Appendix VII: HLA for Capital Schemes - Vinci Ringway

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HLA for Capital Scheme Options - cells highlighted in orange taken forward to detailed assessment		SEA Objectives										
		SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11
	Capital Schemes - Vinci											
54	**- DR1: Duver Road, St Helens**											
i	Complete structural replacement with new piles supporting new slab	+/-	+/-	-	0	0	0	0	0	0	+	+
ii	Spaced bored pile wall across slope, with structural infill to support existing slab (no slab replacement)	+/-	0	-	0	0	0	0	0	0	+	+
55	**- LRA1: Lower Road, Adgestone**											
i	Stabilise failed section to south/downslope using soil nailed gabion baskets	0	+/-	-	0	0	0	0	0	0	+/-	+/-
ii	Embedded wall with very long piles into Ferruginous Sands	0	0	+/-	0	0	0	0	0	0	+	+
iii	Gabion wall	0	+/-	0	0	0	0	0	0	0	+	+
iv	Reinforced soil	0	+/-	-	0	0	0	0	0	0	+	+
v	Soil nails	0	+/-	-	0	0	0	0	0	0	+	+
56	**- WLY1: Westhill Lane, Yarmouth**											
i	Resurfacing of affected road, and subsequent pavement interventions where cracking persists, surface drainage and soil stabilisation	0	0	+/-	0	0	0	0	0	0	+	+
57	**- VS1: Newport Road - Upper Ventnor "Graben"**											
i	Pavement reconstruction with deep reinforced lightweight fill 'mattress'	+/-	+/-	-	+/-	0	0	0	0	0	+	+
ii	Continued make-up of levels as at present	0	0	0	0	0	0	0	0	0	+	-
iii	Structural spanning solution e.g. three-point span on bearings, split-deck expansion span, or bailey bridge	+/-	+/-	-	0	0	0	0	0	0	+	+
58	**- VS2: Gills Cliff Road, Ventnor**											
i	Plane and resurface with re-kerbing where necessary	+/-	0	0	0	0	0	0	0	0	+	+
ii	New pavement	+/-	0	0	0	0	0	0	0	0	+	+
59	**- VS3: Castle Court, Ventnor**											

HLA for Capital Scheme Options - cells highlighted in orange taken forward to detailed assessment		SEA Objectives										
		SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11
i	Plane and resurface at affected locations	0	0	+/-	0	0	0	0	0	0	0	+
ii	Replacement with rigid pavement	0	0	-	0	0	0	0	0	0	+	+
60	- VS4: Whitwell Road, Ventnor											
i	Plane and resurface including re-kerbing where necessary	0	0	+/-	0	0	0	0	0	0	0	+
ii	Reinforced compliant pavement	0	0	-	0	0	0	0	0	0	0	0
61	- VS5A: Undercliff Drive, Ventnor - Area A, above Hunts Road											
i	Bored dowel piles along edge of top scarp slope	-	0	-	0	0	0	0	0	0	+	+
ii	Extension of dewatering wells from site B	-	0	-	0	0	0	0	0	0	+	+
62	- VS5B: Undercliff Drive, Ventnor - Area B, Woodlands											
i	Ground anchors at scarp edge	0	+/-	-	0	0	0	0	0	0	+	+
ii	Line of dewatering wells	0	0	-	0	0	0	0	0	0	+	+
iii	Dewatering wells in combination with ground anchors	0	+/-	--	0	0	0	0	0	0	+	+
iv	Dewatering wells in combination with ground anchors with lightweight fill construction	0	+/-	--	0	0	0	0	0	0	+	+
v	Counterfort drainage forward of Site B to control shallow sliding and loss of support of rotational blocks immediately beneath and forward of the site	0	0	-	0	0	0	0	0	0	+	+
63	- VS5C: Undercliff Drive, Ventnor - Area C, caravan park											
i	Ground anchors on seaward scarp slope in front of westbound carriageway tension crack	-	+/-	-	0	0	0	0	0	0	+	+
ii	Anchored pile wall	-	+/-	-	0	0	0	0	0	0	+	+
iii	Pile supported raft with soil nail scarp protection	-	+/-	-	0	0	0	0	0	0	+	+
iv	Groundwater control - dewatering	0	0	-	0	0	0	0	0	0	+	+
v	Ground water control and ground anchored beam with soil nail scarp protection	-	+/-	--	0	0	0	0	0	0	+	+

