

# M60/M62/M66 Simister Island Interchange

TR010064

## 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**

**M60/M62/M66 Simister Island Interchange  
Development Consent Order 202[ ]**

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**ENVIRONMENTAL STATEMENT  
CHAPTER 16 SUMMARY**

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<b>Regulation Reference</b>	Regulation 5(2)(a)
<b>Planning Inspectorate Scheme Reference</b>	TR010064
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<b>Author</b>	M60/M62/M66 Simister Island Interchange Costain Jacobs Partnership Project Team & National Highways

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## 16 Summary

### 16.1 Introduction

- 16.1.1 This chapter provides a summary of the likely significant residual effects (i.e. the likely significant effects after the implementation of mitigation measures) identified in assessment chapters 5 to 15 of this Environmental Statement (TR010064/APP/6.1).
- 16.1.2 The likely significant residual effects during construction and operation are listed in Table 16.1 and Table 16.2, respectively. The tables also detail the mitigation measures associated with the effects and their delivery mechanisms.
- 16.1.3 All of the mitigation measures outlined in Table 16.1 and Table 16.2 are included in the Register of Environmental Actions and Commitments (REAC), which is contained within Chapter 3 of the First Iteration Environmental Management Plan (EMP) (TR010064/APP/6.5). The First Iteration EMP would be developed into the Second Iteration EMP to be implemented during construction and secured by Requirement 4 of the draft Development Consent Order (DCO) (TR010064/APP/3.1).

### 16.2 Likely significant residual effects during construction

- 16.2.1 Table 16.1 lists the likely significant residual effects during construction and details the mitigation measures associated with the effects and their delivery mechanisms.

**Table 16.1 Summary of likely significant residual effects during construction**

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<b>Air quality</b>			
No likely significant residual effects identified.			
<b>Cultural heritage</b>			
No likely significant residual effects identified.			

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<b>Landscape and visual</b>			
Partial loss of existing landscape features and addition of new noticeable features during construction on Landscape Character Area (LCA) 26: Prettywood, Pilsworth, and Unsworth Moss.	N/A – mitigation planting would take time to establish. Mitigation described under the operational landscape and visual effects section of Table 16.2.	N/A.	Moderate adverse (significant)
<p>The Scheme would become the dominant feature or would form a noticeable feature of the view during construction for the following receptors:</p> <ul style="list-style-type: none"> <li>• Residents on Marston Close. Representative of views from residential properties on Mode Hill Lane (representative viewpoint* (VP) VP15)</li> <li>• Residents on Rothay Close. Representative of views from Brathay Close and Heybrook Close (VP16)</li> <li>• Residents on Derwent Avenue. Representative of views from Duddon Close and Leven Walk (VP17)</li> <li>• Representative of Eastview (residential property) and No. 7, 9 and 11 Corday Lane (VP18)</li> <li>• Residents on Parrenthorn Road (VP21)</li> <li>• Residents on Warwick Avenue (VP23)</li> <li>• Residents on Thatch Leach Lane, Conisborough Place, and Glendevon Place (VP26)</li> <li>• Residents at properties 1, 3, 5, 7, 9, 11, 13, 15, and 17 Barnard Avenue; and 76 Warwick Avenue (VP27)</li> </ul>	N/A – mitigation planting would take time to establish. Mitigation described under the operational landscape and visual effects section of Table 16.2.	N/A.	Very large adverse (significant)

