and that in the future products should contain higher levels of recycled materials and be made from components capable of being re-used or recycled at the end of their useful life.

13.2.38 In terms of the Scheme, the waste hierarchy should be implemented at the design, construction and operational stage, with emphasis on areas such as packaging, recycled content and recyclability of components.

Technical guidance and standards

13.2.39 The assessment in this chapter has been undertaken in accordance with the Institute of Environmental Management and Assessment's (IEMA) guidance on Waste and Minerals in an Environmental Impact Assessment (EIA)[1]. This is considered the most appropriate guidance to use for this assessment.

13.2.40 The Design Manual for Roads and Bridges has a standard LA110, which is applicable to roads and road bridges only and therefore has not been used.

13.3 Assessment methodology

Study area

13.3.1 In line with IEMA guidance, the study area for the Scheme will be Yorkshire and The Humber region for waste and Yorkshire and The Humber region and nationally (UK) for materials.

13.3.2 This is considered appropriate as the majority of waste is likely to be managed within the region (as confirmed in the Waste Needs Assessment summarised above) and the majority of materials is likely to be sourced within the region. The exception to this in relation to the Scheme is steel and as such, the study area for materials is extended to be nationally for steel.

[1] IEMA guide to: Materials and Waste in Environmental Impact Assessment - Guidance for a proportionate approach. March 2020.

Data sources

13.3.3 The baseline has been established through a desk-based review of regional and national data, based on IEMA guidance, from the following sources:

- Environment Agency (EA) Remaining Landfill Capacity, 2020[2];
- The Mineral Products Industry at a Glance, 2018 Edition[3]; and
- UK Steel (2016). Annual Review 2016 – UK Demand Table[4].

Approach

13.3.4 The following steps have been carried out to determine the impact of waste and materials resulting from the Scheme:

- Review of relevant waste legislation, national, regional and local planning policies and guidance to identify materials and waste management objectives and targets;
- Review of the design to estimate the quantities and types of materials to be used and wastes to be generated during construction;
- Identify and evaluate the impacts of the Scheme against materials (including MSAs and peat resources) and regional landfill capacity; and
- Identify opportunities/mitigation measures to reduce, re-use, recover and/or recycle materials and wastes through a review of the Scheme.

Assessment criteria

13.3.5 The assessment of significance is based on:

- The percentage increase in regional and national demand for materials, which are to be used as part of the Scheme; and
- The percentage increase in demand placed on regional landfill capacity.

13.3.6 The criteria for assessing the sensitivity of receptors and magnitude of impact are outlined in Table 13-1 and Table 13-2, respectively.

Table 13-1 Sensitivity criteria

Sensitivity of receptor	Criteria (highest category applies where one or more criteria are met)
Very High	• Materials are known to be insufficient in terms of production, supply and/or stock; and/or comprise no sustainable features and benefits compared to industry-standard materials. • Inert and non-hazardous waste baseline landfill void capacity is expected to reduce very considerably (by >10%)/end during construction or operation; is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand. • Hazardous waste baseline landfill void capacity is expected to reduce very considerably (by >1%)/end during construction or operation; is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand.
High	• Materials are forecast (through trend analysis and other information) to suffer from known issues regarding supply and stock; and/or comprise

[2] https://data.gov.uk/dataset/237825cb-dc10-4c53-8446-1bcd35614c12/remaining-landfill-capacity
[3] https://mineralproducts.org/documents/Facts-at-a-Glance-2018.pdf
[4] https://www.nass.org.uk/Publications/Publication4310/UK-Steel-Annual-Review--2016_2120317_SP.pdf

