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Northney Road Path

Ecological Survey

Report Produced by

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1.0 INTRODUCTION

1.1 Brief

ecosupport Ltd was commissioned by Judy Clark on behalf of north east Hayling Residence Association to conduct a Phase I Ecological Survey of the path along Northney Road.

This survey takes no account of seasonal variation and fluctuations in the presence of any species noted that might take up residence following this report. Lack of signs of a particular species does not confirm its absence, merely that there was no indication of its presence during the time of survey.

Data contained within this report will be valid for 24 months, after which the advice of a Suitably Qualified Ecologist must be sought as surveys may require updating if the proposed works have not been undertaken.

1.2 Aim

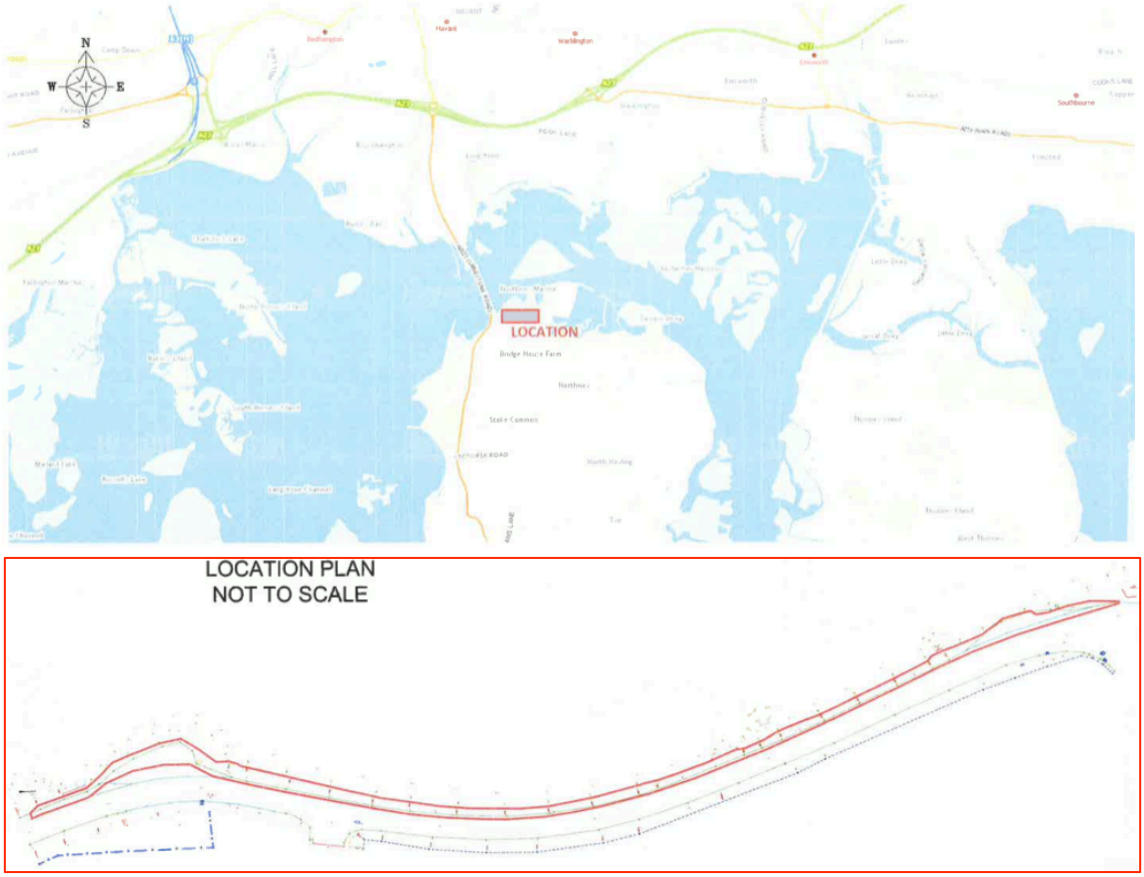
A Phase I Habitat Survey is the first step in assessing the potential ecological effects (or lack of) of a proposed development, and determines whether or not (and which) Phase II Protected Species Surveys are required. The objectives of this survey were as follows:

- Identify current land use and distribution of broad habitat types including plant communities of ecological importance,
- Identify and classify any priority habitats,
- Assess the ecological value of the site
- Identify any signs of protected species and potential features that may support them
- Identify all relevant legislation and policy
- Make recommendations for further survey work as appropriate
- Make recommendations for appropriate enhancements

1.3 Site Location

The existing grass path runs along the north shore of Hayling Island extending approximately 220metres westwards from The Langstone Hotel to the small parking area midway along the northern shoreline (central Grid Reference SU 72392 04122). **Figure 1** below shows the site location.

Figure 1. Location Plan.



1.4 Proposed Scheme

The scheme is to provide a safe route for local residents. The bank will be raised to create a new 1.2m wide path including a kerb edge to the 'parking area'.

2.0 LEGISLATION & POLICY

One of the aims of this report is to demonstrate that the proposed development complies with relevant Planning Policy and nature conservation legislation. This section details the policy and legislation with which the development would need to comply**.**

2.1 Legislation

2.1.1 The Conservation of Habitats and Species Regulations (2010)

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

2.1.2 The Wildlife and Countryside Act (1981) (as amended)

This is the primary piece of legislation by which biodiversity if protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

2.1.3 The Countryside and Rights of Way Act (2000)

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.3 Natural Environment and Rural Communities Act (2006)

This places a duty on authorities to have due regard for biodiversity and nature conservation during the course of a development.

2.2 Policy

The development would seek to comply with relevant Planning Policy at a local, regional and national level.

2.2.1 National Planning Policy and Framework (2012)

This sets out the Government's vision for biodiversity in England. It states that the planning system should maintain, enhance, restore or add to biodiversity and geological conservation interests. Key principles of the framework include the creation, protection, enhancement and management of networks of biodiversity, the

preservation, restoration and recreation of priority habitats and ecological networks and the recovery of priority species populations, including sections on legally protected species.

2.2.2 Havant Borough Core Strategy (2011)

Part of the 'Vision for Havant Borough in 2026' is to protect and enhance biodiversity. Similarly policy 'CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough' states that planning permission will only be granted when development protects habitats and features of biological interest and prevents the fragmentation of existing habitats.

Policy 'CS11 Protecting and Enhancing the Special Environment and Heritage' of Havant Borough Council Core Strategy states. Planning permission will be granted for development that:

- Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
- Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.
- Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map):
  (i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar [International].
  (ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves [National].
  (iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].
- Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and and gardens, archaeological sites, buildings of local historic or architectural interest.
- Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.

- Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.
- Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.
- Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.
- Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.
- Protects the best and most versatile agricultural land that has the greatest potential for local food security.
- Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.

3.0 METHODOLOGY

3.1 Desk Based Search

A search utilizing online resources was undertaken to establish the presence of nearby designated sites.

3.2 Phase I Habitat Survey

The site walkover was carried out by Tristanna Boxall BSc (Hons) (Natural England Class Level 2 Bat and Class Level 1 Great Crested Newt License Holder) of ecosupport Ltd on the 7th November 2017. This incorporated a visual assessment of the site and the surrounding landscape, loosely following the methodology outlined within the Joint Nature Conservation Committees (JNCC) *Phase I habitat survey handbook* (2003). The habitats present were described, paying particular attention to their potential to support protected species.