HLA for Capital Scheme Options - cells highlighted in orange taken forward to detailed assessment		SEA Objectives										
		SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11
64	- VS5D: Undercliff Drive, Ventnor - Area D, Mirables											
i	Reprofiling for 50 metres across the differential bump involving excavation and reconstruction of pavement foundation with a geogrid reinforced compliant road foundation	-	0	-	0	0	0	0	0	0	+	+
ii	Ground anchors	-	+/-	-	0	0	0	0	0	0	+	+
iii	Deep dewatering	-	0	-	0	0	0	0	0	0	+	+
65	- VS6: Urban footpath south side of La Falaise Car Park, Ventnor											
i	Location 1: new drainage, new handrail Location 2: realignment further from cliff edge, new railings	0	0	+/-	0	0	0	0	0	+	+	+
ii	Cliff stabilisation	0	+/-	-	0	0	0	0	0	+	+	+
66	- VS7: Urban footpath south side of Winter Gardens, Ventnor											
i	Pavement renewal where indicated as necessary by inspection and monitoring	0	+/-	0	0	0	0	0	0	+	+	+
67	- MS1: Military Road, Brook Chine											
i	A temporary 16 metre clear span pile-supported (temporary steel) modular bridge, pre-installed in path of regressing landslide.	+/-	-	-	0	0	0	0	0	+	+	+
ii	12.5 metre clear span pile-supported (4 at each end to a depth of 15m) bridge deck pre-installed in path of regressing landslide, parapet to south side only	+/-	-	--	0	0	0	0	0	+	+	+
iii	25-metre long anchored pile wall acting in conjunction with the existing newly installed drainage	+/-	-	--	0	0	0	0	0	+/-	+	+
iv	Stabilising the upper part of the slipping mass, by soil processing or mechanical intervention such as such as soil nailing	0	-	-	0	0	0	0	0	+/-	0	0
68	- MS2: Military Road, Shippards Chine											
i	A temporary 16 metre clear span pile-supported (temporary steel) modular bridge, pre-installed in path of regressing landslide.	+/-	-	-	0	0	0	0	0	+	+	+
ii	Deep cut-off drain on landward side of road	0	0	--	0	0	0	0	0	+/-	+	+

HLA for Capital Scheme Options - cells highlighted in orange taken forward to detailed assessment		SEA Objectives										
		SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11
69	- BS1: Blackgang, Old Access Road											
i	Continued maintenance and managed retreat	0	+/-	+/-	0	0	0	0	0	0	0	+
ii	Local stabilisation	0	0	-	0	0	0	0	0	0	0	+
70	- BS2: Blackgang, The Terrace, Chale											
i	Pump replacement and ongoing maintenance of pumped drainage	0	0	0	0	0	0	0	0	0	0	+
71	- BR: Bouldnor Road, Yarmouth											
i	Heavy sheet pile wall over majority of length (excluding wooded area);soil nails to embankment west of wooded area; carriageway replacement with reinforced pavement; refurbishment and replacement of drainage as required	+/-	+/-	--	+/-	0	0	0	0	0	0	+
ii	Stabilisation of the seaward facing slope with soil nails and counterfort drainage to meet current design standards	0	+/-	-	0	0	0	0	0	0	0	+
iii	Stabilisation of the seaward facing slope with soil nails to an improvement percentage	0	+/-	-	0	0	0	0	0	0	0	+
iv	Stabilisation of the seaward facing slope with soil nails to an improvement percentage and provision of an embedded solution to retain the woodland vegetation on the seaward facing slope	0	+/-	-	0	0	0	0	0	0	0	+
	-	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11

