M3 Junction 9 Improvement

Scheme Number: TR010055

6.1 Environmental Statement Chapter 16 Summary of Effects

APFP Regulation 5(2)(a)

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M3 Junction 9 Improvement
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6.1 ENVIRONMENTAL STATEMENT - CHAPTER 16: SUMMARY OF EFFECTS

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Author:	M3 Junction 9 Improvement Project Team, National Highways

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16.1 Introduction

16.1.1 This chapter presents a summary in a tabular format of all residual effects identified on receptors presented in the **Environmental Statement (ES) (Document Reference 6.1)** as a result of the M3 Junction 9 Improvement Scheme (the Scheme) during construction and operation. This chapter also states whether an effect on a receptor is considered to be significant (beneficial or adverse) in terms of Environmental Impact Assessment (EIA).

16.1.2 In addition, this chapter outlines where monitoring is required of identified significant adverse effects. Where monitoring is required, this is secured within the Record of Environmental Actions and Commitments which forms part of the **first iteration Environmental Management Plan (fiEMP) (Document Reference 7.3)**. Monitoring of non-significant residual effects is not required by the EIA Regulations, therefore in **Table 16.1** monitoring is not proposed in for non-significant residual environmental effects.

16.1.3 The Scheme has the potential to result in both beneficial and adverse residual effects to the environment. Some of these impacts may occur during construction, such as benefits to the labour market, or adverse impacts to vegetation and habitat through land take. Other residual effects may occur during operation, such as the development/maturation of beneficial new habitats resulting from the landscape and ecological mitigation proposals, or adverse visual effects on nearby properties. Where significant residual effects have been identified (moderate or above) they are highlighted in yellow in **Table 16.1** and the level of significance is reported. For non-significant effects (neutral, negligible or minor) the level of significance has not been included in **Table 16.1** to aid clarity. The criteria to determine 'significance in terms of EIA' for residual effects is defined in **Chapter 4 (Environmental Assessment Methodology)** of the **ES (Document Reference 6.3)** together with in each individual topic specific environmental **Chapters 5 -14** of the **ES.**

