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Strategic Environmental Assessment for the Isle of Wight Highways PFI

Environmental Report

January 2013

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Environmental Report on Vinci Ringway's Proposals

Client:	Isle of Wight Council
Report No.:	UE-0100 IoW PFI SEA ER Vinci_6_20130114NPss
Version:	06
Status:	Final
Date:	January 2013
Author:	NEJP
Checked:	SPS
Approved:	NEJP

Cover image: View of St Catherine's Point from Blackgang Road

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Abbreviations

AONB - Area of Outstanding Natural Beauty

BAP - Biodiversity Action Plan

CEMP - Construction Environmental Management Plan

DAMs - Detailed Assessment Matrices

EcIA - Ecological Impact Assessment

HLA - High Level Assessment

HRA - Habitats Regulations Assessment

IoWC - Isle of Wight Council

LNR - Local Nature Reserve

NATA - New Approach to Appraisal

NERC - Natural Environment and Rural Communities Act 2006

NRASWA - New Roads and Street Works Act 1991

SAC - Special Area of Conservation

SEA - Strategic Environmental Assessment

SINC - Site of Importance to Nature Conservation

SMP - Shoreline Management Plan

SPA - Special Protection Areas

SPZ - Source Protection Zone

SSSI - Site of Special Scientific Interest

TMA - Transport Management Act 2004

TPO - Tree Preservation Order

WCA - Wildlife and Countryside Act 1981

WHP - Wight Highways Partnership

Non-Technical Summary

E1 The Isle of Wight Highways PFI

E1.1 The Isle of Wight Highways Private Finance Initiative (PFI) is a procurement initiative to identify a highways Service Provider for a 25 year programme of highways maintenance and operation, scheduled to commence in April 2013. A majority of the Council's existing statutory duties in relation to the highway will be transferred to the Highways PFI Service Provider. The Highways PFI is designed to reverse historic underinvestment in the Isle of Wight's highways network and to revitalise the Island's road infrastructure.

E1.2 The technical requirements of the Highways PFI oblige the Service Provider to return and maintain the condition of the highways network to agreed standards, within its current footprint, for the lifetime of the programme. Initially the programme will focus on upgrades and improvements across the Island's highway network, and in particular to rectify a number of locations that are at risk of failure within the 25 year programme period. Work required at these locations is referred to in this summary as 'capital schemes'. The subsequent focus of the programme switches to routine and cyclical maintenance, including replacement of street lights, street cleansing, roadside verge maintenance, gully cleansing, and reactive repairs.

E1.3 Initially three bidders were shortlisted to provide the Highways PFI services. Through a number of assessment rounds and procurement processes, Vinci Ringway has been recently appointed as the Isle of Wight's Highways PFI Service Provider.

E2 What is Strategic Environmental Assessment?

E2.1 Local Authorities such as the Isle of Wight Council use Strategic Environmental Assessment (SEA) to assess plans against a set of environmental objectives developed in consultation with interested parties and the public (Table 0.1). The purpose of the assessment is to avoid adverse environmental effects and identify opportunities to improve the environmental quality of the Isle of Wight through the Highways PFI. An SEA has been carried out for the Highways PFI, complying with the European Directive 2001/42/EC, known as the SEA Directive "on the assessment of the effects of certain plans and programmes on the environment".

E3 Purpose and content of this Environmental Report

E3.1 This Environmental Report is the third document to be produced as part of the SEA process. The first document was the SEA Scoping Report (released for consultation in October 2011), which sets out information about Isle of Wight's environment and the proposed SEA method. The second document was an internal Technical Note which outlined an initial high level assessment of the activities within the scope of the Highways PFI programme.

E3.2 The purpose of this Environmental Report is to:

- Identify, describe and evaluate the likely significant effects of the Highways PFI; and
- Provide an opportunity for statutory consultees, interested parties and the public to offer views on any aspect of the SEA process which has been carried out to date.

