

M25 junction 28 improvement scheme TR010029 6.1 Environmental Statement Chapter 16: Summary

APFP Regulation 5(2)(a)
Planning Act 2008

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



Infrastructure Planning

Planning Act 2008

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

The M25 junction 28 scheme Development Consent Order 2020

6.1 ENVIRONMENTAL STATEMENT CHAPTER 16: SUMMARY

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16 Summary

16.1 Introduction

- 16.1.1 This chapter summarises likely significant residual effects reported in this Environmental Statement (ES) (application document TR010029/APP/6.1) Chapters 5 to 15. Each topic chapter provides an assessment of the likely significant effects with the implementation of mitigation measures (i.e. residual effects).
- 16.1.2 The Case for the Scheme (application document TR010029/APP/7.1) provides the wider benefits of the Scheme. Table 16.1 below provides a high-level summary of the environmental receptors, the mitigations proposed as part of the implementation of the Scheme and whether there would be adverse or beneficial significant residual effects once the Scheme is implemented.

Table 16.1: Summary of significant residual environmental effects detailed in the individual topic chapters (Chapters 5 to 15)

Receptor (s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effects (s) after mitigation
Air quality - no significant residual effects have been identified during construction and operation							
Noise and vibration – no significant residual effects have been identified during construction and operation							
Biodiversity							
Veteran Trees	Loss of two veteran trees	Adverse	Construction	Permanent	Veteran trees that are lost will be replaced with suitable native species (eight trees for each tree removed, total of 16). Retained veteran trees will be protected. Measures to provide continuity of dead-wood resource for invertebrates is proposed including 'veteranisation' of at least two retained trees (this will include measures such as ring-barking of the main stem and/or major limbs), retention of felled trees for dead wood habitat and planting of suitable tree species. A departure from Highways Standards has been proposed to allow the retention of Tree T059.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Moderate adverse
Ingrebourne Valley SMI	Loss of 9.3% of terrestrial habitat during construction, of which 1.9% would be permanent. Loss primarily of woodland, scrub, semi-improved grassland and the shading of watercourses. Changes to local hydrology and water quality. Ground and surface water pollution, noise and visual disturbance. Permanent loss of 1.9% of SMI cannot be avoided.	Adverse	Construction	Temporary and permanent	Habitat within the SMI that is outside the works area will be retained and protected. Mitigation for pollution and disturbance is in the Outline CEMP. Woodland and grassland habitat will be replaced on new earthworks, around new ponds and elsewhere within the Scheme. Enhancement of Ingrebourne River and Weald Brook within the Scheme. Widespan bridges to allow movement of species along river corridors. Control / removal of non-native goldenrod to reinstate grassland habitat. To compensate for permanent loss of land within SMI, long-term management of reinstated and exiting habitats adjacent to the new loop road will be carried out in defined Ecological Compensation Areas (ECAs) under a Landscape and Ecological Management and Monitoring Plan (LEMP).	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)) and the Outline LEMP (Appendix 7.16, TR010029/APP/6.3) to be implemented through the LEMP (as secured by the DCO requirement 5 (application document TR010029/APP/3.1)).	Temporary moderate adverse but becoming slight adverse on establishment of mitigation and compensation habitat.