Table 16.1: Summary of Residual Effects

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Chapter 5 (Air quality) of the ES (Document Reference 6.1)			
	Construction			
5.1	Receptors sensitive to construction dust (e.g., residential properties and designated ecological sites)	Temporary effects due to emissions of dust during construction.	No	N/A
5.2	Construction phase traffic emissions (e.g., receptors sensitive to vehicle emissions)	Temporary effects due to vehicle emissions during construction.	No	N/A
	Operation			
	Human Receptors – NO_2			
5.3	Winchester City Centre	At 11 receptors within Winchester City Centre (R01, R02, R03, R04, R05, R34, R35, R39, R40, R52 and R53), a perceptible improvement in annual average Nitrogen dioxide (NO_2) concentration is predicted	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		(reduction >1% of the air quality threshold) The decreases in annual average NO_2 concentrations primarily occur within Winchester City Centre as a result of decreased traffic flows on the B3420 and Bar End Road; this is considered to be a consequence of the increased capacity at M3 Junction 9 delivered by the Scheme.		
5.4	Easton Lane/Wales Street/B3404	Within Winchester City, the traffic model predicts that flows would increase on Easton Lane, Wales Street and a section of the B3404. The maximum predicted increase in annual average NO_2 concentration occurs at R41 located along Wales Street. However, this increase in overall concentration is 26.9µg/m^3 which is well below the air quality threshold of 40µg/m^3.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
5.5	M3 Corridor (Winchester)	At 4 receptors (R10, R28, R47 and R48) located in proximity to the M3 Junction 9 and Junction 11 and north of M3 Junction 9, there are imperceptible increases in annual average NO_2 concentrations (increase <1% of the air quality threshold).	No	N/A
5.6	M3 Corridor (south of Winchester)	At 8 receptors (R18, R19, R20, R21, R22, R23, R24 and R54) in proximity to the M3 Junction 9 and Junction 11 and north of M3 Junction 9, imperceptible increases in annual average NO_2 concentrations are predicted (increase <1% of the air quality threshold). Overall concentrations are well below the air quality threshold of 40µg/m^3.	No	N/A
5.7	Kings Worthy (A34 and A33)	At the 7 receptors (R11, R12, R13, R43, R45 and R46 and R51) located on the A34 between M3 Junction 9 and the A272 junction and in proximity to the A33,	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		imperceptible decreases in annual average NO_2 concentrations are predicted (decrease <1% of the air quality threshold) due to reduced emissions resulting from less congestion. Overall concentrations are well below the air quality threshold of 40µg/m^3.		
5.8	A34 corridor (north of Winchester)	At the 6 receptors (R14, R15, R16, R17, R33 and R42) located in proximity to the A34 (between the A272 junction and the A303), imperceptible increases in annual average NO_2 concentrations are predicted, however overall concentrations are well below the air quality threshold of 40µg/m^3.	No	N/A
5.9	East of Winchester (A272 and B3047)	At 3 of the receptors (R29, R31 and R32) located in proximity to the A272 (east of the A31 interchange), imperceptible increases in annual average NO_2 concentrations are predicted (increase <1% of the air quality threshold). At R30, an	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		increase of 0.5µg/m^3 is predicted, however all overall concentrations are well below the air quality threshold of 40µg/m^3. At the 2 receptors (R37 and R38) located in proximity to this section of the B3047, imperceptible decreases in annual average NO_2 concentrations are predicted (decrease <1% of the air quality threshold) and overall concentrations are well below the air quality threshold of 40µg/m^3.		
5.10	Human receptors – PM_{10} and $PM_{2.5}$	The changes in annual mean PM_{10} concentrations are classified as imperceptible at all except for 6 receptors. Predicted annual average PM10 impacts at R07, R41, R49 and R50 increase by >1% of the air quality threshold and at R04 and R35, decrease by more than 1% of the threshold. However, all	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		concentrations are less than 20µg/m^3.		
5.11	Designated Habitats	Air Quality impacts on designated habitats (due to nitrogen deposition) is considered in **Chapter 8 (Biodiversity)** of the **ES (Document Reference 6.1)** and the likely significance of effects on European designated habitats (e.g River Itchen SAC) is considered in the **Habitats Regulations Assessment (Document Reference 7.5)**. The predicted changes in nitrogen deposition were <1% of the critical load for the majority of receptor locations and therefore impacts are considered not significant. The competent expert for Biodiversity has considered the potential for adverse impacts where the increase in nitrogen deposition exceeds the 1% threshold and 0.4	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		kgN/ha/yr. The competent expert for Biodiversity has concluded that the predicted impacts are not significant at any designated sites.		
	Chapter 6 (Cultural Heritage) of the ES (Document Reference 6.1)			
	Construction			
	Designated Archaeological Remains			
6.1	Roman road east of St Catherine's Hill	No direct or indirect impacts.	No	N/A
6.2	Anglo-Saxon cemetery in Worthy Park	No direct or indirect impacts.	No	N/A
6.4	The late Iron Age settlement site north of Grace's Farm	No direct or in direct impacts.	No	N/A
6.5	The site of St Gertrude's Chapel	Some construction activities likely to be partially visible and audible from the Scheduled Monument, affecting a small part of the wider setting but	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		would not alter the overall character.		
6.6	Wolvesey Palace	No direct or indirect impacts.	No	N/A
6.7	The Iron Age field system, banjo enclosure and Romano-British villa, 500m east of Woodham Farm	No direct or indirect impacts.	No	N/A
6.8	St Catherine's Hill hillfort	No direct or indirect impacts.	No	N/A
6.9	The round barrow cemetery on Magdalen Hill Down	No direct or indirect impacts.	No	N/A
6.10	City Bridge at the junction of High Street and Bridge Street	No direct or indirect impacts.	No	N/A
	Non-designated Archaeological Remains			
6.11	Surviving remains of the Neolithic/ Bronze Age ring ditch (SRN 71) several discrete and possible prehistoric pits found during recent evaluation (SRN 55)	Receptors would be completely removed during construction of the Scheme. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))		
6.12	Post-medieval field boundaries and parish boundaries found during recent evaluation (SRN 55)	Receptors would be partially or completely removed during construction of the Scheme. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A
6.13	An undated ring ditch (SRN 75) thought to date to the prehistoric period but most likely relates to an area of quarrying.	Receptor would be completely removed during construction of the Scheme. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.14	Two Roman roads, the projected routes of which cross the Application Boundary	Construction activities adjacent to Kings Worthy might impact upon a very small part of the projected roman road which follows the A33 and extends beyond the Application Boundary. No works are proposed in the area of the road which follows the B3404 and therefore there would be no impact upon this receptor.	No	N/A
6.15	Geophysical anomalies - possible Anglo-Saxon settlement (SRN 214)	Exact location and extent of receptor currently unknown. In a worst-case scenario, the receptor would be completely removed. However, this would be mitigated via a programme of archaeological recording which will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A
6.16	Water meadows (SRN 186,187, 188, 190, 192, 193, 194, 196)	Construction activities could impact upon a very small part of the waters which extend beyond the	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Application Boundary. This would be mitigated via a programme of archaeological recording which will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))		
6.17	Watermill and pond to the south of Kings Worthy	Presence of receptor within the Application Boundary is currently unknown. If remains are present, they are likely to have been significantly impacted upon by the construction of A33. Minor works in this area could damage any surviving remains which might be present. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.18	The former Didcot, Newbury and Southampton Railway line (SRN 160, 161, 163)	Construction activities would impact upon a small part of the receptor which extends beyond the Application Boundary. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A
6.19	Area of flint and dark clay (SRN 213)	Presence and extent of feature within the Application Boundary is currently unknown. In a worst-case the receptor would be completely removed. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A
6.20	Previously excavated remains directly adjacent to the M3 and	Archaeological remains would be completely removed during construction of the Scheme.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	detected during the 2021 geophysical survey	However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))		
6.21	Other archaeological features identified during geophysical survey and trial trenching in 2021	Archaeological remains would be completely or partially removed during construction of the Scheme. However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))	No	N/A
6.22	As yet unidentified archaeological remains (including paleoenvironmental and waterlogged deposits)	Archaeological remains completely within the Application would be removed during construction whilst those extending beyond the Application Boundary would be partially removed during the construction of the Scheme.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		However, a programme of archaeological recording will be undertaken in accordance with the Archaeology and Heritage Outline Mitigation Strategy (**Appendix 6.8** of the **ES** (**Document Reference 6.3**))		
	Designated Built Heritage Assets			
6.23	Winchester Conservation Area	No direct or indirect impacts.	No	N/A
6.24	Grade I Listed Buildings - Church of St Mary NHLE: 1095898, City Bridge NHLE: 1167781, Church of St John the Baptist NHLE: 1296158, Church of St Swithin NHLE: 1350461	No direct or indirect impacts.	No	N/A
6.25	Grade II* Listed Worthy Park House NHLE: 1095892	Long distance views of a small part of the main works between the A34 and M3 but in general construction activities unlikely to be visually or audibly noticeable.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.26	Other grade II* listed buildings - Church of St Mary NHLE: 1156360, Dymoke House NHLE: 1095857, Church of St Swithun NHLE: 1350471, 1 Water Lane NHLE: 1095347, 24 and 25 St John's Street NHLE: 1095386, St John's Croft NHLE: 1095387, Peter's Theatre NHLE: 1095502, 42 Chisel Street NHLE: 1271527, 1 Chisel Street NHLE: 1350648, 12 Chisel Street NHLE: 1350651	No direct or indirect impacts.	No	N/A
6.27	Kings Worthy Conservation Area and associated Grade II listed buildings	Construction works within the eastern end of the conservation area would not impact upon key elements of the conservation area. The A33 is a busy road within the setting of the conservation area and construction activities would not significantly alter this.	No	N/A
6.28	Abbots Worthy Conservation Area and associated Grade II listed buildings	Works along the A33 would not affect the setting of the conservation area. Construction	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		activities within the conservation areas setting may be visible and audible from the southern part of the conservation area.		
6.29	Easton Conservation Area and associated Grade II listed buildings	No direct or indirect effects.	No	N/A
6.30	Martyr Worthy Conservation Area and associated Grade II listed buildings	No direct or indirect effects.	No	N/A
6.31	Other Grade II listed buildings located beyond the conservation areas	No direct or indirect effects.	No	N/A
	Non-designated Built Heritage Assets			
6.32	Abbots Worthy House	The construction of the Scheme is likely to be largely screened in views from the house and would not be experienced in relation to it. Therefore, the construction phase of the Scheme would not impact the setting of the listed building.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.33	Fulling Mill Cottage	Construction traffic is likely to access the main works area between the A34 and M3 via Long Walk and construction activities in this area which is considered to be part of the buildings wider setting are likely to be partially visible and audible.	No	N/A
	Non-designated Historic Landscapes			
6.34	Abbots Worthy House Historic Park and Garden (HPG)	Minor construction works along the A33 would be visible and audible, but the setting would not be significantly altered.	No	N/A
6.35	Worthy Park HPG	Long distance views of a small part of the main works between the A34 and M3 but in general construction activities unlikely to be visually or audibly noticeable.	No	N/A
6.36	Kings Worthy Court HPG, Kings Worthy House HPG, Kings Worthy Grove HPG, Northleigh	No direct or indirect effects.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	HPG, Hinton House HPG Morton House HPG			
6.37	River Valley – water meadows	Change to a very small part of the receptors which extend beyond the Application Boundary and would not alter the overall character.	No	N/A
6.38	Valley Floor - marsh and rough grazing	Change to a very small part of the receptors which extend beyond the Application Boundary and would not alter the overall character.	No	N/A
6.39	Old settlement – village/ hamlet 1810 extent	Change to a very small part of the receptors which extend beyond the Application Boundary and would not alter the overall character.	No	N/A
6.40	Downland	Direct impacts and soil stripping in this area to create new infrastructure and chalk grassland. Would still be appreciable as an area of downland.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.41	Parliamentary fields – medium regular fields with straight boundaries	Direct impact and change of character to a large area of the much larger receptor which extends beyond the Application Boundary.	No	N/A
6.42	Parliamentary fields – large regular fields with straight boundaries and prairie fields	No direct or indirect impacts.	No	N/A
6.43	Recent settlement – post 1810 settlement	Change to a very small part of the receptors which extend beyond the Application Boundary and would not alter the overall character.	No	N/A
6.44	Valley Floor – Miscellaneous valley bottom paddocks and pastures	No direct or indirect impacts.	No	N/A
6.45	Important hedgerows along Easton Lane Long Walk	A small section of the receptors, which extend beyond the Application Boundary, would be removed.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Operation			
	Designated Archaeological Remains			
6.46	Roman road east of St Catherine's Hill	No direct or indirect impacts.	No	N/A
6.47	Anglo-Saxon cemetery in Worthy Park	No direct or indirect impacts.	No	N/A
6.48	The late Iron Age settlement site north of Grace's Farm	No direct or in direct impacts.	No	N/A
6.49	The site of St Gertrude's Chapel	Scheme largely screened although possible glimpsed views of several new signs. General character of the surroundings would be retained but change to a small part of the wider setting.	No	N/A
6.50	Wolvesey Palace	No direct or indirect impacts.	No	N/A
6.51	The Iron Age field system, banjo enclosure and Romano-British villa	No direct or indirect impacts.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.52	St Catherine's Hill hillfort	No direct or indirect impacts.	No	N/A
6.53	The round barrow cemetery on Magdalen Hill Down	No direct or indirect impacts.	No	N/A
6.54	City Bridge at the junction of High Street and Bridge Street	No direct or indirect impacts.	No	N/A
	Non-designated Archaeological Remains			
6.55	Surviving remains of the Neolithic/ Bronze Age ring ditch (SRN 71) several discrete and possible prehistoric pits found during recent evaluation (SRN 55)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.56	Post-medieval field boundaries and parish boundaries found during recent evaluation (SRN 55)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.57	An undated ring ditch (SRN 75) thought to date to the prehistoric period but most likely relates to an area of quarrying.	No residual effects identified as they would have occurred during the construction phase.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.58	Two Roman roads, the projected routes of which cross the Application Boundary	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.59	Geophysical anomalies - possible Anglo-Saxon settlement (SRN 214)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.60	Water meadows (SRN 186,187, 188, 190, 192, 193, 194, 196)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.61	Watermill and pond to the south of Kings Worthy	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.62	The former Didcot, Newbury and Southampton Railway line (SRN 160, 161, 163)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.63	Area of flint and dark clay (SRN 213)	No residual effects identified as they would have occurred during the construction phase.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.64	Previously excavated remains directly adjacent to the M3 and detected during the 2021 geophysical survey	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.45	Other archaeological features identified during geophysical survey and trial trenching in 2021	No residual effects identified as they would have occurred during the construction phase.	No	N/A
6.46	As yet unidentified archaeological remains (including paleoenvironmental and waterlogged deposits)	No residual effects identified as they would have occurred during the construction phase.	No	N/A
	Designated Built Heritage Assets			
6.47	Winchester Conservation Area	No direct or indirect impacts.	No	N/A
6.48	Grade I Listed Buildings - Church of St Mary NHLE: 1095898, City Bridge NHLE: 1167781, Church of St John the Baptist NHLE: 1296158, Church of St Swithin NHLE: 1350461	No direct or indirect impacts.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
6.49	Grade II* Listed Worthy Park House NHLE: 1095892	Scheme would be largely screened although there may be some glimpsed views of new signage seen in the context of existing infrastructure. Change to the wider setting but no alteration to the existing character experienced from the listed building.	No	N/A
6.50	Other grade II* listed buildings - Church of St Mary NHLE: 1156360, Dymoke House NHLE: 1095857, Church of St Swithun NHLE: 1350471, 1 Water Lane NHLE: 1095347, 24 and 25 St John's Street NHLE: 1095386, St John's Croft NHLE: 1095387, Peter's Theatre NHLE: 1095502, 42 Chisel Street NHLE: 1271527, 1 Chisel Street NHLE: 1350648, 12 Chisel Street NHLE: 1350651	No direct or indirect impacts.	No	N/A
6.51	Kings Worthy Conservation Area and associated Grade II listed buildings	Operation of the Scheme would not impact upon key elements of the conservation area. The A33 is a	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		busy road within the setting of the conservation area and whilst the operation would result in increase in traffic there would not be an increase in noise. Minor changes to the largely modern setting.		
6.52	Abbots Worthy Conservation Area and associated Grade II listed buildings	No direct impacts during operation. Once completed the works along the A33 would not affect the setting of the conservation area. Green buffer between conservation area and infrastructure maintained by minor change to the setting.	No	N/A
6.53	Easton Conservation Area and associated Grade II listed buildings	No direct or indirect effects.	No	N/A
6.54	Martyr Worthy Conservation Area and associated Grade II listed buildings	No direct or indirect effects.	No	N/A
6.55	Other Grade II listed buildings located beyond the conservation areas	No direct or indirect effects.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Non-designated Built Heritage Assets			
6.56	Abbots Worthy House	The Scheme would not impact the setting of the listed building.	No	N/A
6.57	Fulling Mill Cottage	The Scheme would not be perceptible either visually or audibly from the non-designated built heritage asset.	No	N/A
	Non-designated Historic Landscapes			
6.58	Abbots Worthy House HPG	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.59	Worthy Park HPG	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.60	Kings Worthy Court HPG, Kings Worthy House HPG, Kings Worthy Grove HPG, Northleigh	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	HPG, Hinton House HPG Morton House HPG			
6.61	River Valley – water meadows	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.62	Valley Floor - marsh and rough grazing	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.63	Old settlement – village/ hamlet 1810 extent	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.64	Downland	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.65	Parliamentary fields – medium regular fields with straight boundaries	No residual effects identified as effects to the receptor would have	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		occurred during the construction phase.		
6.66	Parliamentary fields – large regular fields with straight boundaries and prairie fields	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.67	Recent settlement – post 1810 settlement	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.68	Valley Floor – Miscellaneous valley bottom paddocks and pastures	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A
6.69	Important hedgerows along Easton Lane Long Walk	No residual effects identified as effects to the receptor would have occurred during the construction phase.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Chapter 7 (**Landscape and Visual**) of the **ES** (**Document Reference 6.1**)			
	Construction			
	Designated Landscapes			
7.1	South Downs National Park	The construction activities of the Scheme would impact the special qualities of the South Downs National Park.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.2	Magdalen Hill Cemetery Grade II Registered Park and Garden (RPG)	No change.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
7.3	Avington Park Grade II* RPG	No change.	No	N/A
7.4	Worthy Park	Indirect / experiential	No	N/A
7.5	Protected trees and vegetation (Tree Preservation Orders (TPOs) and Important Hedgerows)	Direct	No	N/A
	South Downs National Park Landscape Character Areas (LCA)			
7.6	LCA A5: East Winchester Open Downs	The construction activities of the Scheme would impact the character areas of the South Downs National Park.	Yes – large adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				fiEMP (**Document Reference 7.3**)
7.7	LCA F5: Itchen Floodplain and LCA G5: Itchen Valley Sides	The construction activities of the Scheme would impact the character areas of the South Downs National Park.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
	Hampshire County LCAs and Townscape Character Areas (TCA)			
7.8	LCA 3C: Itchen Valley and LCA 8G: East Winchester Open Downs	The construction activities of the Scheme would impact the character areas of Hampshire County.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.9	Hampshire County LCA's/TCAs (8E, 7B, 7F, 5, 6a, 6b, 6c)	No change	No	N/A
7.10	Hampshire County LCA's/TCAs (8A)	Direct and indirect / experiential	No	N/A
	Landscape Character within the Application Boundary			
7.11	Land beyond the existing highway estate within the Application Boundary (all within the South Downs National Park)	The construction activities of the Scheme would impact the character areas of the South Downs National Park.	Yes – large adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects.