Key to the High Level Assessment Matrix	
++	Likely strong positive effect
+	Likely positive effect
0	Neutral/no effect
-	Likely adverse effect
--	Likely strong adverse effect
+/-	Uncertain effects

HLA for Capital Scheme Options - cells highlighted in orange taken forward to detailed assessment	SEA Objectives										
	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11

SEA Objectives	
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualiti
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.
5	Conserve the Island's natural resources.
6	Protect and enhance the Island's soils resource.
7	Reduce air pollution and ensure continued improvements to air quality.
8	Minimise the Island's contribution to climate change.
9	Plan for the anticipated effects of climate change.
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.
11	Safeguard and improve community health, safety and well being.

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Appendix VIII: DAMs for Capital Schemes - Vinci Ringway

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DETAILED ASSESSMENT MATRIX

DR: Duver Road, St Helens - Vinci - Complete structural replacement with new piles supporting new slab

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	Piling works potentially affecting listed building, located c. 100m away from scheme.	-			Intermittent	Permanent	National	Low	Low	Moderate	Negative	Yes	Assessment of building(s) within range for sensitivity. Review piling method to minimise any expected vibrations and agreement to repair if affected following works
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Timber clad facing may impact visual appearance if not in keeping with Conservation Area		-	-	Ongoing	Permanent	Local	Low	Med	Negligible	Negative	Yes	Consultation with stakeholders to confirm finish and minimise visual impact by altering design accordingly. Minimise any vegetation removal . Consult to seek opinion on requirement for landscape and visual impact assessment
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	Adjacent to SPA/Ramsar/SSSI. Proposed timings of works (including piling) clash with over wintering birds, which are a key feature on SSSI/SPA/Ramsar citations. Direct impact from works in SSSI resulting in some vegetation loss.	-			Intermittent	Temporary	International	High	High	Severe	Negative	Yes	Noise from piling works are likely to disturb over wintering bird assemblage possibly resulting in decreased survival rates and increased pressure on neighbouring winter grounds. Timing of work should be reviewed to avoid bird breeding and over wintering (suitable period = Aug - Oct). Consider use of vibro piling and/or other noise attenuation methods. SSSI area affected: defined in citation as relatively young woodland with oak/ash. The appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Additionally, works should avoid mature trees (and roots) where safe and possible to do so.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key

The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	**Negative**	Severe			Optimum	**Positive**
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

LRA: Lower Road, Adgestone - Vinci - Stabilise failed section to south/downslope using soil nailed gabion baskets

	No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
				Short term	Medium term	Long term									
SEA Objectives	1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	N/A												
	2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Slope stabilisation using a soil nailed gabion wall may have a negative visual impact on the AONB, although it is likely to become overgrown with vegetation over time.	-	-		Ongoing	Temporary	National	Low	High	Moderate	Negative	Yes	Consultation with stakeholders to minimise visual impact by altering appearance (soil and vegetation cover) . Consult to seek opinion on requirement for landscape and visual impact assessment
	3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	Stabilisation using gabion baskets will destroy some of the habitat in the immediate area, which is within the Alverstone Marshes East (Alverstone Lynch) SINC. The SINC is listed as containing "a viable population of one or more species protected under the Habitats Regulations or listed in schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981 (as revised and amended) or in Red Data Books of Britain and Ireland." However, the impact is believed to be short term if mitigation is applied correctly.	-			One off	Temporary	Local	Low	High	Negligible	Negative	Yes	Consultation with stakeholders to agree the necessary method for ecological survey(s), and to ensure required site-specific mitigation (based on findings of survey) is implemented, to minimise impact to any protected/priority species/habitat. Plant gabion wall to create new habitats to compensate for lost habitat
	4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
	5	Conserve the Island's natural resources.	N/A												
	6	Protect and enhance the Island's soils resource.	N/A												
	7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
	8	Minimise the Island's contribution to climate change.	N/A												
	9	Plan for the anticipated effects of climate change.	N/A												
	10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Ongoing	Permanent	Local	High	High	Moderate	Positive	No	
	11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key									
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

