13. Material Assets and Waste

13.1. Introduction

13.1.1. This Chapter reports the outcome of the assessment of likely significant effects arising from the Proposed Scheme in consumption of material assets and in generating and disposing of waste.

13.1.2. It outlines the embedded and essential mitigation measures required to avoid, prevent, reduce or, if possible, offset any likely significant adverse effects on material assets and waste, and reports on the likely residual effects after these measures have been employed.

13.1.3. This Chapter (and its associated appendices) is intended to be read as part of the wider Environmental Impact Assessment (EIA) Report, with particular reference to the following chapters:

- Chapter 9: Landscape
- Chapter 12: Geology, Soils and Groundwater
- Chapter 14: Noise and Vibration
- Chapter 15: Population and Human Health and
- Chapter 16: Effects on Climate.

13.1.4. This chapter should be read in conjunction with the following Appendices:

- Volume 4, Appendix 13.1: Material Assets and Waste Legislation, Policy and Guidance
- Volume 4, Appendix 13.2: Material Assets and Waste Methodology and
- Volume 4, Appendix 13.3: Material Assets and Waste Baseline Data, Tables and Graphs.

13.2. Approach and Methods

13.2.1. The assessment has been carried out in accordance with the Design Manual for Roads and Bridges (DMRB) Standard LA 110 Material Assets and Waste (hereafter 'DMRB LA 110'). The approach and methods have been informed by legislation, policy and guidance and a full list of those that are relevant to the topic are contained in Volume 4, Appendix 13.1: Material Assets and Waste Legislation, Policy and Guidance.

Study Area

13.2.2. The study areas for Material Assets and Waste that are applicable to the Proposed Scheme (as defined in DMRB LA 110) are detailed in Volume 4, Appendix 13.2: Material Assets and Waste Methodology. The primary study area is defined by the extent of works within the Proposed Scheme boundary; the secondary study area comprises the extent to which infrastructure is suitable and available for the management of arisings and waste generated by the Proposed Scheme. In accordance with good practice, the secondary study area includes the availability of typical construction materials required for the Proposed Scheme.

Method of Baseline Collection

13.2.3. The baseline data collected and presented in this Chapter were obtained by desk study. For the purpose of this assessment, no site visit was required.

13.2.4. The materials baseline describes regional and national availability of key construction materials through stock, production and / or sales required for the Proposed Scheme; where data on critical raw materials are available, this has been included.

13.2.5. The waste baseline outlines the availability and capacity of regional landfill and material recovery / recycling facilities and incorporates an assessment of future trends in landfill capacity.

Consultation

13.2.6. No specific consultation relating to materials and waste has been undertaken to inform the DMRB Stage 3 Assessment.

13.2.7. Consultation was undertaken throughout the DMRB Stage 2 and DMRB Stage 3 process through the Environmental Steering Group (ESG) which comprised, in relation to materials and waste, of Argyll and Bute Council, the Loch Lomond and The Trossachs National Park Authority (LLTNPA) and the Scottish Environment Protection Agency (SEPA). The scoping consultation responses are detailed in Volume 4: Appendix 6.1 Summary of Scoping Consultation Responses.

13.2.8. Public consultation was undertaken between 26 May and 7 July 2023 which included four days of public exhibitions in Arrochar and Lochgilphead in June 2023 and a virtual exhibition online. Further public engagement was undertaken between 18 March and 10 May 2024 both online and at public exhibitions.

Assessment Methodology

13.2.9. The methodology and assessment criteria for Material Assets and Waste (as defined in DMRB LA 110) are detailed in Volume 4, Appendix 13.2: Material Assets and Waste Methodology. The scope of this chapter is also defined in paragraph 1.4 as '*The assessment of material assets and waste shall include:*

1) *the consumption of materials and products (from primary, recycled or secondary, and renewable sources, the use of materials offering sustainability benefits, and the use of excavated and other arisings that fall within the scope of waste exemption criteria; and*
2) *the production and disposal of waste'*.