Receptor (s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effects (s) after mitigation
Ingrebourne River	<p>Permanent loss of open watercourse channel resulting from 80 m extension of Grove culvert.</p> <p>Potential increase in habitat fragmentation / reduction in connectivity for aquatic and marginal species as a result of culvert extension and bridges.</p> <p>Temporary disturbance to floodplain and riparian habitats during construction.</p> <p>Potential deterioration of water quality from pollution during construction.</p>	Adverse	Construction and operation	Temporary and permanent	<p>Best practice pollution prevention measures to be adopted and adhered to.</p> <p>Incorporation of natural bed into design of the Grove culvert extension. Measures to prevent “wash-out” of bed material downstream of the Grove culvert extension.</p> <p>Minimising A12 eastbound on-slip footprint by construction of retaining wall.</p> <p>Bridge structures set as high and wide as feasible to limit effect on ecological connectivity.</p> <p>Realignment of approximately 170 m of existing straight channel to new sinuous course between Grove Farm and the Weald Brook confluence downstream of the culvert extension including the restoration of more naturally functioning channel.</p> <p>Lowering of approximately 7,500 m² of floodplain, creation of backwaters on the Ingrebourne between Grove Farm and the Weald Brook confluence.</p> <p>Enhancement of riverine habitats elsewhere within the Ingrebourne WFD waterbody (GB106037028130) to be delivered by the Environment Agency, funded by the Applicant.</p>	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)) and appropriate design.	Moderate adverse within the DCO boundary in relation to the permanent loss of open water habitat only. (Neutral in relation to Ingrebourne WFD waterbody taking into account off-site enhancement works)
Terrestrial invertebrates (including stag beetle and alder flea-weevil)	<p>Loss of habitat and harm to adults, eggs and larvae.</p> <p>Adverse effect on the conservation status of invertebrate species until new habitats become established.</p>	Adverse	Construction	Temporary	<p>Habitat loss will be minimised and habitat outside the works area will be retained and protected.</p> <p>Woodland, wood edge and flower-abundant grassland habitat will be replaced on new earthworks, around new ponds and elsewhere within the Scheme.</p> <p>New habitat within the ECA will benefit invertebrates and be managed appropriately in line with the Outline LEMP.</p> <p>To provide continuity of deadwood habitat, felled trees will be retained appropriately, and trees will be veteranised. Cherry plum will be planted to provide an important foraging resource for invertebrates in early spring.</p>	As set out in the Outline CEMP (TR010029/APP/7.2) and Outline LEMP (Appendix 7.16, TR 010029/APP/6.3) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)) and the Outline LEMP (Appendix 7.16, TR010029/APP/6.3) to be implemented through the LEMP (as secured by the DCO requirement 5 (application document TR010029/APP/3.1)).	Temporary moderate adverse becoming neutral on establishment of mitigation and compensation habitat
Otter	<p>Loss of habitat and fragmentation of territories.</p> <p>Disturbance of individuals.</p>	Adverse	Construction	Temporary	<p>New meanders and reprofiling of the rivers and flood-plain will be created.</p> <p>Safe mammal passage through culverts will be included through length of extended and existing culverts.</p> <p>Mitigation for pollution and disturbance will be set out in the CEMP.</p>	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary moderate adverse becoming neutral on establishment of river habitat.

Road drainage and the water environment – no significant residual effects have been identified during construction and operation

Receptor (s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effects (s) after mitigation
Landscape and visual							
Landscape receptors	Three landscape receptors (Alder Wood, Maylands Golf Club and the A12 Corridor) will experience significant effects during construction due to the removal of vegetation and introduction of new road elements will alter the character of the landscape on a local scale.	Adverse	Operation	Permanent	Vegetation loss will be mitigated by the introduction of proposed planting, this will be to assist the integration of the Scheme into the wider landscape.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Moderate adverse in year 15
Visual receptors	Six visual receptors will experience significant effects during construction from the removal of vegetation and introduction of new road elements and associated infrastructure including: <ul style="list-style-type: none"> Residents of Grove Farm Residents of Maylands Cottages Residents of Johns Terrace, Harrods Park Patrons of Maylands Golf Club Users of the public rights of way (PRoW) north of Jermaines Wood Users of the bridleway following Nag's Head Lane 	Adverse	Operation	Temporary and permanent	Vegetation loss which will open up views of the Scheme will be mitigated by the introduction of proposed planting, this will be to assist the integration of the Scheme into the wider landscape and screen sensitive visual receptors.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	<p>Large adverse in year 15 for residents of Grove Farm</p> <p><u>Large adverse in year 1 for residents of Maylands Cottages but overall slight adverse by year 15</u></p> <p>Moderate adverse- in year 15 for residents of Maylands Cottages and patrons of Maylands Golf Club <u>but overall slight adverse by year 15</u></p> <p>Moderate adverse in year 1 for residents of Johns Terrace, Harrods Park, users of the PRoW north of Jermaines Wood and users of the bridleway following Nag's Head Lane but overall slight adverse by year 15</p>
Geology and soils – no significant residual effects have been identified during construction and operation							
Cultural heritage – no significant residual effects have been identified during construction and operation							
Materials and waste							
Waste	A significant effect on the regional waste capacity during construction is anticipated due to some material having to be disposed off-site and outside of the region.	Adverse	Construction	Temporary	Re-use of as much material on site as possible and undertaking best practice waste management during construction.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary moderate adverse