VS1: Newport Road - Upper Ventnor "Graben" - Vinci - Pavement reconstruction with deep reinforced lightweight fill 'mattress'

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	Potential impact to Grade II Listed Buildings (c.130m away) from vibration/dust, although this is likely to be limited by the distance and intervening structures.	-	-		Intermittent	Permanent	National	Low	Low	Moderate	Negative	Yes	Assessment of impact to building(s), review piling method and protect building to minimise any expected vibrations /dust damage and agreement to repair if affected following works
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Visual impact of new retaining walls and metal steps on the nearby AONB and Conservation Area	-	-	-	Ongoing	Permanent	National	Negligible	Med	Minor	Negative	Yes	Proposal suggests wall design is yet to be determined but has suggested possibility of gabion wall using sympathetic material chosen to match the surrounding construction materials. Design should be inline with visual requirements, as agreed with stakeholders, but should avoid gabion walls where possible. Solution suggests the use of metal steps to the pedestrian pathway - depending on design finish, these may not be appropriate in keeping with the visual requirements. Requirement to agree design in consultation with IWC.
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The site is adjacent to a SINC and nearby to SSSI, SAC, LNR. Impacts on SAC likely to be negligible given distance from works but degradation from dust is a possibility (SAC citation from Annex I habitat - species rich plant communities). Similarly, impact to LNR and SSSI is likely to be negligible. Citation for SSSI (part of the area is also designated as a LNR) is for the occurrence of both strongly acid soils and basic soils which gives rise to rich diversity of plant communities and considerable ecological interest, as well as the nationally rare Adonis blue butterfly. Works are not likely to affect these features. Direct impact on SINC is predicted, including a small amount of land take. However, it is designated due to its unimproved grasslands and social value (www.wildonwight.co.uk), not for specific species, therefore magnitude is expected to be very low.	-	-		Intermittent	Temporary	Local	Negligible	Med	Negligible	Negative	Yes	The appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	Ground water SPZ on site and therefore potential for contamination from pollution incident, or when relocating sewerage infrastructure.	-			Intermittent	Temporary	Regional	High	Low	Major	Negative	Yes	During construction, storage of chemicals/fuels should be in sealed/bounded zones or outside of SPZ. Works to sewerage infrastructure to be agreed with and carried out to specification of Southern Water.
		Risk to SPZ from sewerage leakage is present currently and so works will also reduce risk once complete			+	Ongoing	Permanent	Regional	Med	High	Moderate	Positive	Yes	Extra precautionary measures (e.g. pipe-in-pipe) to prevent leakage of sewerage from new installations as a result of future ground movements, and subsequent seepage into ground. Works to sewerage infrastructure to be agreed with and carried out to specification of Southern Water.
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												

DETAILED ASSESSMENT MATRIX

VS1: Newport Road - Upper Ventnor "Graben" - Vinci - Pavement reconstruction with deep reinforced lightweight fill 'mattress'

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key									
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

VS5A: Undercliff Drive, Ventnor - Area A, above Hunts Road - Vinci - Bored dowel piles along edge of top scarp slope

