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6.2 ENVIRONMENTAL STATEMENT CHAPTER 17 SUMMARY

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

A30 Chiverton to Carland Cross
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6.2 ENVIRONMENTAL STATEMENT

CHAPTER 17 SUMMARY

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17.1 Introduction

17.1.1 This chapter summarises the findings of the impact assessments reported in this Environmental Statement (ES). To aid in understanding the summary findings, the following sections outline some assessment fundamentals.

17.2 Significance of effects

17.2.1 The significance of environmental effects is largely defined by reference to two key factors:

- the 'value' or 'sensitivity' of the receptor; and
- the 'magnitude' or 'scale' of the impact.

17.2.2 For most topics the significance of an effect is described on a five point scale from neutral to slight to moderate to large to very large (further details on the approach to the EIA can be found in **Approach to EIA** (Volume 6 Document Ref 6.2 ES Chapter 4)). In this assessment, an effect is considered to be significant if it is moderate or greater.

17.2.3 Some topics in this assessment have used a different approach to assessing the level of significance in accordance with discipline specific best practice guidance. These include:

- Air Quality;
- Landscape;
- Ecology and Nature Conservation;
- Noise and Vibration; and
- Climate Change.

17.2.4 The specific approach applied to each environmental topic is fully described in the assessment chapters in Volume 6 Document Ref 6.2 ES Chapters 5 to 14. In all cases, the assessment is based on the worst case.

17.3 Mitigation

17.3.1 Measures to mitigate the effects of the scheme have been identified and included. These mitigation measures have been taken into account in the assessment of residual effects for each topic.

17.4 Residual effects

17.4.1 Following implementation of mitigation, the environmental effects envisaged to remain are referred to as residual effects. These are described in each topic chapter in Volume 6 Document Ref 6.2 ES Chapters 5 to 14.

17.4.2 Some design features and mitigation measures may result in an environmental improvement. In these instances, the residual effect is recorded as 'beneficial'.

17.5 Summary of environmental effects

17.5.1 The impact assessments for each topic are presented in detail in Volume 6 Document Ref 6.2 ES Chapter 5 to ES Chapter 14. The likely significant effects

i.e. residual effects with a significance of moderate or greater, are tabulated in Table 17.1. The required mitigation measures are also outlined.

Table 17-1 Summary of significant residual environmental effects

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
Chapter 5: Air quality – none to report					
Chapter 6: Cultural Heritage					
Three Burrows scheduled monument.	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Milestone at SW771486 Grade II listed	Adverse	C	Temporary	Removal and storage	Large adverse effect
Bowl Barrow 100m south-west of Callestick Vean	Adverse	C	Long Term	No mitigation measures are proposed.	Moderate adverse effect
Bowl Barrow 100m south-west of Callestick Vean	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Nancarrow Farmhouse Grade II listed building	Adverse	C	Long Term	No mitigation measures are proposed.	Moderate adverse effect
Chyverton Park Grade II Registered Park & Garden	Adverse	C	Temporary	No mitigation measures are proposed.	Moderate adverse effect
Chyverton Park Lodge Grade II listed building	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Two bowl barrows north of Higher Ennis Farm	Adverse	C	Long term	Retaining wall provided to prevent direct physical impact on one of the barrows	Large adverse effect
Two bowl barrows north of Higher Ennis Farm	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Round barrow cemetery north-east of Higher Ennis Farm	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Milestone 253m south-west of Carland Cross Grade II listed	Adverse	C	Temporary	Removal and storage	Large adverse effect
Warren's Barrow scheduled monument	Adverse	C	Long term	No mitigation measures are proposed.	Moderate adverse effect
Warren's Barrow scheduled monument	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect
Prehistoric long barrow and four round barrows 580m and 750m south west of Mitchell Farm	Adverse	C	Temporary	No mitigation measures are proposed.	Very Large adverse effect

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
Chapter 7: Landscape					
Visual impact Residential receptors at Callestick Vean (south) (VP 6), Creegmeor Farm (VP 7), Hillview Farm (VP 8), Nanteague Farm (VP 10), bungalow at NFH (VP 13), Chyverton Park Lodge (VP 16), Polstain Farm (VP 20), Zelah Hill Cottage and Mount Pleasant (VP 21), Pennycomequick (VP 23), Journey's End, Racland House, and Four Winds (VP 24), and Ennis Farm and Higher Ennis Farm (VP 31).	Adverse	C	Temporary	No mitigation measures are proposed.	Moderate adverse effects
Visual impact Residential receptors at Marazanvose (VP 12), and Silverwell (VP 30).	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effects
Visual impact Recreational receptors using bridleway 314/64/1 (VP 6), bridleway 309/3/1 (VP 9), footpath 314/67/1 (VP 11), bridleway 319/9/1 (VP 17), footpath 319/16/1 (VP 15), Newlyn Downs Open Access Land (VP26, and NCR 32 near Henver Lane (VP20).	Adverse	C	Temporary	No mitigation measures are proposed.	moderate adverse effects
Visual impact People enjoying the views to and from heritage asset at Bowl Barrow (1016103) (VP 6).	Adverse	C	Temporary	No mitigation measures are proposed.	Moderate adverse effects
Visual impact	Adverse	C	Temporary	No mitigation measures are proposed.	Large adverse effect

