A83 Rest and Be Thankful

LTS EIAR VOLUME 4, APPENDIX 13.3 - MATERIAL ASSETS AND WASTE BASELINE DATA TABLES AND GRAPHS

Transport Scotland

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A13-3. Materials Assets and Waste Baseline Data

A13-3.1. Data Sources

A13-3.1.1. The Materials and Waste baseline data collected and presented in this Appendix was obtained through desk study. The baseline data describes the regional and national availability of materials that would typically be required for the Proposed Scheme, and the capacity of regional facilities to recover and dispose of waste generated.

A13-3.1.2. Data relating to the volumes of materials, their source and recycled content, as well as volumes of waste and their disposal method have been obtained from design estimates.

A13-3.1.3. Baseline data has been sourced from publicly available data sources comprising:

- Department for Business, Energy & Industrial Strategy (2024) Monthly Bulletin of Building Materials and Components
- Mineral Products Association, Profile of the UK Mineral Products Industry, 2023 Edition
- UK Steel (2024) UK Steel Key Statistics Guide May 2024
- Argyll and Bute Council (2018) Draft Waste Strategy
- Scottish Environment Protection Agency (SEPA) (2024) Waste Data for Scotland, Waste from all sources – Summary data
- SEPA (2024) Data analysis - Landfill site and capacity summary
- Environment Agency (2024) Remaining landfill capacity by site in England 2023

Limitations

A13-3.1.4. Baseline data and information for the assessment of material assets uses the most recent available published data; typically, this varies between 2017 and 2023. An indication of the most recent year from which data has been acquired, has been provided throughout.

A13-3.1.5. Published data in relation to transfer, recovery and recycling infrastructure in Scotland is limited and generally only available until 2022, as published by SEPA.

A13-3.1.6. At the time of writing, data for Scotland regarding materials typically required for road construction is incomplete. Accordingly, a full picture of resource availability in the secondary study area cannot be obtained. For example, information on recycled and secondary aggregate sales and steel production are not currently available for the region (Table A13.3-1).

A13-3.2. Baseline Conditions

A13-3.2.1. The materials baseline has considered 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.

A13-3.2.2. The waste baseline has assessed the availability and capacity of regional landfill and material recovery/recycling facilities and incorporates an assessment of future trends in landfill capacity. Where available, the current material consumption and waste generated by the existing site has been be incorporated to inform the baseline.

Study Area Context

A13-3.2.3. This section provides an overview of the baseline material consumption and waste disposal for the current land use within which the Proposed Scheme is located and provides regional information and data in the context of which the assessment has been undertaken.

A13-3.2.4. The current land uses relating to the Proposed Scheme consist of the existing single-carriageway A83 and the Old Military Road (OMR), which sit within a glen of rural, mountainous terrain mainly used for agricultural purposes, with many watercourses and areas of woodland, some of which is managed by Forestry and Land Scotland.

Material Resources

Materials currently required

A13-3.2.5. The operation and maintenance of assets (including the existing A83 and OMR) within the boundary encompassing the Proposed Scheme requires a small number of specialist components (for example, signage, reflective road studs and wire fencing) as well as some bulk products (for example, asphalt for minor re-surfacing, steel for repairs to barriers and rock-fall fencing) for routine maintenance of the existing road infrastructure.

UK and regional perspective: Availability of construction materials

A13-3.2.6. Table A13.3-1 provides a summary of the availability of the main construction materials in Scotland and the UK, as required to deliver typical road schemes. The overview provides a context in which the assessment of impacts and significant effects from material consumption from the Proposed Scheme has been undertaken.

Table A13.3-1 Construction Materials Availability in Scotland and UK

Material Type	Scotland	UK
Sand and gravel [3]	4.5 million tonnes (Mt)	52.1 Mt (GB)
Permitted crushed rock [3]	21.3 Mt (2023)	116.1 Mt (GB)
Concrete blocks [1]	1.2 million square meters (Mm^2) (Scotland and Wales) (2023)	10.0 Mm^2 (2023)

Material Type	Scotland	UK
Primary aggregate [3]	25.8 Mt	191.1 Mt
Recycled and secondary aggregate [3]	(no data)	74.0 Mt (GB)
Ready-mix concrete [3]	1.2 Mm^3	21.0 Mm^3
Steel [2]	(no data)	5.8 Mt (2023)
Asphalt [3]	2.5 Mt	26.8 Mt

[1] stocks [2] production [3] sales

Data availability: 2022 unless otherwise stated

GB: Great Britain (England, Wales and Scotland) figures used where UK figures (including Northern Ireland) are unavailable

A13-3.2.7. Where data are available, the availability of construction materials typically required for construction of road schemes in Scotland and across the UK, indicates that stocks, production and sales remain buoyant.