13.2.10. An assessment of the effects of consuming materials required during the construction phase and first year of operation has been undertaken by considering the origins and sources of materials, including their general availability (production, stock, sales) and the proportion of recovered (reused or recycled) materials they contain (as well as other sustainability features).

13.2.11. The reuse of excavated and other arisings (that meet waste exemption and other recognised reuse criteria) has been evaluated as part of the assessment of materials, to determine whether the adverse impacts associated with the consumption of primary resources can be reduced, alongside reducing waste generated by the Proposed Scheme.

13.2.12. Data relating to the quantities of materials, their source and recycled content; quantities of waste and their disposal method, have been obtained from design estimates and information provided by the design team.

13.2.13. As noted in paragraph 13.3.9, the temporal scope of the assessment comprises the construction phase including the first year of operation (2026-2031); the operational phase has been scoped out, as agreed with the A83 ESG during consultation through the EIA Scoping process.

Limitations of the Assessment

13.2.14. Baseline data and information for the assessment has used the most recent available published data, which is typically up to and including 2022 (unless stated otherwise).

Material assets

13.2.15. The assessment of materials is based on the validity of the collated information, regarding the resources that are expected to be consumed during the construction phase of the Proposed Scheme.

13.2.16. Data on materials has been provided by the design team as based on the DMRB Stage 3 design of the Proposed Scheme. Conversion factors have been used where data were not provided in tonnes; this is based on the Bath Inventory Material Density conversion factors as set out in Transport Scotland Carbon Calculation Tool (version 1.4).

Waste

13.2.17. The assessment of impacts on landfill void capacity is based upon the validity of the collated information regarding waste generated and disposed of by the Proposed Scheme during 'in scope' phases of the development.

13.2.18. UK landfill operators can claim commercial confidentiality for data at time of submission; data for sites with a commercial confidentiality agreement in place are therefore unavailable for the analyses presented in this Chapter. It is not anticipated that any lack of data in this context has substantially affected the results of the assessment.

13.2.19. Waste data has been provided by the design team based on the current design stage of the Proposed Scheme. At this time, it is a working design assumption that the earthworks that cannot be recovered for on-site use, would be sent to landfill.

13.2.20. Where waste data was provided in cubic metres, these have been converted to tonnes for the purposes of the assessment using density conversion factors for waste. These were developed by the Environment Agency and are used by all the Agencies across the UK, including SEPA.

13.3. Baseline Conditions

Material Assets

13.3.1. The availability of the main construction materials in Scotland and the UK, as required to deliver typical road schemes is detailed in Volume 4, Appendix 13.3: Material Assets and Waste Baseline Data, Tables and Graphs. Available data indicates that stocks, production and sales remain buoyant for construction materials typically required for construction of road schemes in Scotland and across the UK.

Waste

13.3.2. The availability of waste management facilities and landfill capacity within Argyll and Bute and the immediate surrounding local authorities comprising The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling, and West Dunbartonshire is detailed in Volume 4, Appendix 13.3: Material Assets and Waste Baseline Data, Tables and Graphs.

13.3.3. Within Scotland, the recovery rate for non-hazardous construction and demolition wastes have remained above 80% since 2011; the most recent publicly available data published by SEPA is for 2022. Furthermore, there are a total of 125 operational waste recovery management sites within the region.

13.3.4. Argyll and Bute's Waste Strategy states a commitment to convert some landfill sites into facilities that can recover materials and hence divert a greater proportion of waste from landfill.

13.3.5. At the end of 2022, there were 14 landfill sites in Argyll and Bute, and the immediate surrounding local authorities comprising The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling, and West Dunbartonshire were recorded as having 7.7Mt of remaining capacity. However, there is no hazardous waste landfill capacity. Falkirk is the only local authority in Scotland reported to have remaining hazardous waste landfill capacity, with 17,225 tonnes of remaining capacity at the end of 2022. There is also hazardous waste landfill capacity in England.