Sensitivity of receptor	Criteria (highest category applies where one or more criteria are met)
	little or no sustainable features and benefits compared to industry-standard materials. • Inert and non-hazardous waste baseline landfill void capacity is expected to reduce considerably by 6-10% as a result of wastes forecast. • Hazardous waste baseline landfill void capacity is expected to reduce considerably by 0.5-1% as a result of wastes forecast.
Medium	• Materials are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock; and/or are available comprising some sustainable features and benefits compared to industry-standard materials. • Inert and non-hazardous waste baseline landfill void capacity is expected to reduce by 1-5% as a result of wastes forecast. • Hazardous waste baseline landfill void capacity is expected to reduce by 0.1- 0.5% as a result of wastes forecast
Low	• Materials are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock; and/or are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials. • Inert and non-hazardous waste baseline landfill void capacity is expected to reduce by <1% as a result of waste forecast • Hazardous waste baseline landfill void capacity is expected to reduce by <0.1% as a result of wastes forecast
Negligible	• Materials are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock; and/or are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials* • Inert and non-hazardous waste baseline landfill void capacity is expected to remain unchanged or is expected to increase through a committed change in capacity. • Hazardous waste baseline landfill void capacity is expected to remain unchanged or is expected to increase through a committed change in capacity.

* Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise reused, secondary or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.

Table 13-2 Magnitude criteria

Impact severity	Criteria (highest category applies where one or more criteria are met)
Major	• The consumption of one or more materials is >10% by volume of the regional baseline availability; and/or more than one allocated mineral or peat resource site is substantially sterilised by the development rendering it inaccessible for future use. • Inert and non-hazardous waste generated by the development will reduce regional landfill void capacity baseline by >10%. • Hazardous waste generated by the development will reduce national landfill void capacity baseline by >1%
Moderate	• The consumption of one or more materials is between 6-10% by volume of the regional baseline availability; and/or one allocated mineral site is substantially sterilised by the development rendering it inaccessible for future use.

Impact severity	Criteria (highest category applies where one or more criteria are met)
	• Inert and non-hazardous waste generated by the development will reduce regional landfill void capacity baseline by 6-10%. • Hazardous waste generated by the development will reduce national landfill void capacity baseline by <0.5-1%
Minor	• The consumption of one or more materials is between 1-5% by volume of the regional baseline availability; and/or the development has the potential to adversely and substantially impact access to one or more allocated mineral site (in their entirety), placing their future use at risk. • Inert and non-hazardous waste generated by the development will reduce regional landfill void capacity baseline by 1-5%. • Hazardous waste generated by the development will reduce national landfill void capacity baseline by <0.1-0.5%
Negligible	• The consumption of no individual material type is equal to or greater than 1% by volume of the regional baseline availability • Inert and non-hazardous waste generated by the development will reduce regional landfill void capacity baseline by <1% • Hazardous waste generated by the development will reduce national landfill void capacity baseline by <0.1%
No change	• The consumption of no materials is required. • Inert and non-hazardous zero waste generation and disposal from the development • Hazardous zero waste generation and disposal from development

13.3.7 The assessment will combine the sensitivity and magnitude of the environmental impacts to determine whether they are major, moderate, minor or negligible effects, as shown in Table 13-3.

13.3.8 Moderate and above effects are considered significant in the context of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Table 13-3 Significance of effect matrix

		Magnitude of impact				
		No Change	Negligible	Minor	Moderate	Major
Sensitivity (or value) of receptor	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

Residual impact assessment

13.3.9 If further mitigation (in addition to that which is embedded in the Scheme design) is required to reduce otherwise significant waste and materials effects, this is identified in the residual impact section along with a final assessment of the ultimate impact. This has been an iterative process throughout the Scheme's design to ensure that mitigation can be built into the design wherever possible with the objective of removing all significant residual risks at

the design stage.

Scoping and consultation

13.3.10 Table 13-4 contains a summary of what has been scoped in and out for the waste and materials assessment in this ES.

13.3.11 Based on professional judgement, the operational phase of the Scheme is scoped out, as minimal material use, and waste generation is anticipated. Details on operational phase mitigation has however still be included, as good practice (see Section 13.6).