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<ul style="list-style-type: none"> <li>Residents at properties 1 and 2 Warwick Close; 51, 53, 55, 57, 59 and 61 Kenilworth Avenue; and 2 and 4 Barnard Avenue (VP28)</li> </ul>			
<p>The Scheme would become the dominant feature or would form a noticeable feature of the view during construction for the following receptors:</p> <ul style="list-style-type: none"> <li>Users of Footpath 9WHI, and Footpath 46WHI on Egypt Lane. Road users on Egypt Lane. Users of Pike Fold Golf Course (VP7)</li> <li>Users of Footpath 12WHI (VP14)</li> <li>Visitors to Parrenthorn High School, cyclists and road users on Heywood Road (VP19)</li> <li>Users of Bridleway 27aPRE on the Heaton Park Registered Park and Garden boundary (VP20)</li> </ul>	<p>N/A – mitigation planting would take time to establish. Mitigation described under the operational landscape and visual effects section of Table 16.2.</p>	<p>N/A.</p>	<p>Large adverse (significant)</p>
<p>The Scheme would become the dominant feature or would form a noticeable feature of the view during construction for the following receptors:</p> <ul style="list-style-type: none"> <li>Residents at Brickhouse Farm and four residential properties on Killy Lane. Users of Footpaths 6WHI, and 7WHI. Visitors to Pike Fold Golf Course (VP3)</li> <li>Residents at Unsworth Moss Farm, Unsworth Moss Bungalow, and Moss Top Farm. Users of Footpaths 8WHI and 9WHI (VP5)</li> <li>Users of Footpath 9WHI on Hills Lane (VP6)</li> </ul>	<p>N/A – mitigation planting would take time to establish. Mitigation described under the operational landscape and visual effects section of Table 16.2.</p>	<p>N/A.</p>	<p>Moderate adverse (significant)</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<ul style="list-style-type: none"> <li>• Visitors to Boz Park public open space (VP12)</li> <li>• Residents at Cowl Gate Farm (VP14)</li> <li>• Users of permissive path via Haweswater Aqueduct underpass (VP17)</li> <li>• Road users on Warwick Close, Kenilworth Avenue, and Barnard Avenue (VP28)</li> <li>• Visitors to Boz Park public open space (VP30)</li> </ul>			
<b>Biodiversity</b>			
No likely significant residual effects identified.			
<b>Geology and soils</b>			
<p>There would be a permanent/temporary loss of agricultural land of the following Agricultural Land Classification (ALC) grades due to land take requirements:</p> <ul style="list-style-type: none"> <li>• Grade 2 (Best and Most Versatile (BMV)) – permanent loss of 0.4 hectares (ha) (approximately 0.5% of the Order Limits)</li> <li>• Grade 3a (BMV) – permanent loss of 1.9ha (approximately 2.2% of the Order Limits)</li> </ul>	<p>Soil Resource Plan will be developed from the Outline Soil Management Plan in Appendix F of the First Iteration EMP (TR010064/APP/6.5) and implemented throughout construction (commitment GS7).</p> <p>Topsoil will be stripped and sustainably reused wherever practicable from the footprints of all permanent development (hardstanding and materials placement) (commitment GS9).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p> <p>Soil Resource Plan (to be further developed from the Outline Soil Management Plan in Appendix F of the First Iteration EMP (TR010064/APP/6.5)).</p>	Moderate adverse (significant)

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<ul style="list-style-type: none"> <li>Grade 3b – permanent loss of 17.3ha (including 2.2ha of unsurveyed agricultural land assumed to be Grade 3b) (approximately 20.2% of the Order Limits) and temporary loss of 9.9ha (including 1.7ha of unsurveyed agricultural land assumed to be Grade 3b) (approximately 11.6% of the Order Limits). 27.2ha of Grade 3b land impacted in total (approximately 31.7% of the Order Limits).</li> </ul>			
<b>Material assets and waste</b>			
No likely significant residual effects identified.			
<b>Noise and vibration</b>			
<p>275 receptors would be significantly affected by noise during daytime construction works, at various locations in the areas to the north and south of the M60 between J17 and J18, Simister Village and Cowl Gate Farm, depending on the phase of works.</p>	<p>Best Practicable Means and the use of quietest available plant (commitment NV1).</p> <p>Consideration of further measures to reduce noise from construction activities. Commitment NV1 includes the establishment of procedures to determine if any dwellings are eligible for noise insulation or the temporary re-housing of residents during construction within a Noise and Vibration Management Plan.</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p> <p>Noise and Vibration Management Plan (to be further developed and implemented based on the Outline Noise and Vibration Management Plan in Appendix B of the First Iteration EMP (TR01004/APP/6.5)).</p>	<p>Significant adverse</p>



Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<p>647 receptors during night-time construction works, at various locations in the areas to the north and south of the M60 between J17 and J18, Simister Village and Cowl Gate Farm, depending on the phase of works.</p>	<p>Best Practicable Means and the use of quietest available plant (commitment NV1).</p> <p>Consideration of further measures to reduce noise from construction activities. Commitment NV1 includes the establishment of procedures to determine if any dwellings are eligible for noise insulation or the temporary re-housing of residents during construction within a Noise and Vibration Management Plan.</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p> <p>Noise and Vibration Management Plan (to be further developed and implemented based on the Outline Noise and Vibration Management Plan in Appendix B of the First Iteration EMP (TR01004/APP/6.5)).</p>	<p>Significant adverse</p>
<b>Population and human health</b>			
<p>There would be temporary/permanent effects on the following agricultural land holdings due to land take requirements to accommodate construction works:</p> <ul style="list-style-type: none"> <li>• SW1: approximately 7.76ha of land take, of which 5.49ha would be permanently acquired (approximately 24% of the landholding)</li> <li>• NW1: approximately 8.61ha of land take, of which 2.09ha would be permanently acquired (approximately 17.5% of the landholding)</li> <li>• NE4: approximately 2.40ha of land take, or which 1.44ha would be permanently acquired (approximately 27.6% of the landholding).</li> </ul>	<p>A Community Liaison Manager will oversee liaison with affected parties. Liaison with landowners, tenants, and their agents which are affected by the Scheme has been ongoing (commitment PHH17).</p> <p>All land subject to temporary possession will be restored to the original surveyed condition at the time of entry (unless otherwise agreed with the landowner) (commitment PHH13).</p> <p>The principles of the compensation code will apply.</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Moderate adverse (significant)</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<p>There would be a permanent effect on agricultural land holding NE2 due to permanent land take of approximately 10.96ha (approximately 36% of the landholding) for the Northern Loop (including drainage), landscaping, ecological mitigation, and a public right of way (PRoW) diversion.</p>	<p>A Community Liaison Manager will oversee liaison with affected parties. Liaison with landowners, tenants, and their agents which are affected by the Scheme has been ongoing (commitment PHH17).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Moderate adverse (significant)</p>
<p>There would be a temporary effect on users of the permissive path via Haweswater Aqueduct underpass due to a temporary closure required for approximately six to eight weeks, with diversion route via Sandgate Road.</p>	<p>So far as practicable, works will be planned to avoid temporary closure of the permissive path during school term times, and consideration will be given to busy periods around school opening and closing times (commitment PHH7). Note that since this mitigation is uncertain it has not been accounted for in the assessment of significance.</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Very large adverse (significant)</p>
<p>There would be a temporary effect on users of Footpath 9WHI due to closure of public footpath over a duration of approximately 36 to 42 months until a replacement route is provided.</p>	<p>None identified.</p>	<p>N/A.</p>	<p>Moderate adverse (significant)</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<p>There would be a short-term temporary effect on users of Footpath 84BUR due to temporary closure required for approximately two to four weeks, with diversion route via The Hags.</p>	<p>Access along Footpath 84BUR will be maintained for public use so far as possible throughout construction. Where this is not safe and practicable a diversion route will be provided (commitment PHH11).</p> <p>All temporary diversions of PRow and other routes used by walkers, cyclists and horse riders will be clearly signed and suitable for all potential users of the existing provision (commitment PHH12).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Moderate adverse (significant)</p>
<p>There would be temporary negative effects on access to the natural environment and outdoor recreation for residents in the Besses ward due to impact on greenspace and public footpath diversions.</p>	<p>All temporary diversions of PRow and other routes used by walkers, cyclists and horse riders will be clearly signed and suitable for all potential users of the existing provision (commitment PHH12).</p> <p>Mitigation planting would take time to establish. Mitigation is described under the operational landscape and visual effects section of Table 16.2.</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Moderate negative (significant)</p>
<p>There would be a temporary negative effect on quality of urban and natural environments (environmental noise) in all wards in the human health assessment study area (Besses, Holyrood, Unsworth, and St. Mary's wards) due to construction-related noise.</p>	<p>Consideration of further measures to reduce noise from construction activities (see commitment NV1 in the Noise and vibration section above for further details).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Large negative (significant)</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<p>There would be a medium-term negative effect on mental wellbeing for residents in the Besses, Holyrood and Unsworth wards, associated with combination of construction noise, localised dust, lighting, changes to accessibility and severance which are likely to lead to annoyance.</p>	<p>A Community Liaison Manager will oversee liaison with affected parties (commitment PHH17).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5).</p>	<p>Moderate negative (significant)</p>
<p><b>Road drainage and the water environment</b></p>			
<p>There would be significant effects on the following groundwater dependent terrestrial ecosystem (GWDTE) sites** from potential changes to groundwater flows, levels and quality due to ground disturbance (associated with ground compaction, piling, soil stripping, vegetation clearance, and construction of haul roads, compounds, and temporary works areas):</p> <ul style="list-style-type: none"> <li>• Cowl Gate Farm</li> <li>• Castle Brook South</li> <li>• Egypt Lane South.</li> </ul>	<p>Bored piles associated with the Simister Pike Fold Viaduct will be designed to ensure that there is no permanent residual pathway for potential contamination at Cowl Gate Farm GWDTE (commitment W27).</p> <p>Clay bunds will be used to prevent backfilled open-cut trenches from acting as a groundwater drain within the Order Limits. This will mitigate against long term potential impacts to Cowl Gate Farm, Castle Brook South, and Egypt Lane South GWDTEs (commitment W27).</p>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5)</p>	<p>Large adverse</p>
<p><b>Climate</b></p>			
<p>No likely significant residual effects identified.</p>			