Future Baseline

Material assets

13.3.6. In the future baseline it is anticipated that there will be no change to the scale and nature of materials resource consumption within the primary study area in comparison to the current baseline scenario for the Proposed Scheme. The consumption of materials in the future baseline is expected to remain minimal and is likely to be required for ongoing routine maintenance of the existing road.

13.3.7. In terms of future materials availability within the secondary study area, it is considered that the availability of natural resources required for construction is likely to become an increasingly sensitive receptor in the future.

Waste: generation and disposal

13.3.8. In the future baseline, it is anticipated that there will be no change to the scale and nature of the waste generation and disposal within the primary study area in comparison to the current baseline scenario for the Proposed Scheme. In the future baseline, the quantity of waste generated is expected to remain minimal in the context of available regional capacity. Waste is likely to be generated from ongoing routine maintenance, removal of land slipped debris, vegetation, and litter.

13.3.9. Both within and outside of the secondary study area, baseline data indicates that landfill capacity (for all waste types) is likely to become an increasingly sensitive receptor in the future.

Sub-Topics Scoped Out of the Assessment

Sterilisation of mineral safeguarding sites and peat resources

13.3.10. There are no mineral safeguarding sites or peat resources intersecting with, or with the potential to be sterilised by (e.g. through adjacency), the Proposed Scheme. Localised pockets of peat / peaty soils are present; however, these are not classified as a peat resource. Further details on the classifications are described in Volume 2, Chapter 12: Geology, Soils and Groundwater.

Operation phase

13.3.11. An assessment of impacts following the first year of operation (the first year is considered as part of the construction phase as described in DMRB LA 110) has been scoped out. The consumption of materials and generation of waste during the operation and maintenance phase of the Proposed Scheme is considered negligible i.e. likely to be the result of ongoing minor and routine maintenance, removal of vegetation, litter and occasional removal of land slipped debris.

13.4. Embedded Mitigation

13.4.1. The following embedded mitigation measure MW-Embed1 (as detailed in Chapter 4: The Proposed Scheme) is committed to in the design and is outlined below.

13.4.2. The cut and fill balance has been estimated as a cut of 350,176m^3 and a fill requirement of 26,926m^3. This equates to a surplus of approximately 323,250m^3. Therefore, earthworks is forecast to comprise the largest proportion of waste generated by the Proposed Scheme. Although ground investigations are yet to be completed, it is expected a proportion of earthworks will be diverted from inert and / or non-hazardous waste landfill. The suitability of fill / site-won materials intended for reuse will be checked prior to use through sampling and chemical analysis.

13.5. Potential Impacts

13.5.1. During the construction phase, the Proposed Scheme would consume material resources (including those recovered from site arisings) and produce and dispose of waste. Whilst the impacts of materials consumption and waste disposal from the Proposed Scheme are considered to be adverse, permanent and direct, the reuse and recycling of arisings, as well as the use of resources with sustainability credentials, does have the potential to reduce the adverse impact of waste to landfill.

13.5.2. The direct impacts associated with material consumption, and waste generation and disposal are as follows:

- Materials: consumption of natural and non-renewable resources, and
- Waste: generation and disposal of waste and reduction of landfill capacity.

13.5.3. The indirect impacts associated with material consumption and waste generation have been assessed in the following chapters Chapter 10 (Visual Impact); Chapter 11 (Biodiversity); Chapter 12 (Geology and Soils); Chapter 14 (Noise and Vibration); Chapter 15 (Population and Health); Chapter 16 (Effects on Climate) and Chapter 19 (Road Drainage and the Water Environment) and include:

- Release of greenhouse gas emissions (through transportation)
- Water consumption
- Visual impacts, noise vibration and other nuisance issues
- Ecological impacts, and
- Human health

Construction Impacts

Material assets

13.5.4. The data in Table 13.1 describes the type and quantities of materials required to construct the Proposed Scheme. Where available, information on the materials recycled content and sustainability credentials has been provided. It is noted that these data are the most up-to-date and complete at the time of publication. Where quantities exceed 100 tonnes, these have been rounded to the nearest 10 tonnes.