E3.3 The Environmental Report contains:

- An outline of the contents and main objectives of the Highways PFI and its relationship with other relevant policies, plans and programmes;
- Relevant aspects of the current state of the environment and key sustainability issues;
- The SEA Framework of objectives and indicators against which the Highways PFI has been assessed;
- The assessment of the alternative options of the Highways PFI ;
- The likely significant effects of the Highways PFI, in environmental terms;
- The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects as a result of the Highways PFI;
- A description of the measures envisaged concerning monitoring; and
- Recommendations, conclusions and the next steps for the SEA.

E4 Isle of Wight's Environment in Context

E4.1 The Isle of Wight is the largest Island in England and lies off the south coast, extending 37 km from west to east and 21 km from north to south. The two largest settlements on the Island are Newport and Ryde. The other main settlements on the Island include Cowes, East Cowes, Sandown, Shanklin, Ventnor and Freshwater. In November 2009, the population of the Isle of Wight was approximately 142,500[1]. This is projected to increase to 172,500 by 2030[2].

E4.2 The Isle of Wight is characterised by a high quality natural and historic environment. Half the Island is designated an Area of Outstanding Natural Beauty (AONB) and over half of the Island's coastline is designated as Heritage Coast. The high diversity of animals, plants and natural habitats is reflected by the high number of internationally and nationally important nature conservation designations. Many of these designations are centred on the Isle of Wight's maritime cliffs, tidal areas and chalk grasslands.

E4.3 The Island has a rich historic environment which includes well known and important features such as Carisbrooke Castle, Osborne House, Yarmouth Castle and Appuldurcombe House, as well as a wide range of other important features and areas. The Island's rich natural and historic environment attracts large numbers of tourists, and the Island's population more than doubles

[1] IOWC (November 2009) Equality and Diversity document: http://www.iwight.com/equality_and_diversity/documents/Diversity_on_the_Isle_of_Wight_Nov09.pdf
[2] Source: ONS 2006-based sub-national population projections, published June 2008, www.statistics.gov.uk

during the summer holiday season. Additionally, manufacturing, farming and financial and business services have been of growing importance for the Isle of Wight's economy.

E5 Environmental Objectives

E5.1 SEA Objectives are a recognised way of considering the effects of a programme on different environmental 'themes', and for comparing alternatives. In this context the SEA Objectives provide the basis from which effects of the Highways PFI can be tested. The SEA Objectives and the environmental themes to which they relate are presented below in Table 0.1.

Table 0.1: SEA Objectives for the Isle of Wight Highways PFI and the related environmental theme(s).

No.	SEA Objective	Related Environmental Theme
1	Protect, enhance and manage sites, features and areas of archaeological, historical and cultural heritage importance.	*Historic environment*
2	Protect, enhance and manage the character and appearance of the landscape and townscape, maintaining and strengthening distinctiveness and its special qualities.	*Landscape, historic environment*
3	Protect, enhance and manage biodiversity and geodiversity, and the natural processes on which they depend.	*Biodiversity and geodiversity*
4	Maintain and improve the water quality of the Isle of Wight's rivers, coasts and groundwater.	*Water*
5	Conserve the Island's natural resources.	*Material assets, soil, water*
6	Protect and enhance the Island's soils resource.	*Soil*
7	Reduce air pollution and ensure continued improvements to air quality.	*Air quality*
8	Minimise the Island's contribution to climate change.	*Climate change*
9	Plan for the anticipated effects of climate change.	*Climate change, water*
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.	*Accessibility and transport, population*
11	Safeguard and improve community health, safety and well-being.	*Health*

E6 Environmental Information

E6.1 A key part of the scoping process is the collection of up to date environmental information, the purpose of which is to help determine current environmental status and identify key issues and opportunities which might be addressed by the Highways PFI. The Scoping Report provides a review of current social, economic and environmental conditions and illustrates the potential sustainability issues. These issues present the Highways PFI Service Provider with a number of opportunities for achieving environmental gain on the Island.