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
People enjoying the views to and from heritage asset at the Barrow Cemetery at Carland Cross (1016888, 1017050, 1020758) (VP 27).					
Visual impact Transport receptors along the unclassified local road near Pennycomequick (VP 23)	Adverse	C	Temporary	No mitigation measures are proposed.	Moderate adverse effects
Visual impact Outdoor workers at NFH (VP 15).	Adverse	C	Temporary	No mitigation measures are proposed .	Moderate adverse effects
Visual impact Residential receptors at Callestick Vean (south) (VP 6) , Creegmeor Farm (VP 7), Hillview Farm (VP 8), Marazanvose (VP 12). bungalow at NFH (VP 13), Chyverton Park Lodge (VP 16), Polstain Farm (VP 20), Zelah Hill Cottage, Mount Pleasant, and Tregorlands (VP 21), Honeycombe Farm (VP 22) and Ennis Farm and Higher Ennis (VP 31)	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts and are shown in the Environmental Masterplan drawings at Vol 6 Doc Ref 6.3 ES Fig 7.6) . Callestick Vean (south) (VP 6) Reinforcement of extant hedgerows and the planting of a new hedgerow along the realigned southern boundary would reform the continuous hedgerow boundaries to the fields in keeping with the surrounding countryside. Deciduous woodland blocks would heavily filter and in parts, completely screen views of the road reducing the prominence of the scheme Creegmeor Farm (VP 7) and Hillview Farm (VP 8), Deciduous woodland within and surrounding the Chybucca junction would filter views to largely obscure the scheme and headlights from view,	Moderate adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				giving a slightly more wooded horizon along the ridgeline. Marazanvose (VP 12) Deciduous woodland and hedgerows would be planted on both sides of the scheme. This would create a separation between the existing and proposed A30 carriageways, reducing the prominence of the scheme for these receptors. Bungalow at NFH (VP 13) Deciduous woodland planting along the north and south sides of the road would create a ribbon of woodland along the ridgeline and largely filter views to the scheme. Chyverton Park Lodge (VP 16) More deciduous woodland planting would be introduced to the south of the new carriageway, immediately opposite the viewpoint location, designed to visually contain the new minor junctions and restore the local wooded character to the area. This would have reached heights of approximately 7m and would screen views to the Zelah bypass and the mainline carriageway of the scheme from view. Polstain Farm (VP 20)	

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				Woodland planting would create a greater sense of enclosure. Species rich grassland and bulb planting on the island would improve visual amenity and help integrate the scheme into the landscape. Zelah Hill Cottage, Mount Pleasant, and Tregorlands (VP 21), Woodland planting on the cuttings either side of the new carriageways and laneway Pennycomequick, would largely screen the scheme from view. Honeycombe Farm (VP 22) Woodland planting on embankments either side of the mainline would largely filter views to obscure the scheme from view. Further east, tree and hedgerow planting would be provided at the top of cutting slopes would help screen and integrate the scheme into the landscape. Ennis Farm and Higher Ennis (VP 31) The embankments would be seeded with species rich grassland and a mixture of deciduous and coniferous copses to break up and filter views to the carriageway. Hedgerow planting along the highway would further screen a moderate amount of the road infrastructure, vehicles and their headlights from view.	