Table 13.1 - Material types and quantities

Material Type	Quantity (tonnes)	Description of material type and use
Earthworks	54,070	Imported acceptable material (Class 1) used as structural fill, to supplement a proportion of excavated earthworks retained for reuse on site.
Concrete	158,820	This includes reinforced concrete for below ground structures, foundations and piling and pre-cast concrete for above-ground structures, drainage, vehicle restraint systems, and kerbing.
Steel	17,130	Used in piling / reinforcing bars for concrete, Vehicle Restraint Systems (VRS) and steel posts for road traffic signs.
Asphalt	24,250	Bituminous materials to construct the new pavement element – for road base and surface course.
Aggregate	67,190	Used to construct road sub-base and for drainage.
Plastics (excluding packaging)	22	UPVC - used for drainage pipework.
Aluminium	1	Road traffic signs
Masonry	33	Bridge B (Old Military Road (OMR) Improvements)

13.5.5. In order to determine the significance of effect for materials, DMRB LA 110 requires an assessment of overall material recovery / recycling (by weight) of non-hazardous Construction and Demolition Waste (CDW) to substitute use of primary materials. This is determined in paragraphs 13.5.13 and 13.5.14.

13.5.6. Whilst it is anticipated that all efforts will be made to maximise the specification and use of materials with known sustainability credentials, impacts from consuming primary resources would still arise.

13.5.7. Based on the information available at the time of publication, an estimate of the percentage of reused, recycled and secondary materials cannot currently be calculated.

Waste

13.5.8. The data in Table 13.2 describes the types and quantities of waste and arisings which would be diverted from landfill from the construction of the Proposed Scheme. Volumes are estimated on a worst-case scenario using the current design information and are likely to change during development of the detailed design.

Table 13.2 - Waste and arisings types and quantities to be diverted from landfill

Arising Type	Quantity (m^3)	Quantity (tonnes)	Comments
Earthworks - Rock	190,965	202,423	Acceptable material for use off-site.
Earthworks	4,398	4,662	Acceptable material for use on site.

13.5.9. Site preparation and remediation, incorporating ground works, excavation and site clearance, will generate site arisings (road planings and earthworks).

13.5.10. The current working assumption at this stage of the design is that earthworks arisings that are classified as unacceptable for reuse cannot be used off-site on other schemes and will therefore be sent to landfill. The suitability of these arisings for other purposes has not yet been determined, although they are likely to be suitable for recovery and treatment at material recovery facilities. The exact proportion of site arisings that can be recovered would be determined during later design stages.

13.5.11. Any wastes which cannot be diverted from landfill are likely to have an adverse impact on the regional landfill capacity. Embedded mitigation measures to reduce impacts on the Proposed Scheme include reuse of material resources from excavation in the construction.

13.5.12. A total cut of 371,187 tonnes of site arisings would be generated during construction, of which 4,662 tonnes would be reused on the Proposed Scheme. An additional 202,423 tonnes would be recovered and taken off site for reuse, potentially on other schemes. This achieves 56% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute the use of primary materials.

13.5.13. Therefore, the Proposed Scheme achieves less than 70% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute the use of primary materials. This results in a moderate adverse significant effect.

13.5.14. In addition, the percentage of reused/recycled content of aggregates to be imported for the Proposed Scheme is unknown at this stage and is therefore considered to achieve a reused/recycled content below the relevant regional percentage target (25%). This results in a moderate adverse significant effect.

13.5.15. A summary of the type of waste anticipated to be disposed of to landfill generated during the construction phase of the Proposed Scheme is provided in Table 13.3.