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.12	Landscape Character within the Application Boundary	Direct	No	N/A
	Landscape Features within the Application Boundary			
7.13	Topography	Activities that would alter the topography during the construction phase would comprise landform re-modelling, earthworks and engineered topography. This would impact the designated landscape.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				be found in the **fiEMP** (**Document Reference 7.3**)
7.14	Existing trees, woodlands and hedgerows	During the construction phase of the Scheme there would be loss of existing trees, woodlands and hedgerows to facilitate the Scheme. This would impact the designated landscape.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure compliance with the Arboricultural Method Statement and Tree Protection Plans (to be developed during detailed design).
7.15	Watercourses	The construction activities would include measures such as use of riverside farmland, loss of trees and scrub / shrubs and installation of bridge features and drainage	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		connections. This would impact watercourses as a landscape feature.		practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.16	Agricultural land	The construction activities would include conversion of arable farmland for construction compounds and new planting which would impact this landscape feature.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
7.17	PRoW network / local connectivity	The construction of the Scheme would have short-term effect on the tranquillity of routes crossing land within or close to the Application Boundary, especially activities that are close to construction activities.	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects. Further information on good practice measures and monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
	Visual Effects during Construction			
7.18	Visual effects during construction – View Location (VL)1	During construction there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2)**	Yes – very large adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				compliance with the **fiEMP** (**Document Reference 7.3**).
7.19	Visual effects during construction – VL3, VL8, VL14	During construction there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2)**	Yes – large adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure compliance with the **fiEMP** (**Document Reference 7.3**).
7.20	Visual effects during construction – VL4, VL6a, VL7, VL12, VL13, VL16, VL17	During construction there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2)**	Yes – moderate adverse	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				compliance with the **fiEMP** (**Document Reference 7.3**).
7.21	Visual effects during construction – VL2, VL5, VL6b, VL9, VL10, VL11, VL15, VL18, VL19, 19b VL20, VL21, VL22, VL23, VL24	During construction there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14** (**Visualisations**) of the **ES** (**Document Reference 6.2**)	No	N/A
	Operation – Winter Year 1			
	Designated Landscapes			
7.22	South Downs National Park	The operation of the Scheme could impact the special qualities of the South Downs National Park.	Yes – moderate adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				out in **Figure 2.3 (Environmental Masterplan)** of the **ES (Document Reference 6.2).** Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.23	Magdalen Hill Cemetery Grade II RPG	No change.	No	N/A
7.24	Avington Park Grade II* RPG	No change.	No	N/A
7.25	Worthy Park	Indirect/ experiential landscape effect.	No	N/A
7.26	Protected trees and vegetation (Tree Preservation Orders (TPOs) and Important Hedgerows)	Direct landscape effect.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	South Downs National Park LCAs			
7.27	LCA A5: East Winchester Open Downs and LCA G5: Itchen Valley Sides	The operation of the Scheme could impact the landscape character areas of the South Downs National Park.	Yes – moderate adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set out in **Figure 2.3 (Environmental Masterplan)** of the **ES (Document Reference 6.2).** Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	South Downs National Park Character Areas – LCA F5: Itchen Floodplain	Direct and indirect landscape effect.	No	N/A
	Hampshire County LCAs and TCAs			
7.28	Hampshire County LCAs and TCAs – LCA 3C, 8G, 8E, 7B, 7F, 8A, TCA 8A, 5, 6A, 6B	Direct and indirect landscape effect	No	N/A
	Landscape Character within the Application Boundary			
7.29	Land beyond the existing highway estate within the Application Boundary (within the South Downs National Park)	The operation of the Scheme could impact the landscape character areas of the South Downs National Park within the Application Boundary.	Yes – moderate adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set out in **Figure 2.3 (Environmental Masterplan)** of the **ES (Document**

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				Reference 6.2). Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.30	Landscape Character within the Application Boundary	Direct landscape effect.	No	N/A
	Landscape Features within the Application Boundary			
7.31	Topography	Direct landscape effect.	No	N/A
7.32	Existing trees, woodlands and hedgerows	During the construction phase of the Scheme there would be loss of existing trees, woodlands and hedgerows to facilitate the Scheme. These losses would be visible during the operation of the Scheme and would impact views.	Yes – moderate adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set out in **Figure 2.3**

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				(Environmental Masterplan) of the **ES (Document Reference 6.2).** Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.33	Watercourses	Direct and indirect/ experiential landscape effect.	No	N/A
7.34	Agricultural land	Direct landscape effect.	No	N/A
7.35	PRoW network	Direct and indirect/ experiential landscape effect.	No	N/A
	Operation – Summer Year 15			
	Designated Landscapes			
7.36	South Downs National Park	Direct and indirect / experiential landscape effect.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
7.37	Magdalen Hill Cemetery Grade II RPG	No change.	No	N/A
7.38	Avington Park Grade II* RPG Summer	No change.	No	N/A
7.39	Worthy Park	No change.	No	N/A
7.40	Protected trees and vegetation TPOs and Important Hedgerows	Direct landscape effect.	No	N/A
	South Downs National Park LCAs			
7.41	South Downs National Park LCAs (A5, F5, G5)	Direct and indirect / experiential landscape effect.	No	N/A
	Hampshire County LCAs and TCAs			
7.42	Hampshire County LCAs and TCAs (3C, 8G and 8a)	Direct and indirect / experiential landscape effect.	No	N/A
7.43	Hampshire County LCAs and TCAs (8E, 7B, 7F, 8a, 5, 6a, 6b, 6c)	No change.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Landscape Character within the Application Boundary			
7.44	Land within the Application Boundary which forms the existing highway estate	Direct landscape effect.	No	N/A
7.45	Land beyond the existing highway estate within the Application Boundary (all within the South Downs National Park)	Direct and indirect / experiential landscape effect.	No	N/A
	Landscape Features within the Application Boundary			
7.46	Topography	Direct landscape effects.	No	N/A
7.47	Existing trees, woodlands and hedgerows	Direct landscape effects.	No	N/A
7.48	Watercourses	Direct and indirect / experiential landscape effect.	No	N/A
7.49	Agricultural land	Direct landscape effects.	No	N/A
7.49	PRoW network	Direct and indirect / experiential landscape effect.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Visual Effects during Operation – Winter Year 1			
7.50	VL1	In Winter Year 1 there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2).**	Yes – large adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set out in **Figure 2.3 (Environmental Masterplan)** of the **ES (Document Reference 6.2).** Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
7.51	Visual effects – VL3, VL8, VL13, VL14, VL16, VL17 –Year 1 Winter	In Winter Year 1 there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2).**	Yes – moderate adverse	Quarterly inspection in the first two years, followed by annual inspections in the following three years after seeding/planting for all landscape mitigation as set out in **Figure 2.3 (Environmental Masterplan)** of the **ES (Document Reference 6.2).** Further information on monitoring requirements can be found in the **fiEMP** (**Document Reference 7.3**)
7.52	VL2, VL4, VL5, VL6(a), VL7, VL10, VL11, VL12, VL15, VL18, VL19, VL19(b), VL20, VL23	Direct	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
7.53	VL6(b), VL9, VL21, VL22, VL24	No change	No	N/A
	Visual Effects during Operation – Summer Year 15			
7.54	VL1	In Summer Year 15 there are anticipated to be visual effects due to visibility of the Scheme from these view locations (see **Figure 7.14 (Visualisations)** of the **ES (Document Reference 6.2).**	Yes – moderate adverse	Monitoring is undertaken during establishment as required to provide its function. However, at year 15 no further monitoring beyond standard maintenance and management as set out in the tiEMP.
7.55	VL2, VL3, VL4, VL5, VL6(a), VL7, VL8, VL10, VL11, VL12, VL13, VL14, VL15, VL16, VL17, VL19, VL19(b), VL20, VL23	Direct	No	N/A
7.56	VL6(b), VL9, VL18, VL21, VL22 and VL24	No change.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Chapter 8 (Biodiversity) of the ES (Document Reference 6.1)			
	Construction			
	European Designated Areas			
8.1	River Itchen Special Area of Conservation (SAC)	The River Itchen SAC is crossed by the Scheme via existing road bridges on the M3, A34 and A33. The Scheme also includes a new cycle and footbridge over the SAC between the existing Kingsworthy Bridge and Itchen and improvement/strengthening works to Kingsworthy Bridge. In addition, the surface water drainage system would require two new drainage outfalls into the SAC to be installed, and refurbishment of an existing outfall. Construction activities associated with these works have the potential to impact the SAC and associated habitats. For example, construction of three drainage outfalls as part of the Scheme would result in permanent	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		loss of existing riverbank. The predominant habitat along the riverbank is woodland and scrub which is not a qualifying feature of the SAC. Temporary vegetation clearance would also be required, however there would be no permanent loss or degradation of qualifying SAC habitats.		
8.2	Mottisfont Bats SAC	Given the distance from the Scheme (15km) and absence of impact pathways, there would be no change to this SAC of International importance.	No	N/A
	Other Statutory Designated Sites			
8.3	River Itchen Site of Special Scientific Interest (SSSI)	The SSSI designation includes a section of the M3 within the north-east of the Application Boundary. The only works currently proposed in this area are the installation of one Variable Message Sign within the highway verge. Construction works (including earthworks, pilling, and	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		spoil storage) have potential to result in short term temporary impacts from increased pollutants such as silt and dust, and as such, a reduction in water quality, which could result in degradation of SSSI habitats adjacent to the Scheme. A package of pollution prevention measures, designed to avoid increased pollution during construction have been set out in the **fiEMP** (**Document Reference 7.3**).		
8.4	St Catherine's Hill SSSI	No direct or indirect impacts on the SSSI are anticipated during the construction phase due to the distance from the Scheme (500m) and their physical separation.	No	N/A
	Non-statutory Designated Areas			
8.6	Easton Down Site of Importance for Nature Conservation (SINC)	Easton Down SINC is located partially within the Application Boundary, however the SINC would be fenced and protected at all times from construction activity resulting	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		in no direct impacts from habitat loss or fragmentation. There is potential for habitat degradation within the SINC from indirect construction impacts such as dust. Measures to control dust and other pollutants during construction are set out in the **fiEMP** (**Document Reference 7.3**).		
8.7	Other non-statutory designated sites	These sites fall outside the Application Boundary, and there would be no direct impacts from habitat loss.	No	N/A
8.8	Habitats	The construction phase of the Scheme would result in habitat losses and gains of both temporary and permanent nature. The initial loss of habitats is likely to result in a short-term impact to habitats of up to Local importance. In the medium-term, as the new habitats develop this would contribute to improving the local natural environment and supporting nationally and locally	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		important wildlife. Overall, there would be an increase in area of habitats of ecological value and the improvements in connectivity across ecological networks.		
8.9	Badgers	Construction works have the potential to impact the badger population. The population of badgers within the study area is considered to be of Less than Local importance, and as such an assessment of significance effects is not required. However, to accord with best practice, measures have been set out within **Section 8.8** of **Chapter 8** (**Biodiversity**) of the **ES** (**Document Reference 6.1**) and in the **fiEMP** (**Document Reference 7.3**) to avoid impacts to badgers through direct mortality.	N/A	Monitoring of the badger and dormice populations is necessary as part of the licencing requirements and would be agreed with Natural England. An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure compliance with the Landscape and

