M3 Junction 9 Improvement

Scheme Number: TR010055

6.3 Environmental Statement Appendix 14.2 - Operational Greenhouse Gas Assessment Calculations (Rev 1) Clean

APFP Regulations 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Volume 6

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Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

M3 Junction 9 Improvement
Development Consent Order 202[x]

6.3 ENVIRONMENTAL STATEMENT - APPENDIX 14.2: OPERATIONAL GREENHOUSE GAS EMISSIONS CALCULATIONS

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference:	TR010055
Application Document Reference:	6.3
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Author:	M3 Junction 9 Improvement Project Team, National Highways

Version	Date	Status of Version
Rev 0	November 2022	Application Submission
Rev 1	6 June 2023	Deadline 1 Submission

Contents

Tables

Appendix 14.2: Operational GHG Emissions Assessment Calculation

Table 14.2.1: B6 Operational Energy Use Calculations Summary

Item	Total Load (kw)	Annual Usage (hours)	Total Energy Used (kwh)	Carbon Factor Units- kgCO2e/kWh	Conversion Factor	Tonnes CO2e / yr
Luminaires	48.5744	4380	212755.872	0.212	0.001	**45.1**
Traffic Signals	0.5	8760	4380	0.212	0.001	**0.9**
CCTV	0.25	8760	2190	0.212	0.001	**0.5**
VMS	24.3	8736	212284.8	0.212	0.001	**45.0**
Total						**91.5**

Table 14.2.2: B9 End User Utilisation of Infrastructure Calculations Summary

Operation Year	End-user Emissions (tCO_2e) – life cycle stage B9					
	DM Scenario	DS Scenario	Difference	Total (cumulative) over modelled 60-year operation (2027–2087) DM	Total (cumulative) over modelled 60-year operation (2027–2087) DS	Difference
2027	4,157,875	4,161,194	3,319	222,088,200	222,349,080	260,880
2042	3,549,335	3,554,026	4,691			

Table 14.2.3: B1 Land Use Change

Habitat group	ha / length of hedgerow			t CO_2 ha-1	
	Existing area	Proposed area	Combined change	Carbon stock in soils & vegetation	Operation Emissions per year
Cropland	33.96	13.18	-20.78	88.20	0
Grassland	14.10	23.49	9.38	69.00	-647.32
Heathland and shrub	3.02	6.56	3.54	100.00	-353.76
Lakes	0.00	1.00	1.00	n/a	0.00
Sparsely vegetated land	0.28	0.28	0.00	n/a	0.00
Urban	32.28	34.29	2.01	0.00	0
Woodland and forest	28.80	30.18	1.38	169.00	-232.81
Native Species Rich Hedgerow with trees	0.86	1.76	0.90	144.50	-130.63
Native Species Rich Hedgerow	0.19	0.19	0.00	144.50	0.00
Native Hedgerow	2.51	1.81	-0.70	144.50	0.00
				Total (t CO_2 ha-1)	**1,934.05**