E6.2 The Highways PFI addresses 18 capital schemes which are clustered around eight different locations (**Figure 0.1**). Within the scope of the Highways PFI, these schemes entail the most intensive engineering and therefore more likely to lead to more significant environmental impacts. Technical drawings of the proposed solutions for the capital schemes are presented in **Appendix X**. To illustrate the point, the capital schemes and key environmental constraints, within 200m, are listed below in Table 0.2Figure 0.1.

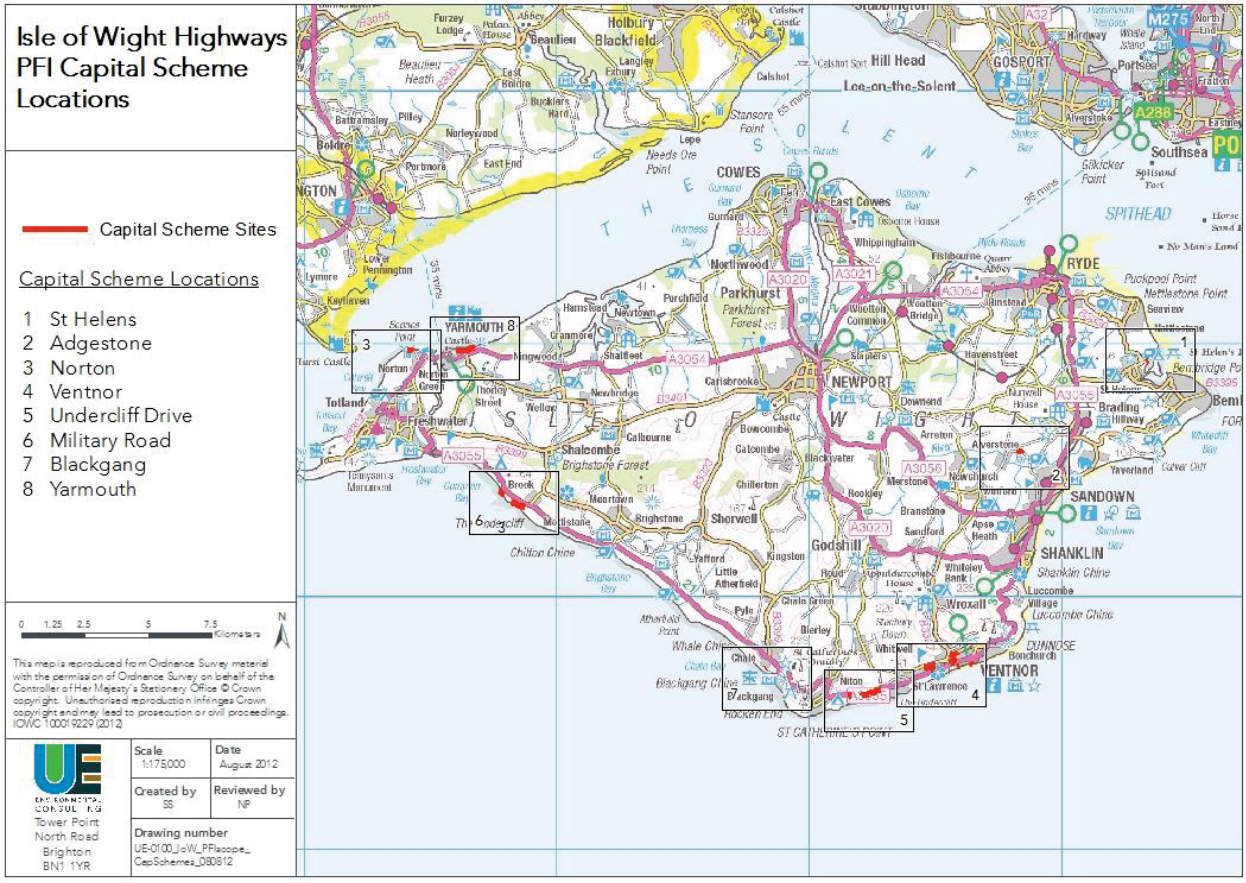

Figure 0.1: Isle of Wight Highways Capital Scheme Locations

Table 0.2: The eighteen capital schemes, their corresponding locations and nearby environmental constraints