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				Ecological Management Plan (LEMP) and specific method statements.
8.10	Bats	The construction of the Scheme would result in the loss of woodland, scrub, and grassland which is likely to be used to a varying extent by the assemblage of bats recorded within the study area. Additionally, commuting and foraging bats may be disturbed by increased noise and light levels. Working measures detailed in the **fiEMP (Document Reference 7.3)** include measures to avoid light spill on bat commuting routes or foraging areas, in particular the River Itchen corridor.	No	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure compliance with the LEMP and specific method statements.
8.11	Hazel dormice	Construction of the Scheme would result in impacts to dormice through habitat loss and fragmentation. In advance of clearance of dormouse	No	Monitoring of the badger and dormice populations is

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		habitat, compensatory woodland and scrub planting would be provided within the Application Boundary. Hazel dormouse habitat loss would be compensated through provision of replacement of habitat on a minimum of a 1:1 scale. In addition, enhancement of retained dormice habitats would be undertaken.		necessary as part of the licencing requirements and would be agreed with Natural England. An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects and to ensure compliance with the LEMP and specific method statements.
8.12	Otter	It is likely that otters present in the vicinity of the Scheme would be habituated to existing levels of disturbance from light, noise and vibration associated with the highway network. Working measures set out in the **fiEMP**	No	An Environmental Manager would be provided on site during construction to ensure good practice to minimise effects

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		(**Document Reference 7.3**), including avoidance of night-time working (otters are predominantly nocturnal) would control potential impacts to otter from construction disturbance. Construction activities associated with the drainage outflows on the River Itchen may temporarily reduce permeability for otter along the southern bank of the river due to the presence of machinery and other equipment. Accidental pollution events during construction may cause impacts to the aquatic habitats or a reduction of prey. Pollution prevention measures included in the **fiEMP** (**Document Reference 7.3**) would avoid pollution impacts associated with the construction phase.		and to ensure compliance with the LEMP and specific method statements.
8.13	Water vole	Accidental pollution events during construction may cause impacts to	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		the aquatic habitats adjacent to the Scheme, in which water voles live. Water voles present in the vicinity of the Scheme (water voles are not present within the Application Boundary) would be habituated to existing levels of disturbance from light, noise and vibration associated with the highway network. Working measures set out in the **fiEMP** (**Document Reference 7.3**) would control potential impacts from construction disturbance.		
8.14	Birds (breeding and wintering)	Construction of the Scheme would result in temporary loss of habitats used by small number of notable breeding birds, including yellowhammer and skylark. The temporary loss of habitat during the construction phase would be offset by the improvement of habitats for farmland birds to the east of the M3. Birds using retained habitat within the Application Boundary may be	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		temporarily disturbed through noise or visual disturbance. Much of the retained habitat is already adjacent to existing highway with existing high background levels of disturbance Potential impacts to breeding birds through direct mortality would be avoided through the working methods set out in the **fiEMP** (**Document Reference 7.3**).		
8.15	Reptiles	Construction of the Scheme would result in the temporary loss of semi-natural habitat which supports reptiles, particularly the road verges and field margins. During the construction phase, reptiles would be displaced or moved to suitable retained habitats which would be enhanced for reptiles. The habitat lost during construction would be offset by the creation of a diverse mosaic of habitats within the Scheme. Prior to construction, a Reptile Mitigation Strategy would be	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		produced and implemented to make certain that reptiles are safeguarded throughout the construction phases. The Scheme may also result in the fragmentation of habitat. Any effects from fragmentation during construction would be offset by the creation of a new habitats within the Scheme, which would link retained habitats.		
8.16	Freshwater fish	To facilitate construction, temporary damming and dewatering of the River Itchen around each structure would be required. The temporary damming and dewatering would be localised around the drainage outfall, and extend approximately 5-10 meters along the riverbank, and across no more than 50% of the river. This process could result in direct mortality impacts to fish within the working area. However, mitigation is outlined in the **fiEMP** (**Document Reference 7.3**) which would avoid impacts through direct	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		mortality impacts to fish, the detail of which would be agreed with the Environment Agency and set out in full within the siEMP secured through DCO Requirement.		
8.17	Terrestrial invertebrates	Construction of the Scheme would result in the direct, permanent loss of habitats which are known to support notable terrestrial invertebrates. This loss of habitats would be offset through the creation of a mosaic of habitats within the Scheme, more varied and extensive than existing habitats to be lost.	No	N/A
8.18	Aquatic invertebrates	Habitat degradation through accidental pollution events during construction may cause impacts to the aquatic habitats in which aquatic invertebrates live. Pollution prevention measures included in the **fiEMP** (**Document Reference 7.3**) would avoid pollution impacts associated with the construction phase.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		The Scheme requires construction/refurbishment of three drainage outfalls on the bank of the River Itchen. To facilitate construction, temporary damming and dewatering of the River Itchen around each structure would be required. Mortality of white-clawed crayfish could arise during in-river working, if present in this section of the River Itchen. Mitigation measures are included in the **fiEMP** (**Document Reference 7.3**).		
8.19	Notable plants	Construction of the Scheme would result in the direct, permanent loss of habitats which are known to support notable plants, including five species listed on the red list of vascular plants for England, although all five species are relatively widespread in England. This loss of habitats supporting notable plants would be offset through the creation of a mosaic of habitats within the Scheme, more	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		varied and extensive than existing habitats to be lost.		
	Operation			
	European Designated Areas			
8.20	River Itchen SAC	There is potential for indirect impacts from pollution events such as traffic collisions with an associated reduction in water quality with subsequent effects to qualifying habitats and species. **Appendix 13.1** (**The Drainage Strategy Report**) of the **ES** (**Document Reference 6.3**) includes measures for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and are likely to be an improvement compared to the existing situation.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
8.21	Mottisfont Bats SAC	No change is predicted due to the distance between the SAC and the Scheme. There would be no direct or indirect impacts from operation of the Scheme.	No	N/A
	Other Statutory Designated Areas			
8.22	River Itchen SSSI	There is potential for habitat degradation associated with a reduction in water quality from pollution events such as traffic collisions. The mitigation measures set out in the **Drainage Strategy Report Appendix 13.1 (Document Reference 6.3)** for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and are likely to be an improvement compared to the existing situation.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Air quality modelling (**Chapter 5 (Air Quality) of the ES (Document Reference 6.1)**) shows effects from localised changes in air quality from the Scheme will be not significant to the River Itchen SSSI.		
8.23	St Catherine's Hill SSSI, River Test SSSI, Highclere Park SSSI, and River Kennet SSSI	Air quality modelling shows the localised changes in air quality from the Scheme to Cheesefoot Head SSSI, St Catherine's Hill SSSI, River Test SSSI, Highclere Park SSSI, and River Kennet SSSI, would result in temporary negligible impacts to these designated areas.	No	N/A
8.25	Other non-statutory designated areas (see **Appendix 8.1y ((Desk study report 2021)** of the **ES (Document Reference 6.3**)	The main potential for operational impacts would be through habitat degradation as a result of a reduction in air quality, principally nitrogen oxide and nitrogen deposition during operation. Air quality modelling of the Scheme (**Chapter 5 (Air Quality)** of the **ES** (**Document Reference 6.1**) and described in **Appendix 8.3**	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		(Assessment of Air Quality Effects to Biodiversity Receptors) of the **ES** (**Document Reference 6.3**)) has identified that for the majority of non-designated sites, increases in nitrogen are below the 1% threshold, or if above the 1% threshold, absolute changes are below 0.4 kg N/ha/yr. Where the assessment has identified increases above the 1% threshold and 0.4 kg N/ha/yr, further ecological assessment of potential effects to habitats has indicated there is unlikely to be loss of species diversity and therefore effects are **not significant** to non-statutory sites of county importance.		
8.26	Habitats	The main potential for operational impacts to the identified Habitats of Principal Importance (HPIs) and ancient woodland would be through habitat degradation as a result of a reduction in air quality, principally	No	During operation of the Scheme, essential mitigation in relation to important biodiversity