Regional perspective: Transfer, Recovery and Recycling

A13-3.2.8. The latest publicly available waste data for Scotland published by SEPA (2024) (Table A13.3-2) shows that within Scotland, the recovery rate for non-hazardous construction and demolition wastes have remained above 80% since 2011. In addition, Table A13.3-3 presents data on operational waste facilities within the region.

Table A13.3-2 Non-hazardous construction and demolition waste recovery in Scotland

Year	Generation (Mt)	Recycling rate (%)
2011	5.0	92.1
2012	3.7	92.2
2013	4.7	94.1
2014	4.1	82.4
2015	5.0	87.9
2016	5.0	85.0
2017	5.5	83.9
2018	5.8	90.0
2019[4]	(no data)	(no data)
2020[4]	(no data)	(no data)
2021	3.9	89.7
2022	4.6	90.4

[4]In December 2020 SEPA suffered a cyber-attack, which caused a data gap for 2019 and 2020

Table A13.3-3 Permitted operational waste recovery management sites in Argyll and Bute, Highland, Inverclyde, North Ayrshire, Perth and Kinross, Stirling, and West Dunbartonshire (2022)

Local Authority	Waste recovery facility type(s)	Total number of operational sites
Argyll and Bute	Transfer station, composting, metal recycling and other treatment	18
Highland	Transfer station, composting, metal recycling and other treatment	46
Inverclyde	Metal recycling and transfer station	6
North Ayrshire	Transfer station, composting, metal recycling, and other treatment	20
Perth and Kinross	Transfer station, composting, metal recycling and other treatment	24
Stirling	Transfer station, composting, metal recycling and other treatment	7
West Dunbartonshire	Transfer station, composting, metal recycling and other treatment	8
	Total	129

A13-3.2.9. Data indicates that there is likely to be regional infrastructure and capacity for the transfer and recovery for Construction, Demolition and Excavation (CDE) wastes from the Proposed Scheme to facilitate diversion of waste from landfill. Construction and demolition recovery trends across Scotland (Table A13.3-2) and data in Table A13.3-3 confirm this assertion. This is further supported by Argyll and Bute's Waste Strategy (2018) which states a commitment to convert some landfill sites into facilities that can recover materials and hence divert a greater proportion of waste from landfill.

A13-3.2.10. The availability of material recovery infrastructure in the locality of the Proposed Scheme suggests that there is strong potential to divert from landfill site arisings generated by the Proposed Scheme. The importance (positive value) of this infrastructure indicates there is potential to maximise the re-use / recycling value of site arisings. This has the potential to materially influence the assessment of materials and waste.

Waste Generation and Disposal

Waste currently generated and disposed of

A13-3.2.11. The operation and maintenance of assets (the existing A83 and OMR) within the boundary of the Proposed Scheme generates small volumes of waste from routine maintenance of the existing road infrastructure, such as replacement of signage and reflective road studs (cats' eyes), some of which is anticipated to be sent to landfill. In addition, there are ongoing works for removal of debris due to rock falls from the catch-pits and the road network; the ultimate management and destination of the debris is known and managed by BEAR Scotland on behalf of Transport Scotland.

Regional perspective: Remaining Landfill capacity

A13-3.2.12. At the end of 2022, the 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 remaining capacity, as presented in Table A13.3-4.