Location	Is it within 200m of a SAC, SPA or Ramsar?	Is it within 200m of a SSSI?	Is it located within 200m of a SINC?	Is it within or adjacent to an area of Flood Zone 2 or 3?	Is it adjacent to listed buildings?	Is it within a Conservation Area?	Is it within 200m of an LNR or NNR?	Is it located within or adjacent to an AONB?
St Helens								
Duver Road	Yes	Yes	No	No	No	Yes	No	No
Adgestone								
Lower Road	No	No	Yes	Yes	No	No	No	Yes
Norton								
Westhill Lane (Yarmouth)	Yes	No	Yes	Yes	No	No	No	No
Ventnor and Undercliff Drive								
Newport Road - Upper Ventnor "Graben"	Yes	No	Yes	No	No	No	No	Yes
Gills Cliff Road	No	Yes	No	No	No	No	Yes	Yes
Castle Court	No	Yes	Yes	No	No	No	Yes	No
Whitwell Road	No	Yes	Yes	No	No	No	Yes	Yes
Undercliff Drive (4 sites)	No	Yes	Yes	No	No	No	No	Yes
Urban Footpath south side La Falaise Car Park	Yes	No	Yes	Yes	No	Yes	No	No
Urban Footpath south side of Winter Gardens	Yes	No	Yes	Yes	No	Yes	No	No
Military Road								
Brook Chine	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Shippards Chine	Yes	Yes	Yes	Yes	No	No	No	Yes
Blackgang								
Old Access Road	Yes	Yes	No	No	No	No	No	Yes
The Terrace, Chale	Yes	Yes	No	No	No	No	No	Yes
Yarmouth								
Bouldnor Road	Yes	Yes	No	Yes	No	No	No	Yes

E7 Assessment of Highways PFI Activities and Alternative Options

E7.1 During the SEA process, assessments of the various alternative options were conducted over three rounds of assessment, allowing impacts on the environmental objectives to be analysed and compared.

- A high level assessment of the entire programme of Highway PFI services was undertaken. This resulted in only the capital schemes requiring further assessment, as all other activities within the scope of the Highways PFI were assessed as unlikely to have a significant effect on the environment.
- A further round of high level assessments, considering each of the SEA objectives, was conducted on all the proposed engineering options, for each of the 18 capital schemes. The assessments were conducted on each of the two final Highways PFI bidders' proposals. This process assessed each engineering option for each scheme, identifying those options and schemes likely to lead to significant environmental effects.
- Subsequently, the preferred engineering solutions offered by each bidder that were likely to lead to significant environmental effects, were subject to detailed assessments.

E8 Detailed Assessment of Capital Scheme Preferred Options

E8.1 Ten of the capital scheme solutions proposed by Vinci Ringway were identified as likely to lead to significant environmental effects and therefore were subject to detailed assessments. Meeting the requirements of the SEA Directive, detailed assessments examine the different aspects of a particular proposal to fully explore the mechanisms of any potential environmental effects. At the level that SEAs are undertaken, it is often difficult to assess significant effects in the absence of comprehensive site-specific data. Therefore, levels of magnitude were used to evaluate specific aspects of the Highways PFI proposals, including:

- A description of the predicted effect;
- The duration of the effect: whether the effect is long, medium or short term;
- The frequency of the effect: will it be ongoing?
- Whether the effect is temporary or permanent;
- The geographic significance: whether the effect is of localised, regional, national or international significance;
- The magnitude of effect;
- The severity of significance; and
- Whether mitigation is required/possible to reduce the effect.

E8.2 The boxes below summarise the findings and recommendations from the detailed assessment of the capital schemes. Full results are discussed and shown in **Chapter 6**. **Box 1** summarises the predicted effects on environmental receptors, identified for each capital scheme. Where a scheme proposal has neutral or no impact on a SEA Objective, and its related environmental theme(s), those themes and schemes are omitted from Box 1.