Table 13-4 Scope of assessment

Effects	Scoped in/out
Change in demand for materials during the CD&E phases	In
Change in baseline waste arisings during the CD&E phases	In
Change in capacity of waste infrastructure during the CD&E phases	In
Change in demand for materials during the operational phase	Out
Change in baseline waste arisings during the operational phase	Out
Change in capacity of waste infrastructure during the operational phase	Out

13.3.12 Through the consultation process, Kirklees Council has stated that there is a significant level of coal tar in the existing road construction across much of the highway network. When this is removed as part of the construction phase it will be classified as a hazardous waste (along with small amounts of packaging for paints and oils and any materials from cleaning spills of these materials etc) and managed through appropriately licensed waste management facilities. Details on management of hazardous waste will be set out in Part B of the Code of Construction Practice (CoCP) through the site waste management plan (SWMP). The content of which will be submitted to and agreed by the Local Authority (Kirklees Council) pursuant to a condition to be attached to the deemed planning permission[5], prior to construction works commencing.

13.3.13 Engagement is ongoing with the Environment Agency with regard to the reuse of excavated materials within the Scheme. In principle, agreement was reached on the approach to the Materials Management Strategy (detailed in paragraph 13.6.7) at a meeting held on 3rd July 2020. There was also agreement that ongoing discussions would continue as the detailed design develops and more certainty around material quantities are known. This engagement will continue into the development of the Materials Management Plan, to be submitted under Part B of the CoCP (see paragraph 13.6.5).

Assumptions and limitations

13.3.14 The assumptions and limitations applicable to the proposed assessment methodology, are outlined as follows:

- All material and waste quantities have been converted into tonnes or cubic metres, from the design information provided, using industry standard conversion rates;
- All materials have been grouped according to main material types;
- All wastes that were shown as “Return to Network Rail Local Distribution Centres for processing” have been excluded from the waste assessment as it is understood these wastes will be reused or recycled and assessment focuses on impact of waste on landfill only; and

[5] On making an order under the Transport and Works Act 1992, the Secretary of State may direct that planning permission shall be deemed to be granted, subject to such conditions (if any) as may be specified in the direction.

- The data for some elements of the Scheme were limited or not available at the time of this assessment and assumptions have been used, based on professional judgement. It is anticipated that these assumptions will not significantly change the outcome of the assessment. Additionally, any changes to excavated materials will be captured through the MMP.

13.4 Baseline

13.4.1 In order to assess the Scheme against the sensitivity and magnitude criteria set out in Table 13-1 and Table 13-2, baseline information for materials sales, mineral or peat resource sites and landfill capacity is set out as follows.

Materials

13.4.2 Data for material sales are summarised in Table 13-5.

Table 13-5 Material sales baseline

Material	Regional tonnes per annum (tpa)	National tonnes per annum (tpa)
Crushed rock	10,900,000	
Sand and gravel	2,500,000	
Ready-mixed concrete	1,200,000 (m^3)	
Asphalt	2,100,000	
Cement		13,000,000
Steel		10,900,000

Mineral Safeguarding Areas

13.4.3 The Scheme passes through a sand and gravel and a clay MSA[6] as can be seen in Figures 13-1 and 13-2.

Landfill void capacity

13.4.4 The Environment Agency's Waste Data Interrogator is interpreted by Environment Agency itself to provide estimated landfill void capacity. Table 13-6 summarises this information, from Yorkshire and The Humber for 2016, 2017 and 2018, which are the most recent years data available.

Table 13-6 Landfill void capacity baseline

	2016	2017	2018
Inert and Non-Hazardous Landfill (000s m^3)	61,373	57,427	68,475
Hazardous Landfill (000s m^3)	2,514	2,666	2,651

13.5 Potential effects

13.5.1 Receptors, with regards to waste and materials, are defined as:

- The regional and national sales of materials, which are to be used as part of the Scheme;
- The regional MSAs; and
- Landfill void capacity.

[6] Minerals Safeguarding Areas, Policy Options Report, November 2015

Construction

13.5.2 The construction of the Scheme could have the following effects:

- The high volume, short-term, permanent use of materials;
- The permanent sterilisation of MSAs; and
- The high volume, short-term, permanent use of landfill void capacity.