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
Visual impact Residential receptors at Nanteague Farm (VP 10), Journey's End, Racland House, Four Winds (VP 24) and, Silverwell (VP 30).	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts and are shown in the Environmental Masterplan drawings at Vol 6 Doc Ref 6.3 ES Fig 7.6) Nanteague Farm (VP 10) Deciduous woodland would be planted on the embankments which would screen views to the main line embankment, headlights and the underbridge and create a slightly more wooded horizon to the east. Hedgerow planted along the realigned lane would screen the lane and headlights from view. and the ponds would remain partially visible beyond the intervening hedgerow in the middle distance. Journey's End, Racland House and Four Winds (VP 24) the embankments on either side of the highway would be planted with grassland and a mixture of deciduous and coniferous copses to break up and filter views to the carriageway from these dwellings, but retain long distance views out to the surrounding countryside and maintain the open character of the view. Silverwell (VP 30), woodland planting on the embankments either side of the scheme's main carriageway and side roads would have reached heights of	large adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				approximately 7m and would screen the scheme, vehicles and their headlights from view. Planting would further foreshorten views out from the lane and would obscure St Peter's Church from view.	
Visual impact Recreational receptors using footpath 319/16/1 (VP 15), NCR 32 near Henver Lane (VP 20) and NCR 32 on the unclassified local road (VP 22).	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts. (VP 15) The southern side of the proposed A30 would be planted with deciduous oak-rich woodland. This would have reached heights of approximately 7m and would partially filter views to obscure the scheme from view. (VP 17) Deciduous woodland would be planted along the southern cutting slope, below the Cornish hedgerow. As the hedgerow and woodland established they would improve the character of views from the bridleway. (VP 20) and (VP 22) Woodland planting would create a greater sense of enclosure and largely filter views to obscure the scheme from view. Species rich grassland and bulb planting would improve visual amenity and help integrate the scheme into the landscape.	Moderate adverse
Visual impact Recreational receptors using Newlyn Downs Open Access Land (VP 26), and	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts.	large adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
Carland Quarry Open Access Land (VP 27).				Disturbed improved grassland would be replaced with open heathland and grassland on the both sides of the carriageway. Cornish hedgerows would be introduced to reinstate and tie into existing field boundaries and better integrate the scheme into the landscape. All mitigation planting visible from this viewpoint location is low in height and would not affect the visibility of the scheme. The hedgerows would partially obscure parts of the scheme and headlights, but would not offer significant screening.	
Visual impact People enjoying the views to and from nearby heritage asset: Bowl Barrow (1016103) (VP 6)	Adverse	O	Long term	The reinforcement of extant hedgerows and the planting of a new hedgerow along the realigned southern boundary would have reached their full mitigation potential, reforming continuous hedgerow boundaries to the fields in keeping with the surrounding countryside	Moderate adverse
Visual impact People enjoying the views to and from heritage asset: Barrow Cemetery at Carland Cross (1016888, 1017050, 1020758) (VP 27).	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts. Disturbed improved grassland would be replaced with open heathland and grassland on the both sides of the carriageway. Cornish hedgerows would be introduced to reinstate and tie into existing field boundaries to the south of the mainline and better integrate the scheme into the landscape. All mitigation planting visible from this viewpoint location is low in height and	large adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				would not affect the visibility of the scheme. The hedgerows would partially obscure parts of the scheme and headlights, but would not offer significant screening.	
Visual impact Transport receptors on the designated Quiet Lane near Ennis Farm (VP 31)	Adverse	O	Long term	The embankments would be planted with coniferous copses to break up and filter views to the carriageway. The hedges immediately adjacent to the highway would screen a moderate amount of the road infrastructure, vehicles and their headlights from view, however the upper portions of taller vehicles would be visible	Moderate adverse
Visual impact Outdoor workers at NFH (VP 15).	Adverse	O	Long term	Mitigation measures are provided to lessen the visual impacts. The southern side of the proposed A30 would be planted with deciduous oak-rich woodland. This would have reached heights of approximately 7m and would partially filter views to obscure the scheme from view.	Moderate adverse
Chapter 8: Ecology and Nature Conservation					
Habitat loss within four deciduous woodland HPI sites (not being of a particular high quality or interesting NVC community)	Adverse	C	Long term	Woodland planting is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3), and will mitigate the loss of this woodland, but this habitat will not be fully available during construction.	Moderate to slight adverse, increasing to neutral as planting throughout the scheme starts to establish.
Habitat loss within one heathland area	Adverse	C	Long term	Heathland planting is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document	Neutral if heathland translocation is successful, or moderate to slight adverse,

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3), and will mitigate the loss of this heathland, but this habitat will not be fully available during construction. Heathland will be translocated, where feasible to do so, to a receptor site within the scheme, most likely to be adjacent to the eastern edge of Newlyn Downs SAC, which will then form the heathland connection from the isolated heathland to the SAC. This will help to mitigate the effects associated with the loss of HPI heathland and is likely to reduce the significance of effect for heathland to neutral if successful.	increasing to neutral as planting throughout the scheme starts to establish.
Loss of Important hedgerows, priority hedgerows, Cornish hedges, and other hedgerows	Adverse	C	Long term	Hedgerow planting, including Cornish hedgerows, is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8),and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3), and will mitigate the loss of these hedgerows, but this habitat will not be fully available during construction.	Moderate to slight adverse; increasing to neutral as planting throughout the scheme starts to establish.
Terrestrial invertebrate habitat loss, habitat severance, and direct mortality (during vegetation clearance)	Adverse and Beneficial	C	Temporary	Replacement habitat planting including heathland, is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3), and will mitigate for habitat loss, but will not be fully available during construction.	Slight adverse, increasing to slight to moderate beneficial as planting throughout the scheme starts to establish.