Box 1: Summary of impacts of the preferred solution for capital schemes on the Environment

Impacted Theme	Capital Scheme	Summary of Impacts
Historic Environment	Duver Road, St Helens	Piling works potentially affects listed building, located c. 100m away from scheme.
	Newport Rd, Upper Ventnor 'Graben'	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.
	Undercliff Drive: Area A, Hunts Road	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.
	Undercliff Drive: Area B, Woodlands	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).
	Undercliff Drive: Area C, Caravan park	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.
	Undercliff Drive: Area D, Mirables	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.
	Military Road, Brook Chine	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. The piles may encounter and damage features, if present at

		this location of the road, with negative effects on geodiversity. Investigative excavations may be required to inform detailed design.
	Military Road, Shippards Chine	As per Brook Chine
	Bouldnor Road, Yarmouth	It is possible that artefacts could be encountered and/or damaged, but the likelihood is uncertain.
Landscape, Historic Environment	Duver Road, St Helens	Timber clad facing may impact visual appearance if not in keeping with Conservation Area
	Lower Road, Adgestone	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 in time.
	Newport Rd, Upper Ventnor 'Graben'	Visual impact of new retaining walls and metal steps on the nearby AONB and Conservation Area
	Undercliff Drive: Area B, Woodlands	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 Service Provider has suggested the post construction planting and avoidance of noteworthy trees.
	Undercliff Drive: Area C, Caravan park	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 Service Provider has suggested the incorporation of biodegradable seeded matting to the slope facing.
	Undercliff Drive: Area D, Mirables	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 Service Provider has suggested possible replacement with stone-filled gabion baskets.
	Military Road, Brook Chine	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.
	Military Road, Shippards Chine	As per Brook Chine
	Bouldnor Road, Yarmouth	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 afield conservation area.
Biodiversity and	Duver Road, St Helens	Adjacent to nature conservation designations. Proposed timings of works (including piling) coincide with overwintering birds, which are

Geodiversity		key features of the designated areas. Direct impact from works required in the nature conservation areas will result in some vegetation loss.
	Lower Road, Adgestone	Stabilisation using gabion baskets will destroy some of the habitat in the immediate area, which is within the Alverstone Marshes East (Alverstone Lynch) Site of Importance for Nature Conservation (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.
	Newport Rd, Upper Ventnor 'Graben'	The site is adjacent to a SINC and nearby to several other nature conservation areas. Impacts are likely to be negligible given distance from works but degradation from dust is a possibility as one area has been designated for its species rich plant communities as well as the nationally rare Adonis blue butterfly. Direct impact on the 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 low.
	Undercliff Drive: Area A, Hunts Road	The scheme is partly adjacent (eastern section) to several nature conservation areas, including St Lawrence Undercliff Wildlife Trust Reserve (overlapping areas), and also contain protected trees. 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. The scheme is partly adjacent to a section of the 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
	Undercliff Drive: Area B, Woodlands	The scheme is partly adjacent to the Undercliff SINC (Old Park and Mirables and Old Park) and a tree preservation 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).
	Undercliff Drive: Area C, Caravan park	The scheme is partly within (western section) several nature conservation areas, which also contains protected trees. 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. The scheme is partly adjacent to part of the 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.
	Undercliff Drive: Area D, Mirables	The scheme is within nature conservation areas which also contain protected trees. 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 protected species, which may be impacted by noise and vibration. The scheme is partly adjacent to part of the 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.
	Military Road, Brook Chine	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. 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 existing road where the chine is forming.
	Military Road, Shippards Chine	As per Brook Chine
	Bouldnor Road, Yarmouth	The proposal includes removal of vegetation for access for piling works as well as soil stabilisation. The works schedule coincides with migrant and overwintering birds, meaning that impacts to protect species and their habitats are possible through visual disturbance, and also noise. Construction also extends into the bird breeding season in the first year. The nature conservation area to the 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.
Water	Newport Rd, Upper Ventnor 'Graben'	There are ground water protection zones on site, which are a source of drinking water. There is potential for contamination from a pollution incident, or when relocating sewerage infrastructure.

