A358 Taunton to Southfields Dualling Scheme

Preliminary Environmental Information Report - Appendix 10.1
Material Assets and Waste Baseline

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1 Materials baseline

1.1 Existing baseline

1.1.1 In order to provide an assessment of the significance of any new development proposal in terms of material assets and waste it is necessary to identify and understand the baseline conditions in and around the study area. This provides a reference level against which any potential changes in material assets and waste can be assessed. The following section outlines information on the existing availability and demand on material assets, waste generated and received in Somerset and the South-West, minerals and safeguarding areas, peat resources, potentially hazardous waste arisings in the study area, and details of waste management facilities available.

Material assets

1.1.2 In accordance with schedule 2 of *The Waste (England and Wales) Regulations 2011* [1], measures would be taken to ensure at least 70% by weight of Construction and Demolition Waste (CDW) is subject to material recovery. The regional and England average baseline targets for use of alternative aggregates (which comprise both secondary aggregates that are by-products from industrial and mining operations, and recycled aggregates which are produced from construction waste) are set out in Table 1-1 (reproduced from the Table E/1.2 of DMRB LA 110 *Material assets and waste* [2]). The relevant target for the proposed scheme in the South-West region is 22%.

Table 1-1 DMRB recycled aggregate targets for England 2005-2020 (national and regional guidelines for aggregate provision published 2009)

Region	Recycled content target (alternative materials)	Total Aggregate provision (million tonnes)
South-West	22%	656
England Average	25%	3,908

1.1.3 In addition to the recycled aggregates targets for England, the aggregates levy and circular economy package should be considered in relation to the proposed scheme by reusing on-site materials and recovery of surplus materials.

Existing use of material assets

1.1.4 The proposed scheme would require both primary raw materials, such as aggregates and soil, and manufactured construction materials such as concrete, asphalt and steel.

1.1.5 Roads are subject to a periodic maintenance regime, and the DMRB CD 227 *Design for pavement maintenance* [3] highlights that all new roads are built to a 40-year design life, which can only be achieved if the highway is maintained. Maintenance is required based on a 10-year cycle of interventions which typically include:

- Year 10, minor intervention. Remove and replace surface course.
- Year 20, major intervention. Remove and replace surface course, replace kerbs, upgrade drainage system, replace road signs, patch the binder and road base selectively.

- Year 30, minor intervention as year 10.
- Year 40, major intervention as year 20.

1.1.6 The manufactured construction materials would be sourced from established suppliers who regularly provide materials for similar sized projects. The suppliers have not yet been determined, but the chosen contractor would ensure that they are suppliers with adequate resources to meet the quantitative needs of the proposed scheme, without having a negative influence on their resources. Where possible, materials would be provided from local sources in accordance with the proximity principle, although the contractor would work to ensure a balance with value for money.

1.1.7 In addition, information for the UK has also been provided as a national comparison (where information is not available for the UK due to the differing governing authorities for England, Wales and Scotland, England has been used to provide the national comparison). This information has been determined through a desk study using readily available sources, including from the British Geological Survey [4], Minerals Products Association [5] and International Steel Statistics Bureau [6].

1.1.8 Table 1-2 outlines the UK demand, in terms of sales of minerals, mineral products and steel.

Table 1-2 Materials demand in the UK

Material asset	UK demand per annum (million tonnes)
Aggregates of which:	251 [5]
Crushed rock	116.6 [4]
Sand and gravel – land won	45.8 [4]
Sand and gravel – marine won	13.4 [4]
Recycled and secondary	71 [5]
Cementitious (including imports) of which:	15.2 [5]
Cement (including imports)	11.7 [5]
Other cementitious materials (fly ash, ground clay bricks (GCBs))	3.4 [5]
Ready-mixed concrete	54.2 [5]
Concrete products	32 [5]
Asphalt	25.4 [5]
Dimension stone	1 [5]
Steel	10.72 [6]

Primary aggregates

1.1.9 Materials required for the construction of the proposed scheme will include both aggregates (e.g. sand and gravel and crushed rock) and aggregate containing materials (e.g. asphalt and concrete products). Some of these materials would originate off site, purchased as primary construction products, but it is likely that some would arise onsite, particularly from the use of excavated soils, crushed concrete or recycled asphalt planings, or recycled materials brought in from off-site, possibly from other projects or industries. However, some materials could also be required which may be more difficult to acquire from on-site sources or recycled sources, such as tar bound road planings.