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		nitrogen oxide and nitrogen deposition. Localised changes in air quality are not anticipated to result in an appreciable change. There is potential for habitat degradation associated with a reduction in water quality from pollution events such as traffic collisions. The mitigation measures set out in **Appendix 13.1** (**The Drainage Strategy Report**) of the **ES** (**Document Reference 6.3**) for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and are likely to be an improvement compared to the existing situation.		receptors would include the management and monitoring of habitat creation and enhancement measures. Further details are provided within **Appendix 7.6 (Outline Landscape and Ecological Management Plan)** of the **ES** (**Document Reference 6.3**).
8.27	Badgers	The population of badgers within the study area is considered to be of less than Local importance, and as such an assessment of significance effects has not been provided. However, to accord with	N/A	Monitoring of the badger and dormice populations is necessary as part of the licencing

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		best practice, measures have been set out within **Section 8.8** of **Chapter 8** (**Biodiversity**) of the ES (**Document Reference 6.3**) and in the **fiEMP** (**Document Reference 7.3**) to avoid impacts to badgers through direct mortality.		requirements and would be agreed with Natural England.
8.28	Bats	Potential impacts to foraging and commuting bats during the operational phase could arise through direct mortality from collision with traffic as a result of increased traffic or traffic speed. However, bat activity within the Application Boundary is generally low and the risk of mortality to bats is unlikely to increase from the existing situation. Potential impacts to foraging and commuting bats during the operational phase could arise through disturbance from lighting. However, lighting has only been incorporated into the design of the Scheme within subways,	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		underpasses, and at two gantries over the M3 south of Junction 9, where it is essential for safety reasons. These are discrete areas none of which are likely to be of value to foraging and commuting bats. There would be no lighting elsewhere within the Scheme.		
8.29	Hazel dormice	There is potential for operational impacts to dormice during operational habitat management. However, **Appendix 7.6 (Outline Landscape and Ecological Management Plan) of the ES** (**Document Reference 6.3**) sets out measures to protect dormice during routine habitat maintenance, and as such there would be no impacts on dormice associated with the operational phase.	No	Monitoring of the badger and dormice populations is necessary as part of the licencing requirements and would be agreed with Natural England.
8.30	Otter	There is potential for operational impacts to otters through direct mortality resulting from collision with traffic. However, wildlife fencing	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		would be provided in key locations to separate wildlife, including otters, from the live highway network. There is potential for operational impacts to otters through noise disturbance during operation. Noise levels modelled at a location adjacent to the River Itchen at Itchen Bridge shown only very minor increases in noise levels.		
8.31	Water vole	Potential impacts to water voles could arise through habitat degradation associated with a reduction in water quality from pollution events such as traffic collisions. The mitigation measures set out in **Appendix 13.1** (**The Drainage Strategy Report**) of the **ES** (**Document Reference 6.3**) for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and are likely to	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		be an improvement compared to the existing situation.		
8.32	Birds (breeding and wintering)	Potential impacts to birds during the operational phase could arise through direct mortality from collision with traffic as a result of increased traffic or traffic speed. Potential impacts to birds during the operational phase could arise through disturbance from lighting. However, lighting has only been incorporated into the design of the Scheme at underpasses, and at two gantries over the M3 south of junction 9, underpasses, where it is essential for safety reasons. There would be no lighting elsewhere within the Scheme.	No	N/A
8.33	Reptiles	There is potential for operational impacts to reptiles from direct mortality during routine management of habitats within the Scheme, such as mowing and scrub clearance. However,	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Appendix 7.6 (Outline Landscape and Ecological Management Plan) of the ES (**Document Reference 6.3**) sets out measures to protect reptiles during routine habitat maintenance, which would avoid impacts to reptiles during the operational phase.		
8.34	Freshwater fish	Potential impacts to freshwater fish could arise through habitat degradation associated with a reduction in water quality from pollution events such as traffic collisions. The embedded mitigation measures set out in **Appendix 13.1** (**The Drainage Strategy Report**) of the **ES** (**Document Reference 6.3**) for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and are likely to be an improvement compared to the existing situation.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
8.35	Terrestrial invertebrates	There is potential for operational impacts to terrestrial Invertebrates during operational habitat management. However, the **Appendix 7.6 (Outline Landscape and Ecological Management Plan) of the ES** (**Document Reference 6.3**) sets out measures to avoid impacts to terrestrial Invertebrates during routine habitat maintenance.	No	N/A
8.36	Aquatic invertebrates	Potential impacts to aquatic invertebrates could arise through habitat degradation associated with a reduction in water quality from pollution events such as traffic collisions. The embedded mitigation measures set out in **Appendix 13.1** (**The Drainage Strategy Report**) of the **ES** (**Document Reference 6.3**) for managing surface water runoff from the road which includes provision of measures for treatment of surface water would avoid adverse operational impacts and	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		are likely to be an improvement compared to the existing situation.		
8.37	Notable plants	There is potential for operational impacts to notable plants during operational habitat management. However, the **Appendix 7.6 (Outline Landscape and Ecological Management Plan) of the ES** (**Document Reference 6.3**) sets out measures to avoid impacts to notable plants during routine habitat maintenance.	No	N/A
	Chapter 9 (Geology and soils) of the ES (Document Reference 6.1)			
	Construction			
9.1	Human health	The **Ground Investigation Report (Document Reference 7.11)** concludes that there is very low risk from existing potential contamination sources within the study area and therefore risks to construction workers and neighbours have not been	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		identified. Risks to construction workers from potential unexpected contamination would be adequately mitigated through the essential mitigation measures. For further information see **Chapter 9 (Geology and Soils) of the ES (Document Reference 6.1).**		
9.2	Controlled waters (groundwater and surface water)	Pollution releases during the construction phase have the potential to affect groundwater and surface water receptors. A potential effect of the construction of specific elements (such as piled foundations) of the Scheme is the mobilisation of any contamination present in made ground, and the creation of new preferential pathways for the migration of contamination to groundwater and surface water. A Tier 2 geoenvironmental risk assessment and GQRA for controlled waters, included within	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		the **Ground Investigation Report** (**Document Reference 7.11**) has been undertaken and concluded that there is a low risk of significant existing contamination within the Application Boundary and therefore a low risk to surface water and groundwater from existing potential contamination sources.		
9.3	Environmentally Sensitive Sites	Pollution releases during the construction phase have the potential to affect environmentally sensitive sites. However, the **Ground Investigation Report (Document Reference 7.11)** concludes that there is a low risk of significant existing contamination within the Application Boundary and therefore a low risk to environmentally sensitive sites from mobilisation of existing potential contamination sources.	No	N/A
9.4	Built Environment	The natural strata present within the study area are such that there is the	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		potential for naturally occurring geological hazards and other land stability constraints to be present which could affect the Built Environment. The engineering assessment and geotechnical risk register, within the **Ground Investigation Report (Document Reference 7.11)** indicates that there are suitable, appropriate and robust mitigation measures readily available to mitigate potential land stability risks.		
	Soil Resources			
9.5	Agricultural Land Grade 2 and 3	The construction of the Scheme would require the permanent acquisition of 18.7ha of Best Most Versatile agricultural land (11.8ha of ALC (Agricultural Land Classification ((ALC)) Grade 2 land and 6.9ha of Grade 3) and 8ha of grade 3b.	Yes – very large adverse (Grade 2), large adverse (Grade 3a) and moderate adverse (Grade 3b)	No monitoring is proposed as the effect cannot be mitigated other than through ensuring land take is minimised and ensuring appropriate compensation is

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				paid to the landowner.
9.6	Grade 4 Agricultural Land	The construction of the Scheme would require the permanent loss of 0.1ha of ALC Grade 4.	No	N/A
9.7	Agricultural Land - Temporary Loss	The Scheme would also require the temporary loss of land (ALC Grade 2, 3a and 3b) which would take soil out of agricultural use for the period of construction. The agricultural soil temporarily displaced by the Scheme would, after restoration, generally be able to fulfil its primary soil functions on-site and would be returned to its current ALC grade.	No	N/A
	Operation			
9.8	Human health	Potential impacts from the introduction of new potential contaminants to the environment as a result of spills during ongoing routine use of the motorway, together with major accidents has	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		the potential to affect end users and maintenance workers through exposure to fuels and oils etc.		
9.9	Controlled waters	Potential impacts from the introduction of new potential contaminants to the environment as a result of run off from spills during ongoing routine use of the motorway, together with major accidents has the potential to affect controlled waters (very high sensitivity) and also environmentally sensitive sites (very high sensitivity) through the introduction of potential contaminants to surface water and groundwater.	No	N/A
9.10	Soils	There would be no additional effects to soils during operation above those identified under construction effects	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Chapter 10 (Material assets and waste) of the ES (Document Reference 6.1)			
	Construction			
10.1	Material assets – overall material recovery	Given the worst-case scenario whereby 65,000m^3 (135,200 tonnes) of the excavated material is required to be disposed of via landfill, together with the remaining 5% of all other materials (18,014 tonnes), the recovery / recycling rate would be 85% which remains within the rate of 70-99% of non-hazardous Construction Demolition Waste.	No	N/A
10.2	Material assets – use of recycled material	The excavated material from within the Application Boundary that would be reused for construction of the Scheme is the 664,800t of topsoil, chalk, stone, sand, clay and gravel. As a percentage of the overall construction material requirement (1,025,072t) this represents 65%. This exceeds the regional target of 26%.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
10.3	Mineral safeguarding area	The Scheme is a non-minerals development and proposed to be located within an identified Mineral Safeguarding Area for sand and gravel. The parts of the Scheme which lie within the MSA boundary are predominantly existing highway land and the remaining land is sufficiently close to the highway that extraction of minerals in those areas would be inappropriate Therefore, it is unlikely that a significant volume of mineral would be sterilized by the Scheme.	No	N/A
10.4	Waste	It is anticipated that the majority of the excavated material that is generated by construction would be reused within the Application Boundary. There is the possibility of up to 65,000m^3 (135,200t) (included in inert waste) of spoil arising during construction which would need to be disposed of outside the Application Boundary to landfill.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Chapter 11 (Noise and vibration) of the ES (Document Reference 6.1)			
	Construction			
	Noise			
11.1	Residential	Approximately 135 receptors may experience changes in noise levels from construction activities. Measures outlined within the **fiEMP (Document Reference 7.3)** will be implemented to minimise effects.	Yes – moderate to large adverse	The methodology and location of the monitoring would be agreed with the Local Authority through the submission of a Section 61 application and the Noise and Vibration Monitoring Plan prior to the commencement of any works.
11.2	Community	Approximately five receptors may experience changes in noise levels from construction activities. Measures outlined within the **fiEMP**	Yes – moderate to large adverse	The methodology and location of the monitoring would be agreed with the