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	There is an impact risk to a Grade II Listed Building (c.70m E) from the site, directly from construction work and potentially from construction traffic, through dust and vibration.	-	-		Intermittent	Temporary	National	Low	Low	Moderate	Negative	Yes	Assessment of impact to building(s) and protect building to minimise any expected vibrations /dust damage. Agreement to repair if affected following works. Consult with English Heritage regarding approach and consent to works.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	N/A												Piles are below ground so not visible
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The scheme is partly adjacent (eastern section) to the Compton Chine to Steephill Cove SSSI, Undercliff SINC (St Lawrence Undercliff) and St Lawrence Undercliff Wildlife Trust Reserve (overlapping geographic areas), which also contain TPOs. It is expected that there will be an impact through disturbance from construction noise, dust and some vegetation loss, and direct impact to vegetation along the edge of the highway from the use of bored piles. Works are scheduled to avoid bird breeding season.	-	-		Intermittent	Temporary	National	Med	High	Major	Negative	Yes	The appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Additionally, works should avoid mature trees (and roots) by positioning piles accordingly, where safe and possible to do so. Given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction along Undercliff Drive.
		The scheme is partly adjacent to the Compton Chine to Steephill Cove SSSI, which is part of Wealden Group and has been the source of numerous fossil remains. It is cited for being one of the richest sources of early cretaceous dinosaur fauna and flora in the world. Bored pile construction may adversely affect buried remains, with negative effects to geodiversity.	-	-		Intermittent	Permanent	National	Med	High	Major	Negative	Yes	Consult with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations may be required to inform detailed design.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key								
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

VS5B: Undercliff Drive, Ventnor - Area B, Woodlands - Vinci - Ground anchors at scarp edge

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	There is an impact risk directly from construction work to historic and archaeological remains, which are a local feature of the Undercliff landscape. Additionally the Old Park area (Old Park Farm and The cottage adjoining stables are listed buildings) may be impacted from construction dust (construction lasts circa six months).	-			Intermittent	Permanent	National	Low	Low	Moderate	Negative	Yes	Assessment of impact to building(s) and protect building to minimise any expected vibrations /dust damage and agreement to repair if affected following works. Consult with English Heritage regarding approach and consent to works. Consider Archaeological Watching Brief during construction programme.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Part of the solution involves ground anchors to stabilise the upslope area. Depending on visibility, vegetation removal will have a short term visual impact on the onsite AONB and potentially the Heritage Coastline. The contractor has suggested the post construction planting and avoidance of noteworthy trees.	-			Ongoing	Temporary	National	Low	Med	Moderate	Negative	Yes	Minimise vegetation loss / loss of mature trees where possible. Utilise local plant seed mix for reseeding scarp face. Consult to seek opinion on requirement for landscape and visual impact assessment
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The scheme is partly adjacent to the Undercliff SINC (Old Park and Mirables and Old Park) and a TPO area. It is expected that there will be an impact from construction dust and some vegetation loss (although vegetation loss will be outside of the SINC on the upper slope). Works are outside of bird breeding season.	-	-		Ongoing	Temporary	Local	Low	High	Negligible	Negative	Yes	The appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Minimise damage to vegetation, avoiding mature trees (and root systems). Given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction along Undercliff Drive.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key

The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

VS5C: Undercliff Drive, Ventnor - Area C, Caravan park -Vinci - Ground anchors on seaward scarp slope.

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	There is a slight impact risk directly from construction work to rich historic and archaeological remains, which are a local feature of the Undercliff landscape. Additionally there is a locally listed archaeological feature, south of the scheme, which could be impacted from construction dust (construction lasts circa six months). The 'Mirables' listed building is situated to the west between site C and D so could be impacted by construction vehicles /dust or accidental damage.	-			Intermittent	Permanent	National	Low	Low	Moderate	Negative	Yes	Assessment of impact to building(s) and features of interest during detailed design. Protect buildings to minimise any possible damage and agreement to repair, if affected, following works. Consult with English Heritage regarding approach and consent to works. Consider Archaeological Watching Brief during construction programme.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Part of the solution involves soil nailing. Depending on visibility, vegetation removal will have a short term visual impact on the onsite AONB and potentially the Heritage coast line. The contractor has suggested the incorporation of biodegradable seeded matting to the slope facing.	-			Ongoing	Temporary	National	Low	Med	Moderate	Negative	Yes	Minimise vegetation loss/mature trees where possible. Utilise local plant seed mix for reseeding soil nailed slope. Consult to seek opinion on requirement for landscape and visual impact assessment
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The scheme is partly within (western section) the Compton Chine to Steephill Cove SSSI, Undercliff SINC (St Lawrence Undercliff, Old Park and Mirables and Old Park) which also contains TPOs. It is expected that there will be an impact from construction dust, vegetation loss and land take. Additionally the SINC on the south side of the scheme supports nationally scarce and BAP species, which may be impacted by noise and vibration.	-	-		Ongoing	Temporary	National	Med	High	Major	Negative	Yes	Given the known presence of at least one protected species (SINC citation), the appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Minimise damage to vegetation, avoiding mature trees (and root systems). Given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction along Undercliff Drive.
		The scheme is partly adjacent to the Compton Chine to Steephill Cove SSSI, which is part of Wealden Group and has been the source of numerous fossil remains. It is cited for being one of the richest sources of early cretaceous dinosaur fauna and flora in the world. Soil nailing may adversely affect buried remains, with negative effects to geodiversity.	-	-	-	Ongoing	Permanent	National	Med	Low	Major	Negative	Yes	Consult with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations may be required to inform detailed design.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