1.1.10 The *National Planning Policy Framework* (NPPF) [7] requires Mineral Planning Authorities (MPA) to maintain a landbank of at least 7 years for supplies of sand and gravel and ten years for supplies of crushed rock.

1.1.11 Table 1-3 below provides a summary of aggregate sales and reserves in Somerset from the SCC *Local Aggregate Assessment (LAA) for 2006-2015* (second revision 2017) [8].

Table 1-3 Aggregate sales and reserves in Somerset 2015

Mineral	2015 Sales (tonnes)	Reserves at end of 2015 (tonnes)	Landbank (years)
Sand and gravel	-	7 million	12.5
Crushed rock	12.55 million	380 million	28.4
Marine aggregates	55,000	-	-
Secondary aggregates	19,501	-	-
Recycled aggregates	65,130	-	-

1.1.12 The LAA indicates that Somerset is the largest producer of crushed rock in the south of England, but that sand and gravel resources are limited and these materials have not been extracted locally during the past 10 years. Sand and gravel resource at 'Whiteball', extracting from the Budleigh Salterton Pebble Beds formation, straddles the Somerset-Devon border and currently supplies aggregates into both counties.

1.1.13 The LAA also indicates that Mineral Planning Authorities for Somerset, Devon and Cornwall have signed an MoU that provides a mechanism for sharing data and maintaining a joint sand and gravel landbank (with the most significant contribution from Devon).

1.1.14 Table 1-4 shows the sand and gravel reserves in Devon presented in *The Devon Local Aggregate Assessment for 2009-2018* [8].

Table 1-4 Aggregate reserves in Devon for 2018 and 2027

Mineral	Reserves at end of 2018 (tonnes)	Landbank at end of 2018 (years)	Reserves at end of 2027 (tonnes)	Landbank at end of 2027 (years)
Sand & Gravel	4.885 million	9.7	0.853 million	1.6

1.1.15 The SCC LAA (which provides the latest available data) indicates that marine-dredged sand and gravel originating from the Bristol Channel is landed at Dunball Wharf in Somerset which is run by a single operator with approximately 55,000 tonnes of marine-dredged sand and gravel landed in 2015. The total area dredged in 2015 was noted as being <5% of the licensed area and the LAA indicates that if landings and tide allows there is potential to dredge and land more material. The Somerset Minerals Plan Development Plan Document up to *2030* [9] (Adopted 2015) indicates annual quantities landed at the Wharf equate to roughly 5-10% of sand and gravel consumption in the county.

1.1.16 The *Somerset Minerals Plan Development Plan Document up to 2030* (Adopted 2015) [10] indicates there are a number of aggregate sites in Somerset that are considered to be dormant. Dormant sites were defined as a mineral site where no mineral development has taken place to any substantial extent in, on, or under the site at any time in the period 22 February 1982 and 06 June 1995. Dormant

sites have extant planning permission but do not have agreed modern working conditions, and are listed at Barnclose, Cloford, Cookswood, Emborough, Highcroft, Tadhill, Tor Hill, West Quantoxhead and Westdown.

1.1.17 At the time the Minerals Plan was prepared it was considered unlikely that any of these sites would be worked again during the Plan Period. However, it was noted that Westdown and Cloford may be proposed for working at a future date (outside the Plan Period and construction period).

Recycled and secondary aggregates

1.1.18 The *Somerset Minerals Plan Development Plan Document up to 2030* (Adopted 2015) indicates there are a number of permitted recycling aggregate facilities in Somerset located in former quarries or waste transfer stations. In addition, active quarries also generate recycled aggregates, and inert waste is often treated on-site (e.g. as part of major new development schemes) via mobile crushers.