Receptor (s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effects (s) after mitigation
Peoples and communities							
Private dwellings (land take, severance and amenity)	Land take is required to be taken from Grove Farm as the property will be enclosed by the new loop road during construction.	Adverse	Operation	Permanent	Landscaping works to provide a visual and noise buffer between the new loop road and receptor. No further mitigation is proposed above and beyond what is set out within the Noise and Vibration and Landscape and Visual chapters (Chapter 6 and 9) of the ES.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Large adverse
	Grove Farm and Maylands Cottages will experience significant effects on amenity due to the creation of the new loop road. This is due to the removal of vegetation which currently screens the road from Maylands Cottage.	Adverse	Operation	Permanent	Landscaping works to provide a visual and noise buffer between the new loop road and receptor. No further mitigation is proposed above and beyond what is set out within the Noise and Vibration and Landscape and Visual chapters (Chapter 6 and 9) of the ES.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Large adverse
Community assets (amenity)	The construction of the Scheme and associated works is expected to have a significant impact on Maylands Golf Club with regard to visual and noise amenity.	Adverse	Construction	Temporary	Mitigation to amenity would be provided as outlined within the noise and landscape chapters (Chapter 6 and 9) of the ES.	As set out in the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary moderate adverse
Driver stress	Improvement to the traffic flows that would be generated following the completion of the works.	Beneficial	Operation	Permanent	n/a		Moderate beneficial
Climate - no significant residual effects have been identified during construction and operation							
Cumulative effects							
Human (including community and private assets, sensitive receptors and vulnerable groups)	Significant in-combination effects in relation to human receptors are expected during construction. This is due to land take and visual impact, including very large landscape adverse effects upon Grove Farm and large adverse effects on Maylands Cottages.	Adverse	Construction	Temporary	Mitigation is outlined in the relevant ES chapters.	Mitigation to be implemented through the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary large adverse for human receptors which will reduce to slight in-combination effects during operation overall
Ecological receptors – protected species and existing habitats	Significant in-combination effects in relation to ecological receptors are expected during construction due to disturbance.	Adverse	Construction	Temporary	Mitigation is outlined in the relevant ES chapters.	Mitigation to be implemented through the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary moderate adverse for ecological receptors which will reduce to slight in-combination effects during operation overall

Receptor (s)	Description of effects	Adverse / beneficial	Construction / operation	Temporary / long term	Mitigation requirements	Mitigation delivery mechanism	Significance of residual effects (s) after mitigation
Landscape and townscape	Significant in-combination effects in relation to landscape receptors are expected during construction. This is due to effects on Landscape Character Areas.	Adverse	Construction	Temporary	Mitigation is outlined in the relevant ES chapters.	Mitigation to be implemented through the Outline CEMP (TR010029/APP/7.2) to be implemented through the CEMP (as secured by the DCO requirement 4 (application document TR010029/APP/3.1)).	Temporary moderate adverse for landscape receptors which will reduce to slight in-combination effects during operation overall
Human - all travellers, i.e. vehicle travellers, cyclists, and pedestrians	Significant beneficial in-combination effects on vehicle travellers through improved traffic flow and reduced congestion.	Beneficial	Operation	Permanent	n/a		Moderate beneficial

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