Table A13.3-4 Remaining landfill capacity in Argyll and Bute, The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling and West Dunbartonshire

Local Authority	Landfill Site Type	Remaining Capacity 2022 (tonnes)
Argyll and Bute	Inert	0
Argyll and Bute	Non Hazardous	229,910
Highland	Inert	43,997

Local Authority	Landfill Site Type	Remaining Capacity 2022 (tonnes)
Highland	Non Hazardous	70,700
Inverclyde	Inert	0
North Ayrshire	Inert	5,380,500
North Ayrshire	Non Hazardous	98,445
North Ayrshire	Hazardous	0
Perth and Kinross	Inert	0
Perth and Kinross	Non Hazardous	0
Stirling	Inert	0
Stirling	Non Hazardous	0
West Dunbartonshire	Inert	0
West Dunbartonshire	Non Hazardous	1,942,786
Total	Inert Capacity	5,424,497
Total	Non Hazardous Capacity	2,341,841
Total	Hazardous Capacity	0
Total	Total Capacity	7,766,338

A13-3.2.13. SEPA data confirms that at the end of 2022, 14 landfill sites classified by SEPA as ‘operational’ in the local authorities listed in Table A13.3-4 were recorded as having 7.7 Mt of remaining capacity. This is split into capacities by waste type which confirms that there is no hazardous waste landfill capacity in the region (Table A13.3-4). The change in capacity from 2021 to 2022 is also shown in Table A13.3-5.

Table A13.3-5 Remaining landfill capacity in Argyll and Bute, The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling and West Dunbartonshire

Landfill type	Capacity in 2021 (tonnes)	Remaining capacity in 2022 (tonnes)	2021 to 2022 capacity comparison (tonnes)
Hazardous (merchant and restricted)	0	0	No change
Inert	5,796,433	5,424,497	371,936 decrease
Non-hazardous	2,943,362	2,341,841	601,521 decrease
Total	8,739,795	7,766,338	973,457 decrease

A13-3.2.14. Despite no available hazardous landfill capacity in the secondary study area as shown in Table A13.3-4, latest available SEPA and Environment Agency data report hazardous landfill capacity in Falkirk, Scotland as well as England. These areas and their remaining operational hazardous (merchant) landfill capacity are outlined in Table A13.3-6.

A13-3.2.15. The Avondale Landfill site in Falkirk, Scotland was reported by SEPA to have 19,139 m^3 (17,225 tonnes) of remaining hazardous landfill capacity at the end of 2022. As this capacity is very limited and the SEPA data is approaching two years old, this capacity may no longer exist. A permit application for additional hazardous landfill capacity at this existing site was submitted to SEPA but withdrawn in August 2024.

A13-3.2.16. Given the data limitations and uncertainty around future provision of hazardous landfill in Falkirk, the nearest available hazardous landfill capacity is in England. As shown in Table A13.3-6, England was recorded as having 9,753,037 m^3 of remaining capacity at the end of 2023. 63% of this capacity is located in the North East and North West regions of England.

Table A13.3-6 Remaining hazardous (merchant) landfill capacity in Falkirk, Scotland and England

Area	Remaining Capacity (m^3)
Falkirk, Scotland (2022)	19,139
North East England	3,791,662
North West England	3,009,862
East Midlands, England	2,000,000
West Midlands, England	0
East of England	0
Yorkshire and Humber, England	466,320
South West, England	339,125
South East England (excluding London which has no capacity)	73,034
Total	9,680,003
Total (Scotland only)	19,139 (2022)
Total (North East and North West England only)	6,801,524

Data availability: 2023 unless otherwise stated

A13-3.2.17. Argyll and Bute Council's Waste Strategy (2018) does not specify any proposal for the development of additional landfill sites; instead, it states a commitment to convert some landfill sites to other waste management facilities that will help facilitate a greater diversion of resources from landfill. The Strategy sets out how it aims to meet the impending Scottish Government ban on biodegradable municipal waste to landfill, but it does not include a ban or target on CDE waste to landfill.

A13-3.3. Future Baseline

Material resources

A13-3.3.1. In the future baseline it is anticipated that there would 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.

A13-3.3.2. 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

A13-3.3.3. 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 volume 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.