1.1.19 Estimates within the Mineral Plan indicate that the potential capacity of existing facilities for recycled and secondary aggregates in Somerset is over 160,000 tonnes per year. However, the Minerals Plan considers this figure to be an under-estimate and that it does not fully represent the potential supply of secondary and recycled aggregate.

1.1.20 The Minerals Plan notes that the Mineral Planning Authority will support the supply of recycled and secondary aggregates including (but not limited to) high quality recycled aggregates and the development of aggregate recycling facilities in appropriate locations.

Material assets (on-site)

1.1.21 Material assets identified within the proposed scheme are likely to include topsoil, superficial deposits, made / reworked ground, engineering fill and demolition materials. Further detail on these geological units is included in Chapter 9 Geology and Soils of this PEI Report.

Mineral safeguarding areas and peat resources

1.1.22 The SCC Minerals Plan does not show any Mineral Safeguarding Areas within the proposed scheme area. The nearest is for building stone to the east of Stoke St Mary, approximately 400m to the west / south-west of the proposed scheme. The SCC Mineral and Waste Development Framework – Minerals Topic Paper 6 for Mineral Safeguarding Areas indicates that this MSA is designated for Blue Lias bedrock.

1.1.23 There are no peat resources located within the proposed scheme area.

Waste

1.1.24 The most recent information available relating to current waste received by operational waste facilities in Somerset has been gathered to provide the baseline for this assessment. Information on the waste received, and the waste management facilities has been determined through a desk-top study using a number of readily available resources, in particular data from the Environment Agency and SCC.

1.1.25 Environment Agency's Waste Management 2019 data for the South-West [11] indicates that 1,573,000 tonnes of waste was received / handled in Somerset in

2019, with 20,390,000 tonnes in the South-West region. A summary of the Environment Agency data for 2019 from waste returns has been provided in Table 1-5.

Table 1-5 Waste breakdown by disposal route for Somerset and the South-West in 2019

Type	Somerset (tonnes)	South-West (tonnes)
Landfill	484,000	3,211,000
Transfer	300,000	3,824,000
Treatment	583,000	8,334,000
Metal Recovery / Recycling	90,000	1,551,000
Incineration (throughput)	0	1,019,000
Use of Waste	0	112,000
Land Disposal	110,000	2,276,000
Storage	6,100	52,000
Total	**1,573,000**	**20,390,000**
Environment Agency Waste Data Interrogator [12] does not indicate there was any incineration or capacity for incineration within Somerset in 2019		

1.1.26 In addition, the Environment Agency Waste Data Interrogator for 2019 indicates that a further 261,000 tonnes of material was processed in Somerset via a mobile plant license with the majority (250,000 tonnes) being used for land-spreading.

1.1.27 The location of waste management facilities within Somerset identified within the Environment Agency Waste Data Interrogator for 2019 are shown on Figure 10.1 Waste management infrastructure with those accepting CDW shown on Figure 10.2 Waste management infrastructure accepting construction and demolition waste.

1.1.28 Environment Agency records relating to landfill inputs in Somerset for 2019 provided by the Environment Agency Waste Management Information 2019 have been summarised in Table 1-6. The data does not indicate there was any hazardous waste landfill capacity within Somerset in 2019.

Table 1-6 Landfill inputs for Somerset and the South-West in 2019 [11]

Landfill Type	Somerset (tonnes)	South-West (tonnes)
Hazardous merchant	-	51,000
Hazardous restricted	-	-
Non-hazardous with stable non-reactive hazardous waste (SNRHW) cell	224,000	396,000
Non-hazardous	187,000	1,541,000
Non-hazardous (Restricted)	-	-
Inert	73,000	1,223,000
Total	**484,000**	**3,211,000**

1.1.29 Table 1-7 summarises hazardous waste as the total quantity and the quantity relating to just CDW including asbestos in Somerset from the Environment Agency Waste Management Information 2019.