Table 13.3 - Forecast waste types to be sent to landfill

Waste Type	Quantity (m^3)	Quantity (tonnes)	Comments
Earthworks – Soil (surplus arisings)	140,213	148,626	Unacceptable material, to be sent for disposal to landfill (unsuitable for geotechnical purposes).
Asphalt (bound material)	5,500	4,950	Unacceptable material, to be sent for disposal to hazardous waste landfill (potentially contaminated – coal tar).
Sub-base / capping	9,100	8,190	Unacceptable material, to be sent for disposal to hazardous waste landfill (potentially contaminated – coal tar).

13.5.16. At this stage of the design, it is estimated that a total of 154,813m^3 (161,766 tonnes) would be sent to landfill for disposal. Of this, 14,600m^3 (13,140 tonnes) would be potentially hazardous and disposed to hazardous waste landfill.

13.5.17. Therefore, a quantity of 140,213m^3 (148,626 tonnes) would require disposal to inert and non-hazardous landfill. Based on the most recently available data on current total (inert and non-hazardous) landfill capacity in the region, and in the absence of future provision, this would reduce available capacity by 1.9%.

13.5.18. Therefore, anticipated volumes for waste disposal are expected to be significant in the context of 2022 landfill capacity. Waste to be disposed of is anticipated to result in more than 1% reduction in remaining regional landfill capacity (as of 2022). This would result in a moderate adverse significant effect.

13.5.19. Hazardous waste will require disposal outside of the region as there is no available hazardous landfill capacity in the region. Typically, this is sent to other regions of the Scotland and / or the UK. However, the quantity of hazardous waste expected to require disposal outside the region comprises 8% of the total project waste, exceeding the threshold criteria of 1% disposal of project waste outside the region, resulting in a moderate significant adverse effect.

13.6. Mitigation

13.6.1. The following design and mitigation measures set out in Table 13.4 for material assets and waste are to be applied to the Proposed Scheme.

Table 13.4 - Mitigation measures

Mitigation Reference	Mitigation Measures
MW1	Where aggregates for earthworks, drainage and pavement need to be imported, the current commitment is to procure these from sources local to the Proposed Scheme, such as authorised quarries.
MW2	The Proposed Scheme will aim to achieve the regional aggregate recycled content target of 25% as a minimum, in line with the DMRB LA 110, Appendix E/1. For example, this can be achieved through considering the use of recycled aggregate supplied from local quarries, where feasible.
MW3	The Appointed Contractor will consider how 100% reuse, recovery or recycling could be achieved and provide justification where this is not considered viable in terms of cost, safety and / or material quality or performance and must achieve not less than 70% inert and non-hazardous material recovery, in accordance with paragraph 3.17 of DMRB LA 110. The recovery of any construction and demolition waste which is geotechnically or chemically unsuitable for reuse within the Proposed Scheme will require disposal or treatment prior to any reuse off-site, in accordance with the current waste regulatory framework. This will be managed in accordance with the CEMP, as part of an MMP.
MW4	Arisings would be suitably stockpiled to maximise reuse by minimising quality degradation, damage and other loss. Providing a management framework for this approach, the CEMP would be developed by the Appointed Contractor with commitments to, and information on, stockpile location, underlying soil type and condition, methods for prevention of erosion and leachate generation and use of appropriate signage. It is anticipated that the finalised CEMP would be submitted for approval by the relevant Planning Authority prior to the commencement of the Proposed Scheme.
MW5	The Appointed Contractors' Site Waste Manager will also document within a Site Waste Management Plan (SWMP) any opportunities implemented to reduce waste, and update this throughout the construction phase of the Proposed Scheme, using actual waste data including quantities, types and the chosen waste management option.