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		(Document Reference 7.3) will be implemented to minimise effects.		Local Authority through the submission of a Section 61 application and the Noise and Vibration Monitoring Plan prior to the commencement of any works.
11.3	Commercial	135 receptors may experience changes in noise levels from construction activities. Measures outlined within the **fiEMP (Document Reference 7.3)** will be implemented to minimise effects.	Yes – moderate adverse	The methodology and location of the monitoring would be agreed with the Local Authority through the submission of a Section 61 application and the Noise and Vibration Monitoring Plan prior to the

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				commencement of any works.
11.4	Kings Worthy Primary School and Princes Meads School	Both schools may experience a noise impact during the construction phase but this is anticipated to be minor or negligible and therefore not significant.	No	N/A
	Vibration			
11.5	Building damage	Vibration during the demolition and construction phases are primarily associated with piling activity and vibratory compaction during road surfacing. Only commercial properties have been identified to be within 100m of piling works and 30m of road surfacing works. It is not considered that vibration levels would reach 10mm/s PPV at any commercial property and therefore the risk of building damage due to vibration is very low.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Construction Traffic			
11.6	Major road network	Based on vehicles travelling along the major road network to access the site, noise levels are not anticipated to increase by 1dBA or more and therefore significant effects as a result of construction traffic noise are not anticipated.	No	N/A
11.7	Residents	In total, 1,318 residential dwellings are anticipated to experience noise impacts during traffic diversions at night. Based on the anticipated timings of the road closures, (i.e. not being over 15 days/nights in any 40 days/nights or 40 days/nights in six consecutive months) these impacts are not anticipated to be significant.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Operation			
	Opening Year (short-term)			
11.8	Dwellings – daytime (opening year)	As a result of increases in operational traffic along Easton Lane / Wales Street, there is potential for residential dwellings to experience an increase in noise at the opening year of the Scheme.	No	N/A
11.9	Dwellings – night-time (opening year)	As a result of increases in operational traffic along Easton Lane / Wales Street, there is potential for residential dwellings to experience an increase in noise at the opening year of the Scheme.	No	N/A
11.10	Dwellings – short term	There is potential for a reduction in traffic flows on the surrounding network as a result of the Scheme, causing short term decreases in noise at 2 dwellings.	Yes – moderate beneficial	No monitoring is proposed for this significant effect.

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
11.11	Dwellings – short term	There is potential for an increase in traffic as a result of the Scheme, causing short term increases in noise at 20 dwellings. These indirectly affected dwellings are anticipated to experience an increase in traffic flows on the surrounding road network, as a result of the Scheme.	Yes – moderate adverse	No monitoring is proposed for this significant effect.
11.12	Commercial receptors – short term	12 commercial receptors are anticipated to experience a noise decrease of more than 5dB due to the re-routing of traffic along the A34.	Yes – major beneficial	No monitoring is proposed for this significant effect.
11.13	Noise Important Areas (NIAs)	As a result of increases in operational traffic there is potential for NIAs to experience an increase in noise at the opening year of the Scheme.	No	N/A
11.14	Public rights of way (PRoWs) (opening year)	As a result of increases in operational traffic there is potential for PRoWs to experience an increase in noise at the opening	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		year of the Scheme. However the increase is anticipated to be < 1dB.		
11.15	Heritage assets (opening year)	As a result of increases in operational traffic there is potential for one scheduled monument, the Anglo-Saxon Cemetery to experience a negligible increase in daytime noise levels, and one scheduled monument to experience a minor increase in daytime noise levels, the Site of St Gertrude's Chapel.	No	N/A
11.16	Ecological receptors	As a result of increases in operational traffic there is potential for ecological receptors to experience an increase in noise at the opening year of the Scheme, however this is not anticipated to increase by more than 3dB.	No	N/A
	Future Year (long-term)			
11.17	Dwellings – daytime	As a result of increases in operational traffic there is potential	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		for residential dwellings to experience an increase in noise at the future year of the Scheme.		
11.18	Dwellings – night-time	As a result of increases in operational traffic there is potential for residential dwellings to experience an increase in noise at the future year of the Scheme.	No	N/A
11.19	Commercial	8 Commercial receptors are anticipated to experience a noise decrease of more than 5dB due to the re-routing of traffic along the A34, which with the Scheme, would be moved towards the east.	Yes – moderate beneficial	No monitoring proposed
11.20	Other noise sensitive receptors – daytime (i.e. schools and healthcare facilities)	As a result of increases in operational traffic there is potential for other noise sensitive receptors to experience an increase in noise at the future year of the Scheme.	No	N/A
11.21	Other noise sensitive receptors – night-time (i.e. schools and healthcare facilities)	As a result of increases in operational traffic there is potential for other noise sensitive receptors	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		to experience an increase in noise at the future year of the Scheme.		
11.22	NIAs	As a result of increases in operational traffic there is potential for NIAs to experience an increase in noise at the future year of the Scheme.	No	N/A
11.23	Public Rights of Way	As a result of increases in operational traffic there is potential for PRoWs to experience an increase in noise at the future year of the Scheme, however the increase is anticipated to be < 1dB.	No	N/A
11.24	Heritage Assets	As a result of increases in operational traffic there is potential for heritage assets to experience an increase in noise at the future year of the Scheme.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
11.25	Ecological receptors	As a result of increases in operational traffic there is potential for ecological receptors to experience an increase in noise at the future year of the Scheme. However, noise levels at ecological receptors are not anticipated to increase or decrease by more than 5dB.	No	N/A
	Chapter 12 (Population and human health) of the ES (Document Reference 6.1)			
	Construction			
	Private Property and Housing			
12.1	White Hill Cottage	A total of 213 sqm of land is required from White Hill Cottage. The land is required temporarily during construction, with rights over the land required permanently. Due to the temporary nature of the works, this is therefore defined a moderate adverse impact.	Yes - moderate adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document**