Table 1-7 Hazardous CDW production for Somerset and the South-West in 2019

Landfill Type	Somerset (tonnes)	South-West (tonnes)
Managed (Total)	38,510	457,213
Deposited (Total)	15,187	384,672
Managed – CDW inc. asbestos	20,364	131,337
Deposited – CDW inc. asbestos	10,288	102,525
'Total' relates to the combined quantities in the Environment Agency Waste Management Information 2019 for European Waste Catalogue (EWC) (also referred to as List of Waste) chapters 01 to 20 CDW relates to the quantities provided for EWC chapter 17 'Construction and Demolition Wastes including Excavated Soil from Contaminated Sites'		

1.1.30 Annual capacity data is published by the Environment Agency for landfill and incineration facilities at the regional and sub-regional level along with a national level. However, capacity data is not published for waste transfer, treatment or metal recycling sites.

1.1.31 Landfill capacity in Somerset and South-West Region for 2019 provided by the Environment Agency Waste Management Information 2019 has been summarised in Table 1-8.

Table 1-8 Landfill capacity for Somerset and the South-West Region in 2019

Landfill Type	Somerset (tonnes)	South-West (tonnes)
Hazardous merchant	-	1,352,000
Hazardous restricted	-	-
Non-hazardous with SNRHW cell	1,105,000	3,564,000
Non-hazardous	912,000	8,628,000
Non-hazardous Restricted	-	-
Inert	-	11,494,000
Total	2,017,000	25,038,000

1.1.32 Table 1-9 provides a summary of the trends in landfilling capacity within Somerset and the South-West region from 2004 when the existing landfill classifications were introduced; inert, non-hazardous, non- hazardous landfill sites with a Stabilised Non-Reactive Hazardous Waste (SNRHW) cell and merchant hazardous landfill sites. This excludes restricted user non-hazardous and hazardous restricted landfill sites as these are only permitted to only accept waste from the operators of these sites although the Environment Agency Waste Management 2019 data does not indicate there have been any restricted user landfills in Somerset since before 2005 and in the South-West region since 2013.

Table 1-9 Landfill capacity for Somerset and the South West 2005-2019

Year	Somerset (000 m^3)			South-West Region (000 m^3)		
	Inert	Non-inert	Total	Inert	Non-inert	Total
2005	1,069	4,254	**5,323**	5,958	46,816	**52,774**
2006	1,003	5,946	**6,949**	6,815	50,737	**57,552**
2007	765	5,184	**5,949**	5,970	46,993	**52,964**
2008	813	4,908	**5,721**	5,418	45,478	**50,896**
2009	908	5,547	**6,454**	5,860	34,933	**40,793**

Year	Somerset (000 m³)			South-West Region (000 m³)		
	Inert	Non-inert	Total	Inert	Non-inert	Total
2010	881	5,183	**6,063**	4,415	33,466	**37,881**
2011	850	4,609	**5,459**	9,494	30,058	**39,552**
2012	800	4,298	**5,098**	9,468	27,595	**37,063**
2013	726	3,882	**4,607**	9,737	25,411	**35,147**
2014	712	3,896	**4,607**	9,538	22,781	**32,318**
2015	675	3,369	**4,045**	10,897	19,556	**30,453**
2016	654	3,254	**3,908**	9,763	17,135	**26,898**
2017	654	2,689	**3,344**	9,386	16,024	**25,410**
2018	8,667	463	**9,130**	12,117	15,351	**27,468**
2019	-	2,017	**2,017**	11,494	13,544	**25,038**