	Bouldnor Road, Yarmouth	Existing drainage outfalls seaward. There may be an opportunity to divert drainage south into Thorley Brook, with potential (minor) ecological benefits.
Accessibility and Transport, Population	All sites	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 the Island.
Health	All sites	Improves/maintains road safety

E8.3 During the SEA process, activities are recommended to mitigate identified likely impacts. Mitigation may consist of changing a proposal, selecting the least damaging proposal, reducing the scale of the proposal, changing the construction method, relocating a damaging activity, phasing or timing an activity to avoid impacts, and so on. Mitigation measures can then be incorporated into plans, designs or approaches. Site specific mitigation of potential impacts has been recommended for each capital scheme in relation to any significant environmental effects identified. **Box 2** below summarises the main types of mitigation measure for each environmental receptor. Please refer to **Chapters 6 and 7** where mitigation is discussed in full.

Box 2: Summary of Recommendations

Impacted Theme	Example of Mitigation
Historic Environment	▸ Given the relative scale and location (in a built-up area) of proposed works in Ventnor, it is anticipated that impacts can be managed via a Construction Environment Management Plan. ▸ Environmental constraints and receptors outlined in this report will require consideration during detailed project planning. ▸ Where listed buildings have been identified as at risk; consult with English Heritage regarding approach and consent, assess the building(s) at risk, review piling method, protect building to minimise any expected vibrations /dust damage and agree to repair if affected following works. ▸ At Undercliff Drive and Military Road, consult with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations and Archaeological Watching Briefs may be required to inform detailed design and monitor construction.
Landscape, Historic Environment	▸ For visible supporting walls or piles, consult 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. ▸ Supporting wall design should be in line with visual requirements, as agreed with stakeholders, but should avoid gabion walls where possible. ▸ At Newport Rd, the 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. Agree design in consultation with IoWC. ▸ During any soil stabilisation works, minimise vegetation loss / loss of mature trees where possible. Utilise local plant seed mix for reseeding scarp face. Where impacts are likely, consult to seek opinion on requirement for landscape and visual impact assessment.

	▸ At Military Road, consult to seek opinion on requirement for landscape and visual impact assessment, to ensure visual impacts are minimised. Provision may need to be made for eventual removal of piled structures, which is likely to be difficult, costly and complicated by the ecological sensitivity of the area. Surface structures should be relatively straightforward to remove.
Biodiversity and Geodiversity	▸ Given that every capital scheme is adjacent to or within 200m of a nature conservation designation of some kind, it is recommended that the detailed design of each scheme is informed by an ecological survey. This should comprise an Extended Phase 1 Habitat Survey for each scheme. Where the survey finds the presence or potential presence of protect habitats or species, additional and specific surveys should be carried out, and where necessary a full Ecological Impact Assessment undertaken, so that scheme design and programming takes account of the ecological constraints and opportunities of each site. The scope and method of the surveys should be agreed with the Island Ecologist, and where necessary Natural England. ▸ Implementation should avoid mature trees and roots, and use ground protection matting, to reduce impacts protected trees. ▸ At sites where protected species are present or suspected, the appropriate ecological survey(s) will be required, to ensure required site-specific mitigation (based on findings of survey) is implemented, minimising the impact to any protected/priority species/habitat. ▸ Consider an onsite Ecologist during construction works, where appropriate. ▸ Where sites have a potential to disturb breeding birds, the timings of the works should be altered to avoid sensitive periods. ▸ Ecological constraints and receptors outlined in the SEA will require consideration during detailed project planning. ▸ Where schemes are close to Nature Conservation areas, designated for their over wintering bird assemblage, the timings of the works should be altered to avoid sensitive periods (suitable period = Aug - Oct). ▸ Less invasive construction techniques should be used wherever feasible, including for soil stabilisation to reduce potential impacts to birds. At Bouldnor Road, if ground conditions suggest that these techniques are insufficient, works should be supervised by an appropriate Ecologist and avoid work when birds are present at Thorley Brook. ▸ Visual screens such as boarded fences may be required to prevent additional visual disturbance to birds. ▸ Where construction is likely to negatively affect nature conservation areas, detailed mitigation strategies should be devised at the project stage using appropriate techniques, informed by appropriate ecological surveys. ▸ Excavation and construction should be located away from nature conservation areas where possible. ▸ 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. ▸ Where gabion walls are appropriate, they should be planted using native seed mixes to create new habitats and compensate for lost habitat. ▸ For Undercliff Drive and Military Road sites, given the proximity and number of environmental receptors, it is recommended that a Construction Environmental