DETAILED ASSESSMENT MATRIX

VS5D: Undercliff Drive, Ventnor - Area D, Mirables - Vinci - Reprofiling road, involving excavation and reconstruction of foundation with reinforced geogrid.

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	There is an impact risk directly from construction work to rich historic and archaeological remains, which are a local feature of the Undercliff landscape. The 'Mirables' listed building is situated to the east between site C and D so could be impacted by construction vehicles /dust or accidental damage.	-	-	-	Intermittent	Permanent	National	Low	Low	Moderate	Negative	Yes	Assessment of impact to building(s) and features of interest. Protect buildings to minimise any possible damage and agreement to repair, if affected, following works. Consult with English Heritage regarding approach and consent to works. Consider Archaeological Watching Brief during construction programme.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Part of the solution requires an existing dry stone wall to be strengthened or replaced. The wall is important to the landscape character of the AONB in this location. The contractor has suggested possible replacement with stone-filled gabion baskets.	-			Ongoing	Temporary	National	Med	Med	Major	Negative	Yes	Consult to seek opinion on requirement for landscape and visual impact assessment. Detailed designs should considered reconstruction of wall with similar materials, or facing detail to gabion baskets inline with existing material.
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The scheme is within the Compton Chine to Steephill Cove SSSI and Undercliff SINC (St Lawrence Undercliff and Old Park and Mirables) which also contains TPOs. It is expected that there will be an impact through disturbance from construction dust, loss of habitat (dry stone wall) and vegetation loss, from wall strengthening activities. Additionally the SINC on the south side of the scheme supports nationally scarce and BAP species, which may be impacted by noise and vibration.	-	-		Ongoing	Temporary	National	Med	High	Major	Negative	Yes	The appropriate ecological survey(s) should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Minimise damage to vegetation, avoiding mature trees (and root systems). Dry stone wall replacement should offer comparable habitat opportunities by adding soil / native seed mix to the gabion baskets. Given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction along Undercliff Drive.
		The scheme is partly adjacent to the Compton Chine to Steephill Cove SSSI, which is part of Wealden Group and has been the source of numerous fossil remains. It is cited for being one of the richest sources of early cretaceous dinosaur fauna and flora in the world. Excavation of the road could impact these features, if present at this location of the road, with negative effects to geodiversity.	-	-		Intermittent	Permanent	National	Med	High	Major	Negative	Yes	Consult with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations may be required to inform detailed design.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	

DETAILED ASSESSMENT MATRIX

VS5D: Undercliff Drive, Ventnor - Area D, Mirables - Vinci - Reprofiling road, involving excavation and reconstruction of foundation with reinforced geogrid.