1.1.33 The following Figure 1-1 and Figure 1-2 summarise the data on landfill capacity provided in Table 1-9.

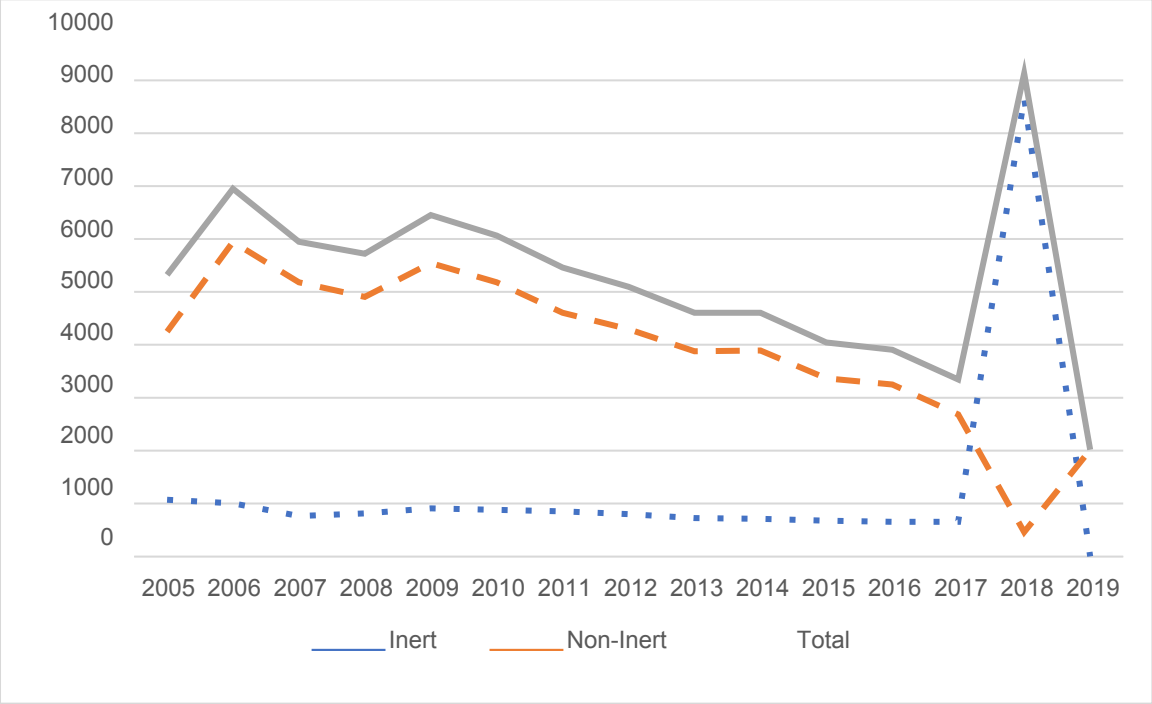

Figure 1-1 Landfill capacity in Somerset 2005-2019

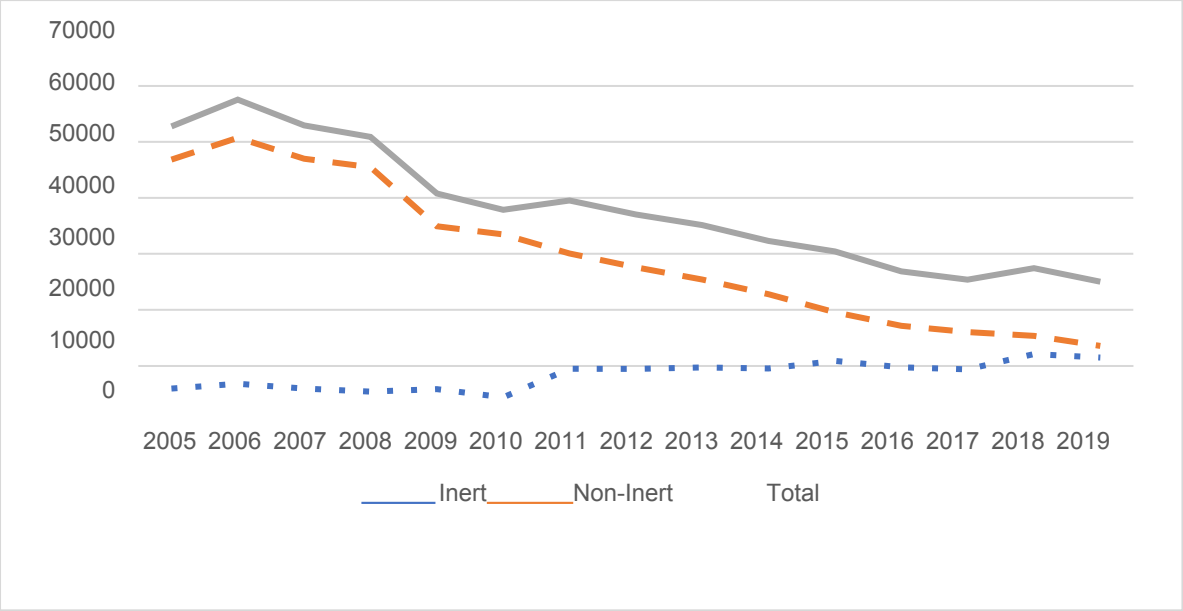

Figure 1-2 Landfill capacity in the South-West 2005-2019

1.1.34 Although the data does not include any information on additional capacity that may be introduced in the future, it shows there currently is an overall reducing trend in total landfill capacity within Somerset and the South-West region.

1.1.35 There was no inert waste capacity in Somerset in 2019 and prior to this there was an overall decreasing trend in capacity, except for a large increase in inert waste capacity in 2018 although it is possible this could be an error in the data as it is significantly higher than previous years. Within the wider South-West region there has been an overall increasing trend in inert waste capacity since 2011.

1.1.36 For non-inert wastes, there has been an overall decreasing in Somerset trend in capacity since 2006 and also within the wider South-West region. In Somerset, this capacity relates to non-hazardous waste as there is no hazardous waste landfill capacity.

1.1.37 The Waste Management Information 2019 shows that hazardous waste (merchant) capacity in the South-West Region is all located in Gloucestershire (Wingmoor Landfill Site – GL52 4DG) and Wiltshire (Parkgate Farm Hazardous Waste Landfill – SN5 4HG) which are both located around 90 miles from the proposed scheme.

1.1.38 Data from SCC on the capacity of their waste management facilities and remaining capacity of landfill is outlined in their most recent Minerals and Waste Annual Monitoring Report (2015-2016) [13] which is based on data obtained from 2011. This information is provided in Table 1-10. This has been included as background information as more recent information has been provided in the Environment Agency (2020) Waste Management data for 2019 [11] which has been used within the assessment.