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				The planting will provide greater connectivity between habitats, thus mitigating for the impact of habitat severance. Furthermore, where possible the heathland from combined sites 3, 4, and 5, will be translocated, which will mitigate the effects associated with the loss of HPI heathland supporting the invertebrate population, as well as reducing the direct mortality to non-mobile invertebrate stages associated with vegetation clearance.	
Temporary severance and fragmentation of foraging and commuting features used by assemblages of bats which include Annex II species.	Adverse	C	Temporary	Construction mitigation (timing of works i.e. retention of vegetation along known commuting routes for as long as possible and the use of dead hedges to minimise loss of connectivity).	Moderate to slight adverse
Loss and/or damage of four CRVI sites (two of which are poor quality, and one of which is of HPI character)	Beneficial	O	Long term	Planting of replacement habitats, including heathland and species rich grassland, will mitigate the loss of the CRVI's, providing a net-gain of habitat during operation (see Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3)).	Moderate to slight beneficial significance, subject to habitat development.
Habitat loss within four deciduous woodland HPI sites (not being of a particular high quality or interesting NVC community)	Beneficial	O	Long term	Woodland planting is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3), to mitigate for the loss of	Moderate to slight beneficial significance, subject to habitat development.

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
				woodland and provide a net-gain of habitat during operation.	
Habitat loss within one heathland area	Beneficial	O	Long term	Heathland planting is detailed in Table 8-14 in in **Ecology and nature conservation** (Volume 6 Document Ref 6.2 ES Chapter 8), and the EMP (ES Figure 7.6 of Volume 6, Document Ref 6.3) to mitigate for the loss of heathland, and provide a net-gain of habitat during operation.	Moderate to slight beneficial significance, subject to habitat development.
Chapter 9: Geology and Soils					
Subsidence/collapse of shallow underground mine workings due to construction of Chiverton Embankment (Ch1+150 to 1+320)	Adverse	C and O	Short term initial impact, but could occur repeatedly over long term	Refine mining hazards during geotechnical design. Further gravity surveys over features F1.8 and largest feature of F1.2, Possible intrusive ground investigation depending on the results gravity survey.	Moderate adverse
Subsidence/collapse of shallow underground mine workings due to construction of Journey's End Embankment (Ch12+030 to 12+160)	Adverse	C and O	Short term initial impact, but could occur repeatedly over long term	Refine mining hazards during geotechnical design. Further intrusive investigation of F1.2, F1.3, F1,4a to F1.4d and F1.5.	Moderate adverse
Subsidence/collapse of shallow underground mine workings due to construction of Nanteague Cutting (Ch6+380 to 6+430)	Adverse	C and O	Short term initial impact, but could occur repeatedly over long term	Refine mining hazards during geotechnical design. Further intrusive investigation of F1.2. Further gravity profile approximately 60m to the north to further delineate the gravity anomaly.	Moderate adverse
Subsidence/collapse of shallow underground mine workings due to construction of Tolgroggan cutting and side road (Ch8+150 to 8+250)	Adverse	C and O	Short term initial impact, but could occur	Refine mining hazards during geotechnical design. Further gravity survey over feature F1.2.	Moderate adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
			repeatedly over long term		
Subsidence/collapse of shallow underground mine workings due to construction of Carland Crossing Cutting (Ch13+950 to 14+120)	Adverse	C and O	Short term initial impact, but could occur repeatedly over long term	Refine mining hazards during geotechnical design.	Moderate adverse
Chapter 10: Materials – none to report					
Chapter 11: Noise and Vibration					
Effects above the SOAEL threshold, as described in Government Policy (see Table 11-1 of **Noise and vibration** (Volume 6 Document Ref 6.2 ES Chapter 11)). Residential locations are: • R1 Highfield (also The Annex and Burrow Farm); • R2 Silversprings (also the residences at The Old Vicarage, Old Vicarage Court, The Gatehouse and Chyverton House); • R4 Roscarnick Farm; • R5 Silverdene (also Ferriera and Silverwell Yard); • R12 Elmsleigh (also Barn Wyn, Treffry Cottage, 1 The Cottages, Ranger Barn); • R13 NFH Villa; • R15 Merton Lodge (also St Freda);	Adverse	Construction	Temporary	BPM control measures developed in the CEMP. BPM measures to include: • selection of quiet and low vibration plant equipment, • include quieter methods (including non-vibratory compaction, where required), • location of equipment on site, • control of working hours, • provision of acoustic enclosures and the use of less intrusive vehicle alarms, • screening.	Significant adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
• R16 Hill House; • R17 Zelah Lane Farm (also Zelah Lane Farm Annexe, Trolgroggan Bungalow, Chapel Cottage, The Nook Zelah Lane and The Chapel); • R19 Henver Cottage (also Henver Lane Cottage); • R21 Honeycombe Barn (also Honeycombe House and residential Caravan); and • R22 Pennycomequick.					
Effects between the LOAEL and SOAEL, as described in Government Policy (see Table 11-1 of **Noise and vibration** (Volume 6 Document Ref 6.2 ES Chapter 11)) Residential locations are: • R3 Silverwell Forge (also Albany View, Holly Tree Cottage, The Paddock); • R7 Callestick Vean Bungalow; • R8 Creegmeor Farm; • R11 Nanteague Farm; • R14 Bracken Woods; • R18 2 Church Lane (also 1 Church Lane, Halfmoon House, Woodwards Barn, Stepping Stones, Treveth, Berlewen, Balmerino, Byways, Cranbourne, Sansigra House and	Adverse	Construction	Temporary	BPM control measures developed in the CEMP	Not significant