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				Reference 7.3) are adhered to.
12.2	Other private property and housing	Private property and housing in the wider study area (500 m from the Application Boundary) may experience indirect effects (e.g. change in environmental attribute such as noise).It is anticipated that the temporary impacts could result in a discernible change in attributes or environmental quality, resulting in a minor adverse impact, which when combined with the low sensitivity of these receptors, is identified as a slight level of effect. Management and mitigation measures are set out in the **fiEMP (Document Reference 7.3).**	No	N/A
	Community Land and Assets			
12.3	Hampshire and Isle of Wight Wildlife Trust	There would be a total of 58sqm of land permanently taken of trees, shrubbery and public footpath west of the M3, which is required for	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		construction of surface water drainage outfall. In addition, approximately 130 sqm would be temporarily taken of the River Itchen west of the M3. Both these parcels of land are owned by the Hampshire & Isle of Wight Wildlife Trust. This would primarily result in the loss of habitat rather than open space.		
12.4	Other community land and assets	Other community land and assets are expected to experience impacts due to changes in journey time reliability, resulting in slight levels of effect.	No	N/A
	Development Land and Businesses			
12.5	Winnall Industrial Estate including CEMEX	Temporary change to accessibility of the site in terms of journey time reliability along Easton Lane - the primary access route for the industrial estate. This would impact all users of the employment site.	Yes – very large adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				fiEMP (Document Reference 7.3) are adhered to.
12.6	Tesco Extra	Temporary change to accessibility of the site in terms of journey time reliability along Easton Lane - the primary access route for the industrial estate. This would impact all users of the employment site.	Yes – moderate adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.7	Keir Highways	Temporary change to accessibility of the site in terms of journey time reliability along Easton Lane - the primary access route for the industrial estate. This would impact all users of the employment site.	Yes – moderate adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Agricultural Land Holdings			
12.8	-Itchen Down Farm	Where permanent land take is required, there would be an impact to farm operations. It is anticipated that Itchen Down Farm and Winnall Down Farm would have large areas of land permanently impacted by the Scheme, which would result in a significant effect.	Yes – large adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.9	Winnall Down Farm	Where permanent land take is required, there would be an impact to farm operations. It is anticipated that Itchen Down Farm and Winnall Down Farm would have large areas of land permanently impacted by the Scheme, which would result in a significant effect.	Yes – large adverse	No additional monitoring. The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.10	The Dairy House and Fulling Mill Estate	The permanent land take required for the Dairy House and Fulling Mill Estate comprises of grassland and river rather than arable land.	No	N/A
	Public Rights of Way			
12.11	National Cycle Network Route 23	Due to the intrusive nature of the works required to construct the new gyratory abutments, there would be a period of time where the users would be required to be diverted from the existing route through the gyratory. From the eastern side of the gyratory, walking users would be diverted northwards along Easton Lane and Long Walk, then south towards Winnall via the Itchen Way.	Yes – major adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.12	Winchester Bridleway 502	As this bridleway runs along the NCN Route 23, it would experience the same impacts NCN Route 23 above.	Yes – major adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
				secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.13	Winchester Bridleway 520	As this bridleway runs along the NCN Route 23, it would experience the same impacts NCN Route 23 above.	Yes – major adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.14	A33 Southbound footpath	Due to realignment works this route would be lost during construction, although a new route along the proposed realignment would be provided once the Scheme is operational.	Yes – major adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.15	Easton Lane footpath	Due to the new gyratory arrangement this route would be lost during construction, although a new route along the proposed realignment would be provided once the Scheme is operational.	Yes – major adverse	The Environmental Manager would ensure during construction all relevant mitigation measures as secured in the **fiEMP (Document Reference 7.3)** are adhered to.
12.16	South Downs Way Footpath	Footpath will be used as a temporary diversion route.	No	N/A
12.17	Itchen Way	Footpath will be used as a temporary diversion route.	No	N/A
12.18	St. Swithun's Way	Footpath will be used as a temporary diversion route.	No	N/A
12.19	Headbourne Worthy Footpath 6	Footpath will be used as a temporary diversion route.	No	N/A
12.20	Headbourne Worthy Footpath 749	Footpath will be used as a temporary diversion route.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.21	Itchen Valley Footpath 20	Footpath will be temporarily stopped up during construction.	No	N/A
12.22	Itchen Valley Footpath 21	There will be no change to journey length during construction, however there may be temporary pedestrian management.	No	N/A
12.23	Itchen Valley Footpath 49	There will be no change to journey length during construction, however there may be temporary pedestrian management.	No	N/A
12.24	Kings Worthy Footpath 9	There will be no change to journey length during construction, however there will be a temporary uncontrolled pedestrian crossing/ footpath management		
12.25	Community, recreational, and education facilities	The construction phase is not anticipated to significantly inhibit access to community, recreational, and education facilities. While there is likely to be temporary increased journey time unreliability due to traffic management measures, this	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		would not majorly impact the overall accessibility to facilities. Construction workers on the Scheme are unlikely to increase pressure on the community, recreational, and education facilities as it is anticipated that these workers would continue to utilise their own local services.		
12.26	Green/open space	The diversions proposed would not limit access to open space. Users of the diverted routes would still benefit from access to the outdoor space these routes traverse and from the National Park as alternate routes are available.	No	N/A
12.27	Healthcare facilities	The construction phase is not anticipated to significantly inhibit access to healthcare facilities. While there is likely to be temporary increased journey time unreliability due to traffic management measures around the Scheme, this	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		would not majorly impact the overall accessibility to healthcare facilities.		
12.28	Transport and connectivity	The construction of the Scheme would necessitate construction traffic management, temporary diversions, and a reduction in journey time reliability. This is anticipated to delay public transport on Easton Lane and the surrounding area. Yet these impacts are not anticipated to affect the overall provision of public transport services in the wards within the human health study areas.	No	N/A
12.29	Safety of the existing road network	The construction phase is likely to introduce additional hazards to road users, including changes to the road layout, the presence of construction vehicles, and potential delays. The **Traffic Management Plan (Document Reference 7.8)** has been designed to minimise the	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		disruption to road users such that the anticipated impacts of the Scheme would be neutral and not significant during the construction phase.		
12.30	Ambient air quality	Properties located within 200m of construction activities have the potential to be adversely affected by construction dust. These effects would however be short term and with the application of industry best practice mitigation measures, as defined in the **fiEMP** (**Document Reference 7.3**), are not considered to be significant.	No	N/A
12.31	Ambient noise environment	Some residential areas located close to the Scheme are likely to experience temporary significant effects from demolition and construction noise and vibration resulting in negative health outcomes for the wards of St Michaels and St Bartholomew.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.32	Construction workers	Sources and pathways of potential pollution were identified in **Chapter 9 (Geology and Soils)** of the **ES (Document Reference 6.1).** The chapter concluded that risks to construction workers as a result of direct or indirect contact with contaminated materials is likely to be very low.	No	N/A
12.33	Landscape amenity (including light)	There would be short-term/ reversible changes to the local PRoW network due to diversions and closures are likely to occur during the construction phase. There would be short-term and reversible effects likely to occur from construction activities including movement of plant and machinery fitted with flashing beacons, and the installation and operation of construction compounds (including temporary fencing and lighting). These effects are likely to be short term	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Operation			
	Private Property and Housing			
12.34	White Hill Cottage	White Hill Cottage is anticipated to experience minor adverse impacts during the operational phase as there is a requirement to have a permanent right to cross the land, for the purposes of maintaining an electricity cable	No	N/A
12.35	Other Private Property and Housing	Private property and housing in the wider study area (500 m from the Application Boundary) may experience indirect effects (e.g. change in environmental attribute such as landscape amenity).	No	N/A
12.36	Community land and assets	None of the identified community assets would be directly affected during operation of the Scheme with impacts associated with land take having occurred during the construction stage.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.37	Development land and business – Winnall Industrial Estate including CEMEX	Permanent change to accessibility of the employment site in terms of a reduction in journey times for those who are accessing the site via M3 Junction 9.	Yes - moderate beneficial	No monitoring is proposed of this significant effect.
	Agricultural Land Holdings			
12.38	White Hill Cottage	There is a requirement to have a permanent right to cross the land at White Hill Cottage for the purposes of maintaining an electricity cable. It is anticipated that, for business as usual, there would be no need to access the land and therefore there would be limited impacts. However, there may be an occasional need to inspect or perform maintenance on the electricity cable, which may result in temporary disruption and disturbance to the occupiers.	No	N/A
12.39	Itchen Down Farm and Winnall Down Farm	The Scheme would result in a loss of approximately 324,874 sqm of agricultural land across 3 land holdings that are affected during	Yes – large adverse	No monitoring of this significant effect is proposed as once land take

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		operation of the Scheme. There is anticipated to be significant adverse effects on Itchen Down Farm and Winnall Down Farm.		is acquired compensation would be paid to the landowner.
	Public Right of Ways			
12.40	National Cycle Network Route 23	NCN Route 23 would be permanently altered to improve walking, cycling and other access beneath/around M3 Junction 9. The route that interacts with M3 Junction 9 would be realigned to improve accessibility and safety, reducing the severance created by the current M3 Junction 9 alignment.	Yes - moderate beneficial	No monitoring is proposed. It would be ensured that works are as per the detailed design.
12.41	Winchester Bridleway 502 and 520	Winchester Bridleways 502 and 520 would be permanently altered to improve walking, cycling and other access beneath/around M3 Junction 9.	Yes – moderate beneficial	No monitoring is proposed. It would be ensured that works are as per the detailed design.
12.42	Headbourne Worthy Footpath 6	The proposed walking and cycling route between Kings Worthy and	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Winnall along the A33 will connect into this footpath, providing greater connectivity for users.		
12.43	Kings Worthy Footpath 9	The proposed walking and cycling route between Kings Worthy and Winnall along the A33 will connect into this footpath, providing greater connectivity for users.	No	N/A
12.44	A33 Southbound footpath	The Scheme will provide a new footpath along the new alignment which will be safer and provide a more attractive walking environment than the existing arrangement.	Yes – moderate beneficial	No monitoring is proposed. It would be ensured that works are as per the detailed design.
12.45	Community, recreational and education facilities	The Scheme is anticipated to enhance the accessibility of community, recreational, and education facilities due to reduced congestion and greater journey time reliability.	No	N/A
12.46	Green/open space	The Scheme would deliver improvements to the path network	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		in the human health study area in terms of accessibility. This would make it easier for the population to access green/open space, including the South Downs National Park. These improvements would increase the accessibility of green/open space and would therefore result in a positive health outcome.		
12.47	Healthcare facilities	The Scheme is anticipated to result in positive health effects due to the increased accessibility of healthcare facilities.	No	N/A
12.48	Transport and connectivity	The Scheme would deliver improvements to the path and active travel network in the human health study area in terms of accessibility, including the NCN Route 23. While these improvements would improve the journey quality for pedestrians and cyclists, they are	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		not considered significant enough to increase the overall number of active travel journeys.		
12.49	Safety of the existing road network	The Scheme is forecast to lead to a reduction in the number of killed or seriously injured casualties.	No	N/A
12.50	Ambient air quality	The Scheme results in both increases and decreases in the annual average NO_2 concentrations at receptor locations. Where an increase is anticipated, the total predicted annual average NO_2 concentrations is not predicted to exceed air quality thresholds. The changes in annual PM_{10} concentrations are classified as imperceptible at all but 4 receptors, however overall concentrations are less than 20 µg/m^3.	No	N/A
12.51	Ambient noise environment	Adverse effects are anticipated at 20 dwellings based on the magnitude of impact in the short-	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		term (i.e. minor), sensitivity of dwellings (i.e. high) and exposure to absolute sound levels above the Significant Observed Adverse Effect Level (SOAEL) (see **Chapter 11 (Noise and Vibration)** of the **ES (Document Reference 6.1)** for further details). Of these, none are anticipated to be directly related to traffic using the Scheme, and 20 are anticipated to be indirectly related to the Scheme. These indirectly affected dwellings are anticipated to experience an increase in traffic flows on the surrounding road network, as a result of the Scheme. In the long-term, these effects are not considered to be significant, as the impact in the long-term is negligible, and where minor noise increases are anticipated at night, the absolute sound level at the receptor is below the SOAEL.		

