

Lower Thames Crossing

6.3 Environmental Statement Appendices

Appendix 11.5 – Waste Assessment Supporting Data

APFP Regulation 5(2)(a)

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Prescribed Forms and Procedure)
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1.1 Estimated waste arisings

Table 1.1 Estimated waste arisings – construction phase

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
Site clearance/utility connections/enabling works	Steel (gas pipeline and electricity pylons - removed and wastage)	1,947	246	16,230	2,054	1,745	221	Non-Hazardous
	Concrete (pre-cast pipes, slabs, foundations, sewer) - wastage and temporary works	734	306	34,004	14,168	44,061	18,359	Inert
	Asphalt - wastage and temporary works	829	460	18,994	10,552	45,515	25,286	Non-Hazardous
	Plastic (utility pipework) - wastage and temporary works	489	543	212	235	1,205	1,339	Non-Hazardous
	Primary aggregate	144,694	80,385	104,889	58,272	455,610	253,117	Inert

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
	Recycled aggregate	65,007	36,115	47,124	26,180	204,694	113,719	Inert
	Rubber			548	365			Non-Hazardous
	Sand			357	297	119	99	Non-Hazardous
	Clay					0.4	0.3	Non-Hazardous
	Cement			49,769	20,737	77	32	Non-Hazardous
	Copper	3	0.3	69	8	2	0.2	Non-Hazardous
	Bentonite			16,061	20,238			Non-Hazardous
	Admixtures			9,374	31,247			Non-Hazardous
	Excess vegetation from site clearance – offsite					26,118	48,858	Non-Hazardous

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
	recycling/ composting							
	Vegetation from site clearance - reused on site					39,177	73,287	Non-Hazardous
Demolition (properties and structures)	Concrete from demolition reused as recycled aggregate	854	356			6,063	2,526	Inert
	Concrete from demolition - sent offsite	384	160			2,728	1,137	Inert
	Steel	420	53			1,570	199	Non-Hazardous
	Other inert (e.g. brick, glass etc.)	503	209			3,088	1,287	Inert
	Insulation	23	45			138	277	Non-Hazardous
	Mixed metal	261	33			1,603	203	Non-Hazardous
	Plastic	48	54			298	331	Non-Hazardous

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
	Timber	23	33			140	200	Non-Hazardous
	Plasterboard	11	23			70	140	Non-Hazardous
	Hazardous waste (e.g. asbestos)	Unknown	Unknown			Unknown	Unknown	Managed in line with mitigation MW015
Construction	Concrete (permanent works, including pre-cast and poured)	5,925	2,469	63,039	15,959	11,667	4,861	Inert
	Steel	1,031	131	2,506	1,044	3,203	405	Non-Hazardous
	Plastic	30	34	34	38	271	301	Non-Hazardous
	Primary aggregate	15,279	8,488	29,586	16,437	26,300	14,611	Inert
	Recycled and primary aggregate	6,864	3,813	13,292	7,385	28,518	15,843	Inert
	Cement			7,693	3,205			Non-Hazardous
	Aluminium			23	12			Non-Hazardous

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
	Asphalt	10,074	5,597	10,401	5,778	21,526	11,959	Non-Hazardous
	Resin	84	42	52	26	232	116	Non-Hazardous
	Bitumen	19	19	64	64	52	52	Non-Hazardous
	Copper					0.05	0.01	Non-Hazardous
	Glass fibre reinforced polymer	19	21	5	6	34	38	Non-Hazardous
	Lime			62	62	17	12	Non-Hazardous
	Admixtures			2	7			Non-Hazardous
	Stone					325	271	Inert
	Timber	3	4	1	0.5	12	13	Non-Hazardous
	Contaminated excavated material potentially hazardous			294,300	163,500			Hazardous

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
	Non-hazardous excavated material			900,000	500,000			Non-Hazardous
	Non-hazardous excavated material - retained in Order Limits			1,188,000	660,000			Non-Hazardous
	General waste skips	4,636	4,636	7,650	7,650	18,900	18,900	Non-Hazardous
	Cardboard (packaging)	2,475	5,650	4,051	9,000	11,925	26,500	Non-Hazardous
	Dry mixed recycling	3,825	9,563	7,650	19,125	18,900	47,250	Non-Hazardous
	TBM and ancillaries x2			13,714	3,182			Non-Hazardous
Total inert reused/recycled/recovered (95%)		228,234	125,690	277,660	123,941	743,913	404,444	
Total inert sent for disposal (5%)		12,012	6,615	14,614	6,523	39,137	21,287	
Total inert waste		240,246	132,305	292,274	130,464	783,050	425,731	
Total non-hazardous reused/recycled/recovered (70%)		18,376	19,030	745,866	444,327	134,993	179,212	

Activity	Waste generated	Kent Roads		Tunnels		Roads North		Inert/Non-Hazardous/Hazardous
		Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	Estimated tonnes	Estimated m ³	
Total non-hazardous sent for disposal (30%)		7,875	8,156	319,524	849,471	57,854	76,805	
Total non-hazardous waste		26,251	27,186	1,065,390	1,293,798	192,847	256,017	
Total inert and non-hazardous reused/recycled/recovered ¹		246,610	144,720	1,023,526	568,268	878,906	583,656	
Total inert and non-hazardous sent for disposal ²		19,887	14,771	334,138	855,994	96,991	98,092	
Total inert and non-hazardous waste		266,497	159,491	1,357,664	1,424,262	975,897	681,748	

Notes:

¹ Total inert and non-hazardous waste reused/recycling/recovered is 1,296,645m³

² Total inert and non-hazardous waste sent for disposal is 968,857m³

The Design Manual for Roads and Bridges guidance LA 110 Material assets and waste (Highways England 2019) requires quantification of potentially hazardous waste. This is material that has been assumed to possess hazardous properties and thus requires specialist management, often outside the Order Limits.

Calculations for waste management exclude excavated materials sourced and used onsite within the Order Limits (11,176,500 million m³) as these are non-waste (under Article 2 of the Waste Framework Directive or using Materials Management Plan in line with the Contaminated Land: Applications in Real Environments - Definition of Waste: Code of Practice (CL:AIRE DOW COP)(2011)). These figures are presented in Material Assets Supporting Data (Application Document 6.3, Appendix 11.4).

The estimated recovery rates are based on the ‘good practice quick win’ recovery rates set out in the Achieving good practice Waste Minimisation and Management report published by Waste and Resources Action Programme (WRAP) (undated). The overall recovery rate is calculated by tonnage.

Table 1.2 Estimated waste arisings – operational phase

Waste type	Total generated (tonnes)	Waste recovered/recycled (tonnes)	Waste to landfill (tonnes)
Mixed construction and demolition	15	14	1
Timber	1	1	0
Metal	21	21	0
Plastic	0	0	0
Packaging	2	2	0
Mixed municipal	49	45	2
Septic tank	49	49	0
Concrete	11	11	0
Soil and stone	19	19	0
Tyres	7	7	0
Street cleanse	284	270	14
Waste electrical and electronic equipment	0.1	0.1	0
Hazardous	0.2	0.2	0
Roadkill	0	0	0
TOTAL annual average	459	441	18
Percentage of TOTAL		96%	4%

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