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Delivery mechanism	Likely significant residual effect
<b>Cumulative effects</b>			
The construction of the Scheme in combination with the construction of ID BMBC-APP-040 (Northern Gateway site JPA1.1, application reference 71262) has the potential for significant adverse cumulative effects for cultural heritage, landscape and visual, geology and soils, noise and vibration, and population and human health.			
*See Figure 7.5: Representative Viewpoints and Photomontage Locations of the Environmental Statement Figures (TR010064/APP/6.2) for the locations of the representative viewpoints.  **Effects on the habitats supported by GWDTE sites are considered in the biodiversity assessment. Due to the type and importance of the habitats supported by these three sites, the biodiversity assessment has concluded that these effects would not be ecologically significant.			

### 16.3 Likely significant residual effects during operation

16.3.1 Table 16.2 lists the likely significant residual effects during operation and details the mitigation measures associated with the effects and their delivery mechanisms. The landscape planting illustrated in Figure 2.3: Environmental Masterplan of the Environmental Statement Figures (TR010064/APP/6.2)), listed in Table 16.2 as a mitigation delivery mechanism, is secured through Requirement 5 of the draft DCO (TR010064/APP/3.1).

**Table 16.2 Summary of likely significant residual effects during operation**

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<b>Air quality</b>			
No likely significant residual effects identified.			
<b>Cultural heritage</b>			
No likely significant residual effects identified.			