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
12.52	Landscape amenity (including light)	There are beneficial long term and permanent operational effects from the changes to the PRoW network. There would also be negative effects arising from illumination of the culverted PRoW underpasses.	No	N/A
	Chapter 13 (Road drainage and the water environment) of the ES (Document Reference 6.1)			
	Construction			
	Surface Water			
13.1	River Itchen	Construction activities including the installation of new drainage outfalls and those associated with the construction of the new bridge over the Itchen and potential modifications to the Kings Worthy Bridge have the potential to impact on flow volumes, flow area and impacts on water quality due to the proximity of the works to the watercourse. Following mitigation outlined in **Chapter 13 (Road Drainage and Water**	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Environment) of the **ES (Document Reference 6.1)** and those outlined in the **fiEMP (Document Reference 7.3)**, construction activities would be unlikely to affect the integrity of the water environment. Flood Risk Assessment Permits (FRAP) for all works within 8m of River Itchen would be submitted to the Environment Agency prior to construction commencing.		
13.2	Nun's Walk Stream	No construction activities are proposed over the Nun's Walk Stream. Construction works associated with the Scheme would however be located within the vicinity of the watercourse and it is a WFD waterbody and tributary to the River Itchen. It is considered that the **Temporary Drainage Strategy (Appendix J)** of the **fiEMP (Document Reference 7.3)** and pollution control measures outlined in the **fiEMP (Document**	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		Reference 7.3) would ensure that there would be minimal impact on water quality of the Stream.		
13.3	River Itchen Navigation Canal	The River Itchen Navigation Canal is a heavily modified waterbody into which the River Itchen flows into. Therefore, any impacts on water quality in the River Itchen would pass downstream to the River Itchen Navigation Canal. The mitigation measures proposed in **Chapter 13 (Road Drainage and Water Environment)** of the **ES (Document Reference 6.1)** would ensure that effects on the River Itchen Navigation Canal are not significant.	No	N/A
13.4	Ordinary Watercourses	No works are proposed in the immediate vicinity of any ordinary watercourses; however, construction works would be taking place within the drainage catchment of the watercourses and therefore any changes in surface water runoff	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		water quality could impact this receptor. It is considered that following the inclusion of the mitigation including the **Temporary Drainage Strategy (Appendix J)** of the **fiEMP (Document Reference 7.3)** and pollution prevention measures, construction activities are unlikely to affect the integrity of the water environment.		
	Groundwater			
13.5	River Itchen Chalk Groundwater Body (Principal Aquifer-Seaford Chalk and Lewes Chalk)	Construction activities located above the Chalk aquifer could alter pathways for groundwater flow and cause an increase in groundwater pollution. The **Temporary Drainage Strategy (Appendix J)** of the **fiEMP (Document Reference 7.3)** for construction compounds and the wider Scheme would ensure minimal impacts on groundwater quality due to pollution control measures.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
13.6	Secondary Aquifer (Alluvium and River Terrace Deposits)	Construction activities located above the Secondary Aquifer could alter pathways for groundwater flow and cause an increase in groundwater pollution. Construction methods such as appropriate piling techniques (if required) to minimise the risk of mixing of aquifer bodies through the creation of new pathways forms part of the essential mitigation.	No	N/A
13.7	Flood Risk	The construction and installation of the new drainage outfalls (including short term damming and de-watering) is likely to cause short term localised impacts around the drainage outfall in relation to changes to flow volumes and flow area due to works taking place within the River Itchen watercourse channel and floodplain. Any reduction in floodplain storage would be temporary and works would take place when flows are low. FRAPs for all works within 8m	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		of River Itchen would be submitted to the Environment Agency prior to construction commencing.		
	Operation			
	Surface Water			
13.8	River Itchen	The impacts upon surface water quantity and quality are principally related to the drainage design of the Scheme. The proposed **Drainage Strategy (Appendix 13.1)** of the **ES (Document Reference 6.3)** represents an improvement in water quality when compared to existing conditions. It is considered that following the inclusion of mitigation outlined in **Chapter 13 (Road Drainage and Water Environment)** of **the ES (Document Reference 6.1)**, and the **fiEMP (Document Reference 7.3)** the permanent Scheme is unlikely to affect the integrity of the water environment.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
13.9	Nun's Walk Stream	The Scheme is not proposed to discharge directly to the Nuns Walk Stream; however, the watercourse is located in the catchment area of the Scheme. It is considered reasonable to conclude that the potential impacts associated with surface water quality in relation to the River Itchen would apply to the Nun's Walk Stream.	No	N/A
13.10	River Itchen Navigation Canal	The potential impacts associated with surface water quality in relation to the River Itchen and Nun's Walk Stream would apply to the River Itchen Navigation Canal. The proposed **Drainage Strategy (Appendix 13.1)** of the **ES (Document Reference 6.3)** represents an improvement in water quality when compared to existing.	No	N/A
13.11	Ordinary Watercourses	The potential impacts associated with surface water quality in relation to the main rivers would apply to the Ordinary Watercourses. The	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		proposed **Drainage Strategy (Appendix 13.1)** of the **ES (Document Reference 6.3)** represents an improvement in water quality when compared to existing.		
	Groundwater			
13.12	River Itchen Chalk Groundwater Body (Principal Aquifer- Seaford Chalk and Lewes Chalk)	A HEWRAT screening assessment and Detailed qualitative Risk Assessment (DQRA) has been undertaken as part of the Hydrogeological Risk Assessment in **Appendix 13.2** of the **ES (Document Reference 6.3).** The screening concluded that all but one proposed Extended Detention Basins (EDB) have a 'medium' risk to groundwater and one has a high risk. It is proposed that the high risk EDB would be lined, thus preventing discharge to groundwater. The DQRA undertaken to further assess the risk from the un-lined EDB's confirms that the acute risk from	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		soluble contaminants has been assessed as low. The contaminant concentrations in the EDBs as derived from the HEWRAT assessment are below the UK Drinking Water Standards and thus pose no significant risk to groundwater. The proposed drainage discharges runoff via a far greater area of infiltration over granular soils, which provides a betterment in risk to groundwater from the existing M3 Junction 9 drainage configuration. It is considered that following the inclusion of mitigation outlined in **Chapter 9 (Road Drainage and Water Environment)** of the **ES (Document Reference 6.1)** and the **fiEMP (Document Reference 7.3),** the permanent Scheme is unlikely to affect the integrity of the groundwater environment.		

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		No measurable impact upon the aquifer/chalk groundwater Water Framework Directive (WFD) body has been identified by HEWRAT/DQRA (both acute soluble and chronic sediment related pollutants) and risk of pollution from spillages has been assessed as less than 0.5%.		
13.13	Secondary Aquifer (Alluvium and River Terrace Deposits)	The impacts upon groundwater quantity and quality within the Secondary Aquifer are principally related to the drainage design of the Scheme. The drainage design and the HEWRAT assessment outlined in relation to the River Itchen Chalk Groundwater Body applies to the consideration of impacts on the Secondary Aquifer and therefore the same conclusions can be drawn.	No	N/A
13.14	Flood Risk	The Scheme does not encroach upon floodplain and therefore	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		floodplain storage is not impacted as a result of the Scheme.		
	Chapter 14 (Climate) of the ES (Document Reference 6.1)			
	Construction			
14.1	Greenhouse Gas Emissions	During construction, the main source of GHG emissions is anticipated to be associated with construction materials and embodied carbon.	No	Quarterly GHG emission returns during construction shall be reported in accordance with National Highway's requirements. This is outlined within the **fiEMP** (**Document Reference 7.3)**.
	Operation			
14.2	Greenhouse Gas Emissions	During operation, the main source of GHG emissions is from 'end-users' i.e., traffic. Emissions from subway lighting, CCTV, VMS and maintenance would contribute a	No	Quarterly GHG emission returns during operation shall be reported in accordance with

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		relatively small amount to the overall operational carbon emissions. The Scheme is expected to contribute approximately 0.002% of the UK's 4th carbon budget and 0.001% of the 5th and 6th carbon budget. This is considered a small increase in the magnitude of emissions from the Scheme, and it is deemed unlikely that this Scheme, in isolation, would materially affect the UK's ability to meet its carbon budgets. Therefore, is not anticipated to give rise to a significant effect on climate, in line with the position set out within Section 5.18 of the NPS NN and the DMRB LA 114 Climate (Highways England, 2021).		National Highway's requirements. This is outlined within the **fiEMP** (**Document Reference 7.3)**.
	Vulnerability to Climate Change			
14.3		High temperatures may induce greater stress and increased risk of	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
	Structures including bridges (foundations, bearings, joints, structural drainage)	deterioration, which may increase need for maintenance and repairs.		
14.4		Changes in ground water level may result in larger ground movement/ heave, which in turn may result in additional stress on structure, causing failure of components. This may increase need for maintenance and repairs or inaccessibility to the Scheme.	No	N/A
14.5		Increased risk of flooding and blockages, affecting large areas and causing disruption. This may increase need for maintenance and repairs or inaccessibility to the Scheme.	No	N/A
14.6		Potential minor loading on smaller structures, such as gantries. Anticipated that impact on bridges should be limited as wind is rarely a dominant load.	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
14.7	Pavements / Road Surfaces (foundations, materials, embankments)	Greater risk of surface failure or deterioration. Concrete pavements can curl/warp as a result of internal stresses caused by thermal gradients. This may increase need for maintenance and repairs or inaccessibility to the Scheme.	No	N/A
14.8		Changes in groundwater level and soil moisture may result in premature pavement failure, substantial deformation, and heaving and subsiding. This may increase need for maintenance and repairs or inaccessibility to the Scheme.	No	N/A
14.9		Risk of flooding.	No	N/A
14.10	Drainage (surface water drainage systems, cross-culverts, road-edge drainage, attenuation, outfalls, drainage ditches)	Greater risk of damage to drainage network, overloading of drainage network and flooding. In turn impacts performance of network e.g., increased risk of congestion and accidents, increased rates of deterioration of assets and	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		increased risk of pollution to watercourses and groundwater.		
14.11		Lower levels of drain dilution which would be more concentrated with pollutants due to receiving water courses carrying less water.	No	N/A
14.12	Signage (stability)	Potential for damage to signage from increased wind speeds.	No	N/A
14.13	End users (walkers, cyclists and horse-riders (WCH), drivers)	Increased risk of vehicles breaking down/ overheating or vehicle fires. Risk to road users unable to exit the network if stuck in a queue at a time of extreme temperature. Risk to health of WCH during heatwaves.	No	N/A
14.14		Increased risk of more incidents caused by ice including skidding vehicles, traction-related incidents and losing control on standing water.	No	N/A
14.15		Increased risk of flooding may need to open up diversion routes	No	N/A

Reference	Receptor	Residual Effect	Significant in terms of EIA?	Additional monitoring required?
		increased risk of local authority routes gridlock. Increased risk of flooding may also cause areas of the footway and cycle route to be inaccessible.		
14.16		Increased risk of needing to close structures to high sided vehicles more frequently.	No	N/A
14.17	Landscape and Ecology	Impact on productivity, function, and structure of ecosystem services by, for example, causing an increase in erosion as soils and substrates dry out.	No	N/A
14.18		Increased risk of flooding has the potential to damage planting and habitats on land within the Application Boundary.	No	N/A