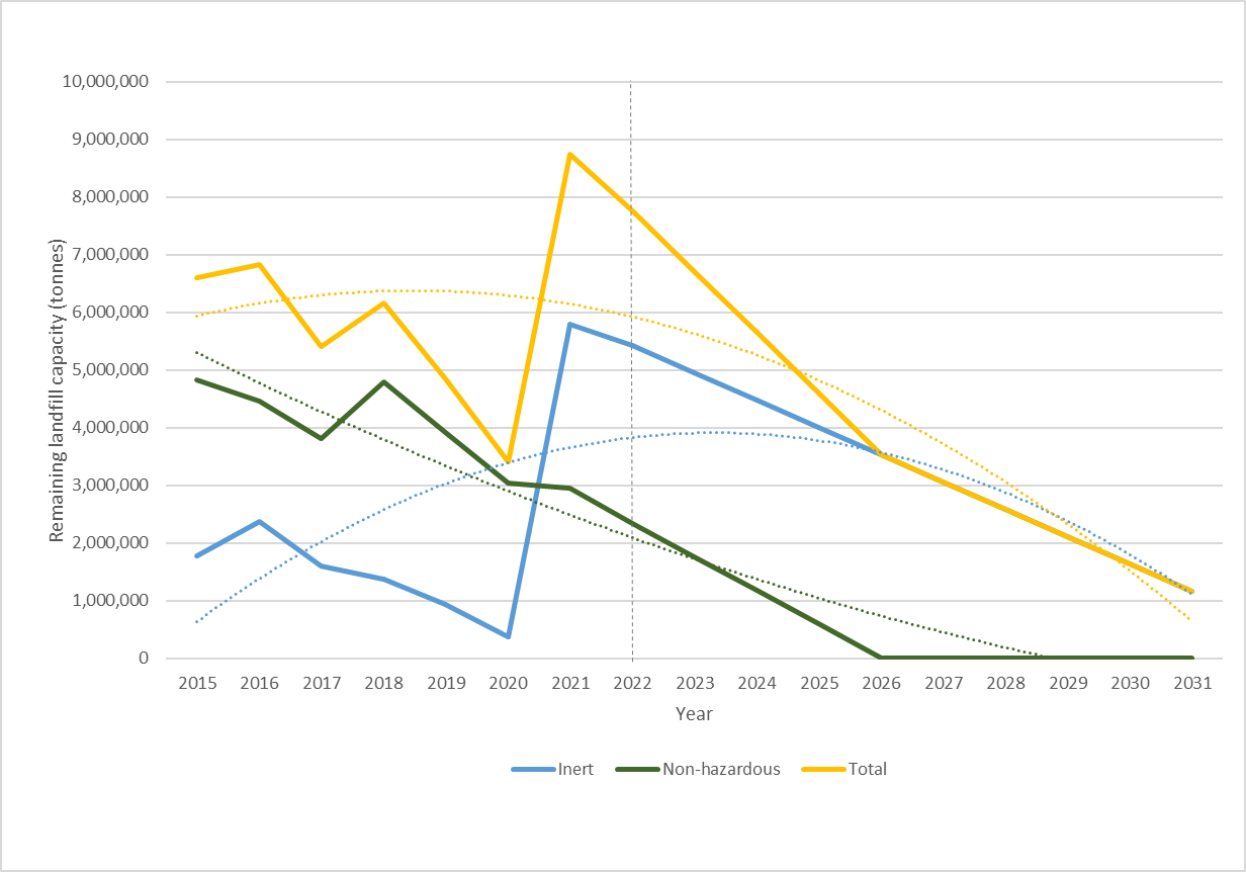
A13-3.3.4. Baseline remaining landfill capacity is detailed in Plate 13.3-1 for Argyll and Bute, The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling and West Dunbartonshire. Simple statistical forecasting has been used to demonstrate long term void capacity to the year of planned Proposed Scheme completion (2031) in the absence of future provision for landfill capacity.

A13-3.3.5. The forecast capacity beyond 2022 excludes the increase in inert capacity between 2015 to 2016 and 2020 to 2021, and the increase in non-hazardous capacity between 2017 to 2018, because additional landfill capacity was engineered during those periods. The additional capacity has therefore been

excluded to prevent disproportionately skewing trendlines, based on the assumption that no new landfill capacity will be created post-2022.

A13-3.3.6. Plate 13.3-1 shows that non-hazardous waste landfill capacity is forecast to run out by 2026 in the secondary study area.