13.5.3 As above it is anticipated that these potential impacts will be addressed to ensure that wastage of materials is minimised, with efforts made to maximise on-site reuse, off-site recycling and/or recovery of the waste generated.

Materials

13.5.4 Aggregates that will be used comprise a large proportion of track ballast and a smaller amount of sand which will be part of the permanent works. The large majority of the rest of the aggregates will be for temporary construction of the compounds and haul roads.

13.5.5 Concrete will be used in several permanent components such as bridge slabs and beams, bridge footings/piles, footings for the lineside fencing and rail sleepers.

13.5.6 Steel will be largely used for bridges, new rail and lineside fencing.

13.5.7 The following tables set out the potential material volumes and effects the use of those volumes will have on receptor baselines.

13.5.8 The assessment has taken a precautionary, worst case approach assuming all soil is removed from site and aggregates are used for earthworks.

Table 13-7 Potential material volumes

Material	Tonnes	Cubic metres
Aggregates	444,318	
Concrete		21,877
Steel	6,534	

Table 13-8 Potential material assessment

Material	Material baseline (tonnes)	Estimated material use (tonnes)	Percentage impact	Sensitivity of receptor	Impact severity	Effect category
Aggregates	13,400,000	444,318	3.32	Low	Minor	Neutral or Slight
Concrete	1,200,000*	21,877*	1.82	Low	Minor	Neutral or Slight
Steel	10,900,000	6,534	0.060	Low	Minor	Neutral or Slight

* Cubic Metres

Waste

13.5.9 As discussed above the aggregate waste will be generated by the demobilisation of the compounds, haul roads and other structures.

13.5.10 Blockwork, concrete and metal will be generated from bridge demolitions, removing existing footings and infill etc.

13.5.11 The features identified as generating the most of these waste streams are:

- Blockwork
  - A62 Leeds Road Overbridge (MVL3/102);
  - Huddersfield Viaduct (Span 1) Underbridge (MVL3/92(1)); and
  - B6118 Bridge Road Overbridge (MVL3/107).
- Concrete
  - Parks Overbridge (MVL3/110 and MVL4/1);
  - A62 Leeds Road Overbridge (MVL3/102); and
  - Toad Holes, Dewsbury Underbridge (MDL1/12).
- Metal
  - Huddersfield Viaduct (Span 1) Underbridge (MVL3/92(1));
  - Huddersfield Viaduct (Span 29) Underbridge (MVL3/92(9)); and
  - Station Road Underbridge (MVN2/193).

13.5.12 Green waste will be generated from clearance of areas to construct the compounds, haul roads and to access structures and the railway along the Scheme.

13.5.13 General waste will be generated by the workforce from food packaging and office type waste.

13.5.14 The following tables set out the potential waste volumes and effects the generation of those volumes will have on receptor baselines.

13.5.15 The assessment has taken a precautionary, worst case approach assuming no reuse or recycling with all waste going to landfill.

Table 13-9 Potential waste volumes

Waste	Cubic metres
Aggregate	28,194
Asphalt	73
Blockwork	875
Concrete	2,970
Soil*	400,623
Metal	2,760
Green waste	3,188
General waste	11,447
Total	450,130

* Excavated material will be soil and potentially brick, concrete and other inert wastes and underlying superficial geology and bedrock

Table 13-10 Potential waste assessment

Landfill capacity baseline (m^3)	Estimated waste (m^3)	Percentage impact	Sensitivity of receptor	Impact severity	Effect category
68,475,000	450,130	0.66	Low	Negligible	Neutral or Slight

13.5.16 In summary, during construction, the amount of material resource use and waste generation is estimated to have a neutral or slight impact regionally/nationally. These are not considered significant effects.