	No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
				Short term	Medium term	Long term									
	11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

Key								
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

MS1: Military Road, Brook Chine - Vinci - 16 metre clear span temporary pile-supported modular bridge

MS1

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	The scheme is within the Compton Chine to Steephill Cove SSSI, which is part of Wealden Group and has been the source of numerous fossil remains. It is cited for being one of the richest sources of early cretaceous dinosaur fauna and flora in the world. Construction method uses piles to support a temporary modular bridge which may encounter and damage features, if present at this location of the road, with negative effects to geodiversity. Investigative excavations may be required to inform detailed design.	-	-	-	one off	Permanent	National	Low	Low	Minor	Negative	Yes	Consult with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations / Archaeological Watching Brief may be required to inform detailed design / monitor construction.
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	The scheme is within a Conservation Area and AONB, and adjacent to the Heritage Coastline. A modular bridge solution with tall aerial supporting structure would adversely affect the coastline landscape character. However, it will be relatively straightforward to dismantle and remove the surface structure at the end of its useful lifetime, meaning that restoration is fully feasible.		-	-	Ongoing	Permanent	National	Med	High	Major	Negative	Yes	Consult to seek opinion on requirement for landscape and visual impact assessment, to ensure visual impacts are minimised. Explore detailed design solutions which help to minimise temporary effects.
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The scheme is designed to allow chine formation to continue beneath the road unimpeded by supporting structures, which acknowledges and responds to the conservation objectives of the SAC. Conservation objectives include the requirement to allow natural coastal and geomorphological process to evolve unhindered. The scheme will be a short-term solution, the road inevitably becoming impassable at some stage, and can be removed albeit with potential for additional short-term impacts. However, there are potential impacts to terrestrial habitats and protected plant species of the SAC/SSSI during construction and there may be some habitat alteration through shading, as the bridge will be positioned over the exiting road where the chine is forming.	-	-	-	one off	Temporary	International	Low	High	Major	Negative	Yes	The scheme is consistent with the SAC conservation objectives and SMP policy of 'no active intervention'. But it may be necessary to adapt designs for a longer span, and/or slightly adjust the location of the span to respond to chine formation. Construction and decommissioning could negatively affect SAC/SSSI features and will require suitable detailed assessments and mitigation strategies at the project stage via HRA and EcIA, informed by appropriate ecological surveys (of maritime cliff vegetation in particular). Given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction.
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	N/A												
5	Conserve the Island's natural resources.	N/A												
6	Protect and enhance the Island's soils resource.	N/A												
7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
8	Minimise the Island's contribution to climate change.	N/A												
9	Plan for the anticipated effects of climate change.	N/A												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+		Continuous	Temporary	Local	High	High	Moderate	Positive	No	
11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+		Continuous	Temporary	Local	Med	Med	Minor	Positive	No	

Key									
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	**Negative**	Severe			Optimum	**Positive**
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

MS2: Military Road, Shippards Chine - Vinci - Manage and maintain approach in first instance; installation of temporary modular briedge if/when required (estimated requirement in 2020)

SEA Objectives

No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation required?	Supporting comments / Proposed mitigation
			Short term	Medium term	Long term									
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
5	Conserve the Island's natural resources.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
6	Protect and enhance the Island's soils resource.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
7	Reduce air pollution and ensure continued improvements to air quality.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
8	Minimise the Island's contribution to climate change.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
9	Plan for the anticipated effects of climate change.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												
11	Safeguard and improve community health, safety and well being.	Manage and maintain approach will not lead to negative effects. If a modular bridge is required, impacts would be broadly equivalent to those of Vinci proposals for Brook Chine.												

Key

The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive
	Negative effect	-			Major			Major	
	Positive effect	+			Moderate			Moderate	
	Major positive effect	++			Minor			Minor	
	Neutral environmental effect				Negligible			Negligible	

DETAILED ASSESSMENT MATRIX

BR: Bouldnor Road, Yarmouth - Vinci - heavy sheet pile wall over majority of length (excluding wooded area); soil nails to embankment west of wooded area; carriageway replacement with reinforced pavement; refurbishment and replacement of drainage as required