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
residences on south side of Chapel Crescent); • R20 2 Tregorland (also 1 Tregorland, Zelah Hill Cottage, Mount Pleasant Farm, Mount Pleasant Cottage); • R23 The Lodge (also Raglan House, Four Winds); • R24 Higher Ennis Farm; and • R25 1-3 Carland Cross Cottages.					
Effects at four non-residential receptors: • Mithian Church Hall, • The Church of St Peter, • NFH wedding venue; • Nanteague Stables.	Adverse	Construction	Temporary	BPM control measures developed in the CEMP	Significant adverse
Two dwellings assessed as subject to direct adverse effects above the SOAEL (see Table 11-1 for definition of SOAEL). Five dwellings assessed as subject to indirect adverse effects above the SOAEL	Adverse	Operational	Long term	Screening is incorporated as part of the landscape and visual mitigation design; screening height has been increased in the proposed Chiverton Junction and Marazanvose / NFH areas. A low noise surface would be also incorporated as part of the scheme.	Significant adverse
22 dwellings are assessed with beneficial effects, although still remaining above the SOAEL. 21 dwellings would reduce to a level below the SOAEL with beneficial effects.	Beneficial	Operational	Long term		Significant beneficial

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
32 dwellings assessed as subject to adverse effects between the LOAEL and SOAEL	Adverse	Operational	Long term	Screening is incorporated as part of the landscape and visual mitigation design; screening height has been increased in the proposed Chiverton Junction and Marazanvose / NFH areas. A low noise surface would be also incorporated as part of the scheme.	Significant adverse
13 dwellings assessed as subject to beneficial effects between the LOAEL and SOAEL	Beneficial	Operational	Long term		Significant beneficial
Tables 11-12 to 11-14 of **Noise and vibration** (Volume 6 Document Ref 6.2 ES Chapter 11)) identify those 'affected' links beyond the scheme study area* where noise changes are assessed as significant. There are indirect significant adverse effects identified at 638 dwellings. (Note: In the long term, there are also 624 properties within 50m of the 'affected' links with a noise decrease, although these benefits are assessed as not significant.) * (Defined as 1km from the scheme and existing routes which are bypassed or improved.)	Adverse	Operational	Long term	Beyond scheme study area – on-site scheme mitigation not effective.	Significant adverse
Chapter 12: People and Communities					
Land & Property – Agricultural Lands and Farm Holdings / Plots	Adverse	Construction	Temporary	All land used temporarily for construction purposes to be returned to its current state / use	Moderate adverse
Land & Property – Agricultural Lands and Farm Holdings / Plots	Adverse	Operation	Long term	N/A	Moderate adverse

Description of effect	Adverse/ beneficial	Construction / operational	Long term/ temporary	Mitigation requirements	Significance of residual effect after mitigation
All Travellers – Driver Stress	Beneficial	Operation	Long term	N/A	Moderate beneficial
All Travellers – Bus Travellers	Beneficial	Operation	Long term	N/A	Moderate beneficial
Chapter 13: Road Drainage and Water Environment					
Physical modification of water features (e.g. new culverts / outfalls)	Adverse	Operation	Long term	Best practice detailed design of structures.	Slight/moderate adverse
Chapter 14: Climate Change – none to report					

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