Mitigation Reference	Mitigation Measures
MW6	In order to maximise resource efficiency and minimise waste on the Proposed Scheme, good practice principles must be considered as early as possible by the Appointed Contractor in development of their detailed design. In delivering the Proposed Scheme, the Appointed Contractor will identify opportunities and define objectives for maximising resource efficiency and designing out waste, e.g. by conducting Resource Efficiency Workshops. As part of this process, the following opportunities will be reviewed and refined during design, and their feasibility established. Wherever a measure cannot practicably be adopted, justification will be agreed with Transport Scotland in respect to: • Specifying the need for the value chain to remove or take back packaging. • Implementation of Lean construction methods – improving efficiency and effectiveness by avoiding unnecessary costs and eliminating waste. For example, given the drainage design generally incorporates the use of plastic pipes, consider the use of recycled plastics for drainage pipes. In addition, offcuts from these products can be returned to the suppliers, to be reincorporated in the manufacturing process or duly recycled. • Specification of reused, recycled and recyclable materials. For example, consider the use of secondary materials such as Pulverised Fuel Ash (PFA) and Ground Granulated Blast-furnace Slag (GGBS) in concrete mix designs to maximise their use and benefits in the permanent works design, for both in-situ and pre-cast concrete elements (subject to strength and stiffness requirements). • Specification of responsibly sourced materials e.g. in accordance with the BRE Environmental & Sustainability Standard: Framework Standard for Responsible Sourcing BES6001. • Specification of alternative construction methods – off site fabrication / modularisation. For example, consider the use of warm-mix asphalt for road surfacing requirements and procuring steel elements required for structural reinforcement from suppliers who re-fabricate or manufacture these products from recovered ferrous scrap, where feasible. • Alignment or compliance with BREEAM Infrastructure (Building Research Establishment Environmental Assessment Method), formerly Civil Engineering Environmental Quality Assessment and Award Scheme (CEEQUAL)), to assess scheme performance in accordance with a recognised industry standard. • Assessment of end-of-life options for materials and assets, to minimise disposal. • Assessing the opportunity to use mechanisms such as, but not limited to: ○ Regulatory guidance produced by SEPA with the Civil Engineering Contractors Association (Scotland) (CECA) and the Environment Industries Commission (EIC) on Promoting the sustainable reuse of greenfield soils in construction; ○ International soil reuse guidelines i.e. those similar to CL:AIRE ‘Definition of Waste: Development Industry’ Code of Practice for excavated materials (which are only applicable in England and Wales); ○ SEPA waste exemptions; and ○ BRE SMART Waste.

13.7. Residual Effects

Residual Effects – Construction

13.7.1. This section provides an assessment of the likely significant effects during construction using the criteria set out within Volume 4, Appendix 13.2: Material Assets and Waste Methodology and the embedded and essential mitigation measures in Sections 13.4 and 13.6 respectively. The assessment uses available material and waste data provided by the design team as based on the current design and the significance threshold assigned following mitigation.

13.7.2. The following assessment findings and conclusions are provided based on the information and data reviewed in this chapter.

Material assets

13.7.3. The Proposed Scheme will achieve more than 70% overall material recovery / recycling (by weight) of non-hazardous CDW to substitute the use of primary materials. This results in a slight adverse effect, which is considered not significant.

13.7.4. The use of aggregates required to be imported for the Proposed Scheme will comprise reused/recycled content in line with the relevant regional percentage target of 25%. This results in a slight adverse effect, which is considered not significant.

Waste

13.7.5. For waste diverted from landfill, the baseline information suggests that there is sufficient recovery capacity within the region to accommodate surplus arisings from the Proposed Scheme (use of specific facilities will be determined by the Appointed Contractor during the construction phase).

13.7.6. Anticipated volumes for waste disposal, subject to the mitigation measures being adopted, are expected to be minimal in the context of 2022 landfill capacity, by diverting inert and non-hazardous waste disposal from landfill. Waste to be disposed of is anticipated to result in less than 1% reduction in remaining regional landfill capacity (as of 2022). This would result in a slight adverse effect, which is considered not significant.

13.7.7. The treatment and recovery of hazardous wastes will effectively reduce the quantity of project waste requiring disposal outside the region to below 1% of the total project waste. This would result in a slight adverse effect, which is considered not significant.