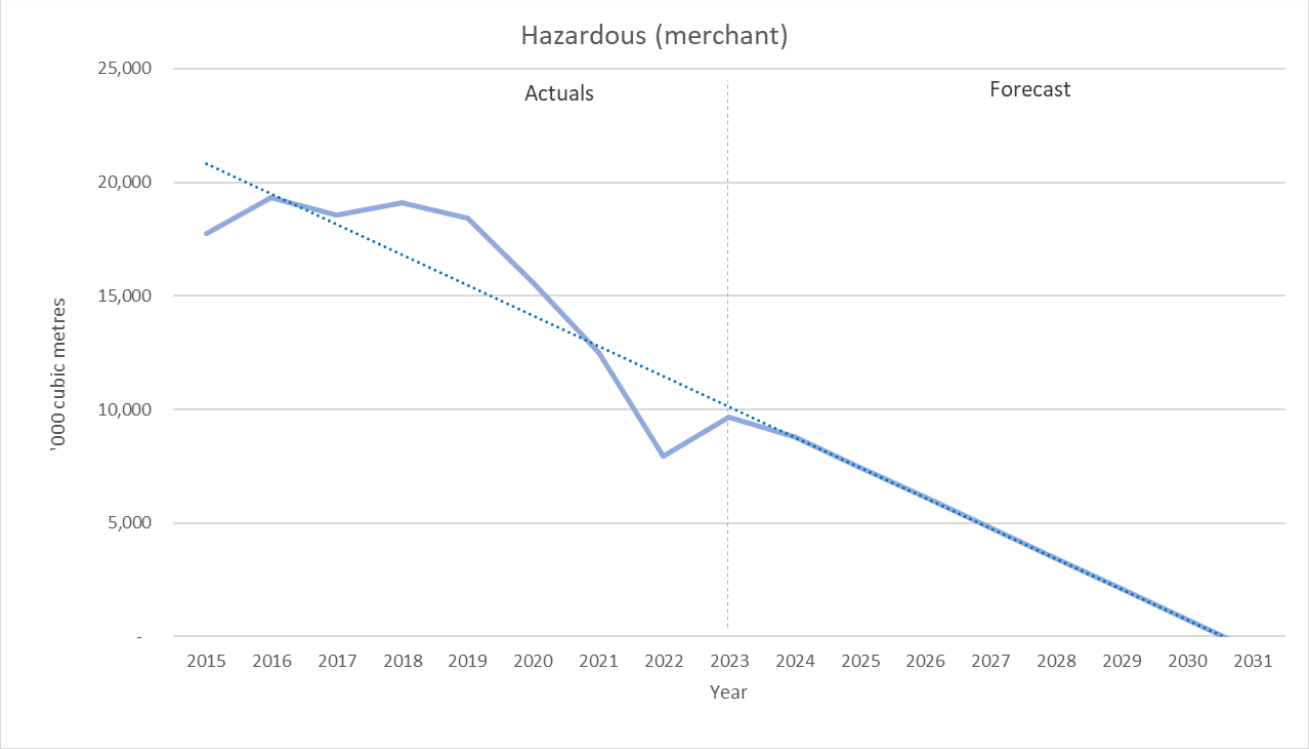
Plate 13.3-1 Remaining landfill capacity in Argyll and Bute, The Highlands, Inverclyde, North Ayrshire, Perth and Kinross, Stirling, and West Dunbartonshire



A13-3.3.7. Given that there is no hazardous waste landfill capacity in the study area, baseline remaining hazardous (merchant) landfill capacity is detailed in Plate 13.3-2 for England. Simple statistical forecasting has been used to demonstrate long term void capacity to the year of planned Proposed Scheme completion (2031) in the absence of future provision for landfill capacity. The

graph illustrates that hazardous (merchant) landfill capacity in England is forecast to run out by 2031.

Plate 13.3-2 Remaining hazardous (merchant) landfill capacity in England



A13-3.3.8. In summary: although trendlines can be plotted to forecast remaining landfill capacity up to 2031, the results cannot be relied on due to spikes in the data where additional capacity was engineered at various points in Scotland and England. Therefore, the current remaining landfill capacity data has been used as the baseline for the purposes of the assessment.

A13-3.3.9. These forecasts are based on the assumption that no new landfill capacity will be added up to 2031. This assumption is supported by Argyll and Bute Council's Waste Strategy (2018) which states commitments to divert waste from landfill, convert landfill sites to other waste site types, and facilitate compliance with the Scottish Government's ban on biodegradable municipal

waste to landfill by 2025. The Strategy does not make any commitment to increase landfill capacity.

A13-3.3.10. 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.