Table 1-10 Waste management capacity for Somerset in 2011

Type	Capacity (tonnes per annum)	Capacity (m^3)
Recycling	1,213,603	
Other Recovery	45,000	
Non-hazardous landfill		5,146,000 *
Inert landfill		900,000
* Indicated in the SCC Annual Monitoring Report at 3,155,391 m^3 in December 2015		

1.1.39 The SCC *Minerals and Waste Annual Monitoring Report (2015-2016)* indicated that non-hazardous capacity relates to three landfill sites: Walpole (near Bridgewater), Dimmer (near Castle Cary) and Whiscombe (near Somerton). The *Somerset Waste Core Strategy* [14] (adopted 2013) indicates there is sufficient capacity to meet Somerset's requirements for non-hazardous landfilling until at least 2028 but this was based on data from 2010.

1.1.40 However, the *Minerals and Waste Annual Monitoring Report (2015-2016)* identified that the capacity of inert landfill disposal in Somerset (identified in Table 1-8 above) from two operational inert landfills according to data from the Environment Agency in December 2013 was now extremely limited and is likely to be used up within the next few years at the current disposal rates.

1.1.41 More recent information provided in the Environment Agency (2020) Waste Management data for 2019 and summarised in Table 1-7 indicates there is no remaining inert waste capacity in Somerset and only 2,017,000 m^3 of non-hazardous waste capacity (including non-hazardous sites with stable SNRHW capacity. However, there was 11,494,000 m^3 of inert waste capacity within the overall South-West region in 2019.

1.1.42 The Environment Agency Waste Data Interrogator for 2019 indicates there were three permitted non-hazardous landfills in Somerset (as noted in section 10.6.33) and 26 in the wider South-West region.

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[14] Somerset County Council, “The Somerset Waste Core Strategy,” 2021.