Table 13-11 Summary of potential effects

Receptor	Description of impact	Potential effect
Materials market	Material use	Neutral or slight
Landfill void capacity	Waste generation	Neutral or slight

Operation

13.5.17 The operation of the Scheme is anticipated to have the following effects:

- Very low volume long-term, permanent use of materials; and
- Low volume, long-term, permanent use of landfill void capacity.

13.5.18 As this is an upgrade to an operational railway, with like for like station provision planned, it is not anticipated that there will be any significant variation from the baseline for the operational phase. Therefore, is scoped out of further assessment in this Chapter.

13.5.19 The use, transport, storage and processing of materials and waste will have potential effects on air quality, noise, landscape and sustainability. Any impacts associated with this are addressed in the corresponding Chapters of this ES.

13.6 Mitigation measures

Designing out material use and waste

13.6.1 Excessive waste generation and material use has been considered during the design of the Scheme, to ensure materials used are:

- Reused (from excavation and/ or demolition), where practicable; and/or
- Recycled or reclaimed, where practicable.

13.6.2 Although these measures have been considered, in the absence of detailed site investigation date and confirmation that material is suitable for reuse and to ensure Section 13.5 assesses a worst-case approach it has been assumed that all soil is removed from site as waste and new materials are needed for earthworks. The residual effects section (Section 13.7) considers the impact of using site won materials. Further to these actions, the design has sought to identify opportunities to reduce material use, based on carbon calculations (see Chapter 17 (Effects on climate) for further details).

13.6.3 The following sections detail the mitigation measures that will be implemented additional to the embedded mitigation.

13.6.4 Application of the waste hierarchy (reduce, reuse, recycle, recover and dispose) is an overarching action to those identified within this Section.

Construction

13.6.5 Part A of the Code of CoCP is included at Appendix 2-1. Part B of the CoCP will include a Material Management Plan (MMP) (see the following Materials Management Strategy (MMS) section for more detail) and a Site Waste Management Plan. These documents will be submitted to the Local Authority pursuant to conditions attached to the deemed planning permission. The MMP will also be reviewed by a Definition of Waste: Code of Practice (DoWCoP)[7] Qualified Person and a declaration submitted to Contaminated Land:

[7] DoWCoP provides a framework for to facilitate the reuse of excavated materials without the need for an Environmental Permit or exemption

Applications in Real Environments (CL:AIRE)[8] prior to the relevant works commencing.

13.6.6 There are several different measures which will be utilised for materials and waste. These are detailed in the following sections.

Materials Management Strategy (MMS)

13.6.7 A MMS has been produced and is included in Appendix 13-1 of this ES which aims to minimise, as far as is reasonably practicable, off site material imports and waste management and disposal, through the reuse of suitable site won material from excavations. This is an additional mitigation measure.

13.6.8 The MMS will be developed into a MMP when the Scheme's design is finalised and prior to the construction phase. The MMP will be produced in accordance with the Contaminated Land: Applications in Real Environments (CL:AIRE) – Definition of Waste: Development Industry Code of Practice (DoWCoP) and will be submitted to the Local Authority under Part B of the CoCP.

13.6.9 Measures to be incorporated into the MMP will include details of the Scheme requirement to implement a material tracking system to identify, track, monitor and report on material use.

13.6.10 The aim of the tracking system is to ensure that:

- Materials and wastes are segregated;
- Materials and wastes are stored in the appropriate stockpiles;
- Only chemically and geotechnically suitable materials are used;
- The correct quantity of material is stored and used;
- Materials and wastes are stored for the approved time period;
- Unexpected wastes are tracked and manged in accordance with the contingency plan; and
- Wastes requiring off-site management are removed from site.

On-site management of materials and waste

13.6.11 On-site mitigation measures will be applied to the Scheme as good practice. These include:

- Setting targets for waste recovery and recycling and communicating these to those working on the Scheme, with a clear understanding of what is expected;
- Using components that can be prepared off-site to minimise waste generation on-site;
- Not over ordering materials and using materials brought to site as efficiently as possible;
- Organising deliveries so materials arrive on-site as they are needed to reduce the possibility of damage and wastage occurring;
- Having clearly defined and separated skips on-site and a clearly demarked waste area(s); and
- Training staff to understand how they should sort any waste material and providing regular reminders and updates.