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<b>Landscape and visual</b>			
<p>The following viewpoints would have close or medium distance open views of the Scheme and the Scheme would be a prominent feature of the view:</p> <ul style="list-style-type: none"> <li>• Users of Footpath 12WHI (VP14*)</li> <li>• Residents on Marston Close. Representative of views from residential properties on Mode Hill Lane (VP15)</li> <li>• Residents on Rothay Close. Representative of views from Brathay Close and Heybrook Close (VP16)</li> <li>• Residents on Derwent Avenue. Representative of views from Duddon Close and Leven Walk (VP17)</li> <li>• Residents on Warwick Avenue (VP23)</li> <li>• Residents on Thatch Leach Lane, Conisborough Place, and Glendevon Place (VP26)</li> </ul>	<p>Mitigation planting to help integrate the Scheme into the landscape and to help screen views of the Scheme:</p> <ul style="list-style-type: none"> <li>• Planting along the Simister Pike Fold Viaduct embankment west of the M66 (commitment LV9).</li> <li>• Planting on the Simister Pike Fold Bridge embankments and Northern Loop embankments and within the Northern Loop (commitment LV10).</li> <li>• Planting along Pole Lane to strengthen the existing hedgerow, and along the nearby northbound M66 verge (commitment LV11).</li> <li>• Planting along the eastbound and westbound M60 mainline verges and embankments between M60 J17 and J18 (commitment LV14).</li> </ul>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5)</p> <p>Environmental Masterplan (Figure 2.3 of the Environmental Statement Figures (TR010064/APP/6.2))</p>	<p>Year 1 (Opening Year):            Large adverse (significant)</p> <p>Year 15 (Design Year):            Not significant</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<p>For the following viewpoints, there would be views of the Scheme, though these views would be limited by intervening vegetation, fencing, buildings or landform, or the Scheme would not be the main focus of the view, or the Scheme would form part of the view in the medium or long distance:</p> <ul style="list-style-type: none"> <li>Residents at Brickhouse Farm and four residential properties on Killy Lane. Users of Footpath 6WHI and 7WHI. Visitors to Pike Fold Golf Course (VP3)</li> <li>Residents at Unsworth Moss Farm, Unsworth Moss Bungalow, and Moss Top Farm. Users of Footpaths 8 WHI and 9WHI (VP5)</li> <li>Users of Footpath 9WHI, and Footpath 46WHI on Egypt Lane. Road users on Egypt Lane. Users of Pike Fold Golf Course (VP7)</li> <li>Visitors to Boz Park public open space (VP12)</li> <li>Residents at Cowl Gate Farm (VP14)</li> <li>Users of permissive path via Haweswater Aqueduct underpass (VP17)</li> <li>Representative of residents at Eastview (residential property) and No. 7, 9 and 11 Corday Lane (VP18)</li> <li>Visitors to Parrenthorn High School, cyclists and road users on Heywood Road (VP19)</li> <li>Users of bridleway 27aPRE on the Heaton Park Registered Park and Garden boundary (VP20)</li> </ul>	<p>Existing vegetation clearance within the temporary works areas will be minimised as far as practicable. Particular attention will be given to the retention of mature vegetation including individual trees, linear tree belts and woodlands (commitment LV3).</p> <p>Mitigation planting to help integrate the Scheme into the landscape and to help screen views of the Scheme:</p> <ul style="list-style-type: none"> <li>Hedgerow planting in areas adjacent to the environmental areas, along the new highway boundaries and around ponds (commitment LV5).</li> <li>Aquatic and marginal planting at the ponds and swales (commitment LV8).</li> <li>Planting along the Simister Pike Fold Viaduct embankment west of the M66 (commitment LV9).</li> <li>Planting on the Simister Pike Fold Bridge embankments and Northern Loop embankments and within the Northern Loop (commitment LV10).</li> </ul>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5)</p> <p>Environmental Masterplan (Figure 2.3 of the Environmental Statement Figures (TR010064/APP/6.2))</p>	<p>Year 1 (Opening Year):        Moderate adverse (significant)</p> <p>Year 15 (Design Year):        Not significant</p>

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<ul style="list-style-type: none"> <li>Residents on Parrenthorn Road (VP21)</li> <li>Residents at properties 1, 3, 5, 7, 9, 11, 13, 15, 17 Barnard Avenue; and 76 Warwick Avenue (VP27)</li> <li>Visitors to Boz Park public open space (VP30)</li> </ul>	<ul style="list-style-type: none"> <li>Planting along Pole Lane to strengthen the existing hedgerow, and along the nearby northbound M66 verge (commitment LV11).</li> <li>Planting of linear tree belts along the M60 northbound to M60 westbound on-slip (commitment LV12).</li> <li>Planting along the eastbound and westbound M60 mainline verges and embankments between M60 J17 and J18 (commitment LV14).</li> <li>Planting of trees and shrubs, and species rich grassland creation, within land east of the Northern Loop (commitment LV15).</li> </ul>		



Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<p>Residents at properties 1 and 2 Warwick Close; 51, 53, 55, 57, 59 and 61 Kenilworth Avenue; 2 and 4 Barnard Avenue (VP28) would have views of the Scheme, though these views would be limited by intervening vegetation, fencing, buildings or landform, the Scheme would not be the main focus of the view, or would form part of the view in the medium or long distance. However, vegetation removed would not be reinstated in the M60 verge due to the narrowness of the remaining verge, and close proximity of the hard shoulder and drainage. Shrub planting would be reinstated along Warwick Close and maintained no higher than 1.5m to follow requirements for planting near existing underground utilities. The planting would provide some amenity value although it would not be tall enough to provide any filtering or screening above the highway fencing. The highway fence would provide screening of the motorway from the ground level although open views would remain from the upper storeys.</p>	<p>Existing vegetation clearance within the temporary works areas will be minimised as far as practicable. Particular attention will be given to the retention of mature vegetation including individual trees, linear tree belts and woodlands (commitment LV3).</p> <p>Mitigation planting to help integrate the Scheme into the landscape and to help screen views of the Scheme:</p> <ul style="list-style-type: none"> <li>Planting along the eastbound and westbound M60 mainline verges and embankments between M60 J17 and J18 (commitment LV14).</li> <li>Shrub planting along Warwick Close to provide amenity value (commitment LV16).</li> </ul>	<p>REAC, contained within the First Iteration EMP (TR010064/APP/6.5)</p> <p>Environmental Masterplan (Figure 2.3 of the Environmental Statement Figures (TR010064/APP/6.2))</p>	<p>Year 1 (Opening Year): Moderate adverse (significant)</p> <p>Year 15 (Design Year): Moderate adverse (significant)</p>
<b>Biodiversity</b>			
No likely significant residual effects identified.			
<b>Geology and soils**</b>			
No likely significant residual effects identified.			
<b>Material assets and waste</b>			
No likely significant residual effects identified.			

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<b>Noise and vibration</b>			
No likely significant residual effects identified.			
<b>Population and human health**</b>			
There would be a permanent positive significant effect on health outcomes (morbidity and mortality) in all wards in the human health study area (Besses, Holyrood, Unsworth and St. Mary's wards) due to overall reduction in long-term exposure to traffic noise.	N/A.	N/A.	Large positive (significant)
<b>Road drainage and the water environment</b>			
<p>There would be significant effects on the following GWDTE sites due to permanent below ground structures including drainage, piles and backfilled open-cut trenches leading to changes in groundwater levels and flows:</p> <ul style="list-style-type: none"> <li>• Cowl Gate Farm</li> <li>• Castle Brook South</li> <li>• Egypt Lane South.</li> </ul>	Clay bunds will be used to prevent backfilled open-cut trenches from acting as a groundwater drain within the Order Limits. This will mitigate against long term potential impacts to Cowl Gate Farm, Castle Brook South, and Egypt Lane South GWDTEs (commitment W27).	REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Moderate adverse
<b>Climate</b>			
No likely significant residual effects identified.			

Description of effect on receptor(s)	Mitigation measure in the REAC, contained within the First Iteration EMP (TR010064/APP/6.5)	Mitigation mechanism	Likely significant residual effect
<b>Cumulative effects</b>			
<p>The operation of the Scheme in combination with the operation of ID BMBC-APP-040 (Northern Gateway site JPA1.1, application reference 71262) has the potential for significant adverse cumulative effects for air quality, landscape and visual (in operation year 1, reducing to not significant by year 15), biodiversity, and noise and vibration.</p>			
<p>*See Figure 7.5: Representative Viewpoints and Photomontage Locations of the Environmental Statement Figures (TR010064/APP/6.2) for the locations of the representative viewpoints.</p> <p>**The permanent loss of agricultural land occurring during construction would persist during operation but is not considered as an additional effect.</p>			

## Acronyms and initialisms

Acronym or initialism	Term
ALC	Agricultural Land Classification
BMV	Best and Most Versatile
DCO	Development Consent Order
EMP	First Iteration Environmental Management Plan
GWDTE	Groundwater Dependent Terrestrial Ecosystem
LCA	Landscape Character Area
PRoW	Public Right of Way
REAC	Register of Environmental Actions and Commitments
SOAEL	Significant Observed Adverse Effect Level
VP	Representative viewpoint (in the landscape and visual impact assessment)