SEA Objectives	No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation or other action required?	Supporting comments / Proposed mitigation
				Short term	Medium term	Long term									
	1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	It is possible that artefacts could be encountered and/or damaged, but the likelihood is uncertain.	-	-		One off	Permanent	Local	Low	Low	Negligible	Negative	Yes	Consult with English Heritage and Council archaeologist to refine detailed designs. Consider use of Archaeological Watching Brief during construction.
	2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	Soil nailing could have short-term negative effects on the visual appearance of the area through removal of vegetation, with impacts to the AONB and possibly the (further away) conservation area.	-	-		Ongoing	Temporary	National	Neg	Med	Minor	Negative	No	The majority of engineering interventions will not be visible post-construction, and removed vegetation will recover over time. No mitigation required.
	3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	The proposal includes removal of vegetation for access for piling works (c.2m) as well as installation of soil nails. Methods include use of vibro-piling to reduce disturbance impacts to birds. But works are scheduled to coincide with on passage migrant and overwintering seasons in both of two years, meaning that impacts to SPA/Ramsar/SSSI features are still possible through visual disturbance, and also noise depending on feasibility of vibro-piling in relation to ground conditions. Construction also extends into bird breeding season in year one. SAC to north is unlikely to be affected during construction and operation, although there is a risk of contamination from a pollution incident. Japanese Knotweed is present onsite and will require a suitable remediation strategy, and measures to prevent accidental translocation during construction.	-	-		Intermittent	Temporary	International	Low	Low	Major	Negative	Yes	Vibro-piling should be used wherever feasible, including for soil nailing, with percussive piling limited to reduce potential impacts to birds. If ground conditions suggest that vibro-piling is insufficient, works should be supervised by Ecological Clerk of Works to avoid work when birds are present at Thorley Brook. Visual screening may be required to prevent additional visual disturbance. Best practice construction methods should be followed, including a pollution response plan, to reduce the risk of pollution; given the proximity and number of environmental receptors, it is recommended that a construction environmental management plan (CEMP) is used to mitigate effects of construction. The appropriate ecological survey(s), e.g. breeding birds, should be carried out (and site-specific mitigation based on findings of survey) to assess and minimise impact to any protected/priority species/habitat. Minimise damage to vegetation, avoiding mature trees (and root systems). Vegetation clearance to be undertaken outside of bird breeding season. A suitable remediation strategy, and measures to prevent accidental translocation during construction, will be required.
	4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	Existing drainage outfalls seaward. There may be an opportunity to divert drainage south into Thorley Brook, with potential (minor) ecological benefits.		+	+	Ongoing	Permanent	Local	Low	Low	Negligible	Positive	No	
	5	Conserve the Island's natural resources.	N/A												
	6	Protect and enhance the Island's soils resource.	N/A												
	7	Reduce air pollution and ensure continued improvements to air quality.	N/A												
	8	Minimise the Island's contribution to climate change.	N/A												
	9	Plan for the anticipated effects of climate change.	N/A												
	10	Reduce poverty and social exclusion and close the gap between the most deprived areas on the Isle of Wight and the rest of the Island.	Improves the satisfaction of people with their neighbourhoods as a place to live and maintains essential connectivity and access between local community and rest of island.	+	+	+	Continuous	Permanent	Local	High	High	Moderate	Positive	No	
	11	Safeguard and improve community health, safety and well being.	Improves/maintains road safety	+	+	+	Continuous	Permanent	Local	Med	Med	Minor	Positive	No	

	No.	SEA Objective	Description of predicted effect	Duration			Frequency	Temporary or permanent	Geographic importance	Magnitude	Level of certainty	Severity of significance	Positive or negative	Mitigation or other action required?	Supporting comments / Proposed mitigation
				Short term	Medium term	Long term									

Key										
The 'Duration' column is noted as:	Major negative effect	--	Magnitude of significance is illustrated as:	Negative	Severe			Optimum	Positive	
	Negative effect	-			Major			Major		
	Positive effect	+			Moderate			Moderate		
	Major positive effect	++			Minor			Minor		
	Neutral environmental effect				Negligible			Negligible		