Opportunities for environmental enhancement

13.7.8. Further to the mitigation measures outlined in Table 13.4, the following opportunities for enhancement should be considered as the design and project progresses:

- Explore options for reuse of excavated rock and surplus arisings (unsuitable for geotechnical purposes) on future consented developments within the region. This would reduce the requirement for new or expanded borrow pits and excavation of raw materials within the area, particularly the National Park, which would reduce impacts on the landscape and biodiversity.
- Investigate methods of obtaining recycled aggregate from surplus site arisings (in particular, excavated rock) and liaising with the local quarry to exchange materials to improve circularity. In addition, this would align with the Proximity Principle, thereby reducing transport costs and greenhouse gas emissions.

Overall effects and significance

13.7.9. The assessments therefore consider the situation where the Appointed Contractor should consider how 100% reuse, recovery or recycling could be achieved and provide justification where this is not considered viable in terms of cost, safety and/or material quality or performance and must achieve not less than 70% inert and non-hazardous material recovery. In addition, the Appointed contractor should ensure that no more than 1% of project waste should be disposed of outside Scotland. The Appointed Contractor will be required to ensure that their design and construction of the works will not give rise to any materially new or worse adverse environmental effects in comparison with those reported in this EIA.

13.7.10. Taking into account the evidence presented in this chapter (including commitments to mitigation measures), the overall significance of effect for material assets, and for waste, is considered to be slight adverse in both cases. In accordance with the criteria and thresholds set out in DMRB LA110, the effects for both material assets, and waste, are therefore assessed to be not significant.

Table 13.5 - Likely significance of effects

Reference	Pre-Mitigation Effect - Magnitude	Pre-Mitigation Effect - Significance	Mitigation Measures	Post-Mitigation Effect - Magnitude	Post-Mitigation Effect - Significance
Material assets – overall material recovery to substitute use of primary materials	Moderate adverse	Significant	MW3, MW4, MW5, MW6 These mitigation measures will promote the reuse of excavated arisings both on – and off-site to substitute the requirement for primary materials on the Proposed Scheme.	Slight adverse	Not significant

Reference	Pre-Mitigation Effect - Magnitude	Pre-Mitigation Effect - Significance	Mitigation Measures	Post-Mitigation Effect - Magnitude	Post-Mitigation Effect - Significance
Material assets – aggregates comprising reused/recycled content	Moderate adverse	Significant	MW1, MW2, MW3, MW6 Additional mitigation measures incorporating the use of locally sourced primary and secondary aggregates, and the reuse of site-won material assets will ensure the regional aggregate recycled content target of 25 % is achieved, as a minimum.	Slight adverse	Not significant

Reference	Pre-Mitigation Effect - Magnitude	Pre-Mitigation Effect - Significance	Mitigation Measures	Post-Mitigation Effect - Magnitude	Post-Mitigation Effect - Significance
Waste – landfill void capacity within the region (secondary study area)	Moderate adverse	Significant	MW3, MW4, MW5, MW6 These mitigation measures will promote the reuse of excavated arisings both on- and off-site to reduce the quantity of surplus excavated arisings and construction materials for disposal to landfill.	Slight adverse	Not significant

Reference	Pre-Mitigation Effect - Magnitude	Pre-Mitigation Effect - Significance	Mitigation Measures	Post-Mitigation Effect - Magnitude	Post-Mitigation Effect - Significance
Waste – landfill void capacity outside of the region (secondary study area)	Moderate adverse	Significant	MW3, MW4, MW5, MW6 These mitigation measures will promote the reuse of excavated arisings either on- or off-site to reduce the quantity of hazardous and contaminated arisings for disposal to hazardous landfill.	Slight adverse	Not significant

Compliance with Planning Policy

13.7.11. The mitigation measures on the potential impacts outlined above will ensure that the residual effects of the Proposed Scheme will be compliant with national and regional policies, as outlined in Volume 4, Appendix 13.1 Material Assets and Waste Legislation, Policy and Guidance.