[8] CL:AIRE - claire.co.uk

Treatment and disposal

13.6.12 The Scheme will be committed to achieving high recycling and recovery rates, as part of embedded mitigation measures (a minimum of 90% non-hazardous waste to be reused or recycled by 2023/24 in line with Network Rail Key Performance Indicators (KPIs)).

13.6.13 This will be achieved by arranging for the source segregation of recyclable waste and the provision of appropriate recycling facilities. Achieving a high recycling rate will minimise the environmental burden in terms of pollution, energy consumption, the carbon impact and the emission of large quantities of carbon dioxide equivalent associated with the production of products from virgin material.

13.6.14 Network Rail operates material recovery through its national Route Services function. Route maintenance, construction activities and renewal activities on the railway result in redundant lineside material such as rail, sleepers, cable and ballast. Network Rail's Supply Chain Operations (SCO) manage the work to recover and process these materials through three principle material handling depots at Whitemoor, Crewe and Westbury. Some recovered assets are serviced and re-used on the network; others are processed for recycling.

13.6.15 The Whitemoor depot has a ballast washing facility where the small percentage of contaminated ballast that is recovered is sent for decontamination and then re-use or recycling. During construction of the Scheme, any ballast will be recovered and processed for re-use on the network.

Operation

13.6.16 Although the operational phase has been scoped out of the assessment, there is still an opportunity for good practice measures to be considered. The measures that will be considered include:

- Any materials required for planned/unplanned maintenance will be managed in accordance with the good practice procedures outlined in the above sections;
- Recyclable waste will be source segregated. This will be achieved through the provision of clearly marked and/or colour-coded containers to enable easy identification of where waste should be placed during planned/unplanned maintenance;
- Hazardous waste will be source segregated. An area will be set aside, at maintenance depots, for hazardous waste storage which will include appropriate containers, for example WEEE cages; and
- Regular training will be provided, by SCO, for staff and/or sub-contractors. The training will focus on the practices necessary to minimise waste and to facilitate good practice whilst undertaking litter picking and planned/unplanned maintenance.

13.6.17 Activities in the operational phase will also fulfil requirements of the Network Rail document "Environment and Social Minimum Requirements for Projects – Design and Construction", referred to as NR/L2/ENV/015[9] (see Appendix 13.2).

[9] Network Rail, Environment and Social Minimum Requirements for Projects – Design and Construction. March 2019.

13.7 Residual effects

Construction

Materials

13.7.1 There will be a significant amount (231,492 tonnes) of site won material, from excavation and demolition, that will be reused on site, in accordance with the MMP (to be produced, see Section 13.6). This offsets the need to import material such as aggregate.

13.7.2 The material volumes to be used for the Scheme are shown in Table 13-12 and the assessment based on those volumes is shown in Table 13-13.

Table 13-12 Material volumes

Material	Tonnes	Cubic metres
Aggregates	212,826	
Concrete		21,877
Steel	6,534	

Table 13-13 Material assessment

Material	Material baseline (tonnes)	Estimated material use (tonnes)	Percentage impact	Sensitivity of receptor	Impact severity	Effect category
Aggregates	13,400,000	212,826	1.59	Low	Minor	Neutral or Slight
Concrete	1,200,000*	21,877*	1.82	Low	Minor	Neutral or Slight
Steel	10,900,000	6,534	0.06	Low	Minor	Neutral or Slight

* Cubic Metres

13.7.3 Using criteria in Table 13-1 and Table 13-2 the data in the table above shows that material use, will have a low impact on receptor sensitivity and a minor severity impact. Using criteria in Table 13-3 the significance of effects is shown to be Neutral or Slight Adverse effect.