	Management Plan is used to mitigate potential adverse effects of construction. ▸ The dry stone wall replacement at Undercliff Drive should offer comparable habitat opportunities by adding soil / native seed mix to the gabion baskets. ▸ Works at Undercliff drive, Area D and Brook Chine, may impact important fossil remains and require consultation with Natural England and English Heritage regarding approach to and consent for works. Investigative excavations may be required to inform detailed design. ▸ At Military Road sites, supporting bridge structures should be removed once out of use. Construction, operation and decommissioning could all negatively affect nature conservation areas and will require suitable ecological assessment. ▸ To prevent the spread of non-native and problematic plants, a suitable remediation strategy, and measures to prevent accidental translocation during construction, will be required.
Water	▸ At Newport Rd, 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. 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.

E8.4 During the SEA process, monitoring of likely significant effects is recommended to identify unforeseen adverse effects and ensure mitigation is successful post implementation. **Box 3** below, presents a summary of monitoring measures proposed in relation to each environmental theme. Please refer to **Chapter 6** where full monitoring proposals are listed.

Box 3: Proposed Monitoring

Impacted Theme	Post construction Monitoring
Historic Environment	▸ Post-completion structural inspections of any listed buildings at risk, to check for and remediate damage.
Biodiversity and Geodiversity	▸ Monitoring of species populations and recovery of habitat and vegetative composition, and/or as recommended by project-level assessments and surveys. ▸ At Brook Chine, monitor rate and location of chine development, adjusting life or formation of engineering structures to accommodate areas of most rapid change. ▸ At Bouldnor Road, monitor extent of Japanese knotweed infestation
Water	▸ At Newport Road undertake regular checks for signs of damage to sewer pipes – annual, and after each sudden change in ground levels

E9 Conclusions and Next Steps

E9.1 This SEA Environmental Report presents an assessment of the Isle of Wight Highways PFI proposals and alternatives. The assessment found that the majority of services are not expected to lead to significant environmental effects. However, a variety of positive and negative effects are predicted as a result of the capital scheme solutions for the following sites:

- Duver Road, St Helens;
- Lower Road, Adgestone;
- Newport Road, Upper Ventnor 'Graben';
- Undercliff Drive – all four sites;
- Military Road – both Brook Chine and Shippards Chine; and
- Bouldnor Road, Yarmouth.

E9.2 A range of negative cumulative effects are expected on historic environment assets, landscape character, biodiversity, flora and fauna. Conversely, benefits are anticipated for poverty, social exclusion, community health, well-being and safety. Recommendations are proposed to help avoid or reduce negative effects, together with measures for monitoring post-construction impacts.

E10 Consultation

E10.1 The Environmental Report is being made available for consultation to; Natural England, Environment Agency, English Heritage, Hampshire & Isle of Wight Wildlife Trust, RSPB and the public, for a period of four weeks from 6 March 2013, and can be viewed at:

http://www.iwight.com/highways-pfi/consultation.asp

E10.2 Alternatively hard copies can be viewed at:

County Hall
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E10.3 Responses on this consultation exercise should be sent to jonathan.murphy@iow.gov.uk or to the following address:

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