

M3 Junction 9 Improvement

Scheme Number: TR010055

6.3 Environmental Statement Appendix 14.2 - Operational Greenhouse Gas Assessment Calculations

APFP Regulation 5(2)(a)

Planning Act 2008

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

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Planning Act 2008

**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**

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Contents

Appendix 14.2: Operational GHG Emissions Assessment Calculation 1

Tables

Table 14.2.1: B6 Operational Energy Use Calculations Summary 1
Table 14.2.2: B9 End User Utilisation of Infrastructure Calculations Summary 2
Table 14.2.3: B1 Land Use Change 3

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 ₂ e) – 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	3,214,777	3,217,473	2,696	160,624,429	160,764,188	139,759
2042	2,497,839	2,500,046	2,207			

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 CO₂ ha⁻¹)					1,934.05