13.7.4 This also considers that the Scheme will impact on MSAs.

Waste

13.7.5 As stated above there will be a significant amount of material (particularly soil) reused on site, as part of the MMP, that will no longer require disposal to landfill. Further to this is the 90% minimum recycling and recovery rate target, which applies to all wastes except soil. This is likely to still go to landfill but as a beneficial use such as daily cover.

13.7.6 The waste volumes to be generated by the Scheme (considering material reuse and the 90% recycling and recovery target) are shown in Table 13-14. The assessment based on those volumes is shown in Table 13-15.

Table 13-14 Waste volumes

Waste	Cubic metres
Aggregate	2,819
Asphalt	7
Blockwork	88
Concrete	297
Soil*	151,478

Waste	Cubic metres
Metal	276
Green waste	319
General waste	1,145
Total	156,429

* Excavated material will be soil and potentially brick, concrete and other inert wastes and underlying superficial geology and bedrock

Table 13-15 Waste assessment

Landfill capacity baseline (m^3)	Estimated waste (m^3)	Percentage impact	Sensitivity of receptor	Impact severity	Effect category
68,475,000	156,429	0.22	Low	Negligible	Neutral or Slight

13.7.7 Using criteria in Table 13-1 and Table 13-2, the data in the table above shows that waste generation will be a low impact on receptor sensitivity and a negligible severity impact. The significance of effects would be Neutral.

13.7.8 In summary, during construction, the amount of material resource use and waste generation is estimated to have a neutral effect regionally/nationally. These are not considered significant effects.

Table 13-16 Summary of residual effects

Receptor	Description of impact	Effect before mitigation	Residual effect
Materials market	Material use	Neutral	Neutral
Landfill void capacity	Waste generation	Neutral	Neutral

13.8 Cumulative effects

13.8.1 Cumulative effects can include intra-Scheme impacts and inter-Scheme impacts. Intra-Scheme impacts are where in-combination impacts arise from the Scheme. Inter-Scheme impacts occur due to impacts from more than one scheme.

13.8.2 The approach for the cumulative impact assessment is detailed in Chapter 22 (Cumulative effects) of this ES.

Intra-Scheme (synergistic) effects

13.8.3 Potential intra-Scheme effects may occur from interaction with other environmental topics.

13.8.4 Potential synergistic impacts have been identified that correspond to waste and materials contamination are geology, soils and land contamination.

13.8.5 The geology, soils and land contamination assessments have identified with mitigation, Neutral or Slight adverse effects are predicted during both the construction and operational phases. This chapter also identifies that Neutral residual effects are anticipated; it is therefore considered that no Intra-Scheme effects are likely to be generated.

Inter-Scheme effects

13.8.6 Inter-Scheme cumulative effects may occur from interaction with other proposed developments (Reasonably Foreseeable Future Projects (RFFPs) located near the Scheme. When combined with the works in the Scheme area these could cumulatively affect sensitive

receptors. Inclusion of RFFPs reflects their proximity to the Scheme, likely impacts and timing of construction and operation.

13.8.7 The RFFPs identified in relation to the Scheme are presented in Chapter 22 (Cumulative effects).

13.8.8 The following RFFP was considered to be the only one relevant to the assessment for waste:

- Kirklees Local Plan Allocation HS61 (Dewsbury Riverside) a housing allocation for 4000 units.

13.8.9 Due to its status as an allocated site, no details on likely waste generation is available. However, should this project come forward during the construction phase of the Scheme there is the potential that significant quantities of waste would be generated from the earthworks/site preparation phase. It is anticipated that similar to the Scheme assessed in this ES the Dewsbury Riverside Project would seek to reuse any site won material and therefore off-site disposal is likely to be limited and therefore no significant effects on local waste capacity is anticipated.

13.8.10 Based on professional judgement and considering the residual effect of this Scheme, it is unlikely there will be a significant cumulative effect, due to the availability of materials and landfill capacity in the region and given the mitigation measures that other developments can take to be efficient in material use and divert waste from landfill.