3.3 Vegetation Survey

The survey was carried out on 26 November 2017 by an experienced vegetation surveyor John Norton. The optimal period for saltmarsh vegetation is late summer to autumn, coinciding with the July to October flowering period for the majority of saltmarsh plants. The date of the survey was too late to record plants in flower, but most of the typical species of saltmarsh habitats were able to be identified on vegetative characters. The surveyor had previously carried out botanical recording along the footpath in July 2011, which provided useful additional information on species present along the route. The records from that visit and the present visit have been combined as an annotated species list (**Appendix I**). Scientific and English names used in this report follow Stace (2010). Older scientific names of plants used in Rodwell's NVC names have been updated.

The survey was carried out during low tide, in sunny conditions. The footpath and both road verges were walked so that the main species present could be recorded. The open saltmarsh adjacent to the footpath was also investigated. Vegetation types were identified visually by their dominant and characteristic species, and assigned to the National Vegetation Classification (NVC) where appropriate (Rodwell 1992, 2000).

4.0 RESULTS

4.1 Desk Based Search

The proposed footpath follows the northern boundary of Hayling Island and the southern edge of Chichester Harbour as it stretches west and joins Langstone Harbour. Chichester and Langstone Harbours have the following designations: Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SPA), RAMSAR and Special Area of Conservation (SAC). It is also adjacent to Solent Maritime SPA.

The features for which Chichester Harbour was designated a SAC include sandbanks which are covered by sea water at all times, estuaries, mudflats and sandflats not covered by seawater at low tide and coastal lagoons. Internationally important wetland types and internationally important numbers of waterbirds were the Ramsar qualifying features. Similarly internationally important numbers of wintering waterbirds, migratory birds and breeding seabirds were the factors that lead to the site being classified as a SPA (Chichester Harbour Conservancy, 2017). The extensive intertidal mudflats are the feeding grounds for internationally important numbers of Ringed Plover (*Charadrius hiaticula*), Grey Plover (*Pluvialis squatarola*), Redshank (*Tringa totanus*), Black-tailed Godwit (*Limosa limosa*), Dunlin (*Calidris alpina*), Sanderling (*Calidris alba*), Curlew (*Numenius arquata*) and Greenshank (*Tringa nebularia*). Bar-tailed Godwit (*Limosa lapponica*) numbers are of European importance. Unimproved permanent pasture provides alternative feeding sites for the geese and major high tide wader roosts. Some of this pasture is floristically rich being a Red Fescue (*Festuca rubra*) sward with scarce species such as Green-winged Orchid (*Orchis morio*) and Adder's Tongue Fern (*Ophioglossum vulgatum*).

Langstone Harbour consists of large, sheltered estuarine basins comprising of extensive sand and mud-flats exposed at low tide. The mud-flats are rich in invertebrates and support extensive beds of algae and Eelgrasses (*Zostera* Sp). The basin contains a wide range of coastal habitats supporting important flora and fauna communities. The site is of particular significance for waterbirds, especially in migration periods and in winter. It also supports important colonies of breeding Terns (*Sternidae Sp*.) (JNCC, 2017a). The harbour includes one of the largest areas of mixed saltmarsh on the south coast, and extensive Cord-grass (*Spartina anglica)*. The harbour is among the twenty most important intertidal areas in Britain as a summer and autumn assembly ground for waders during the moult and as a post-moult wintering ground (Natural England, 2017).

Solent Maritime SPA is designated due to it encompassing a major estuarine system on the south coast of England. Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting Eelgrass and Green Algae, sand and shingle spits, and natural shoreline transitions. The mudflats range from low and

variable salinity in the upper reaches of the estuaries to very sheltered almost fully marine muds in Chichester and Langstone Harbours. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete (*Sabellaria spinulosa)* on the steep eastern side of the entrance to Chichester Harbour. In addition, the site is notified for being the only site for Cord-grass *(Spartina spp.).* The Solent contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. This habitat supports species such as Sea-purslane (*Atriplex portulacoides),* Common Sea-lavender (*Limonium vulgare)* and Thrift (*Armeria maritime)* (JNCC, 2017b).

4.2 Phase I Habitat Survey

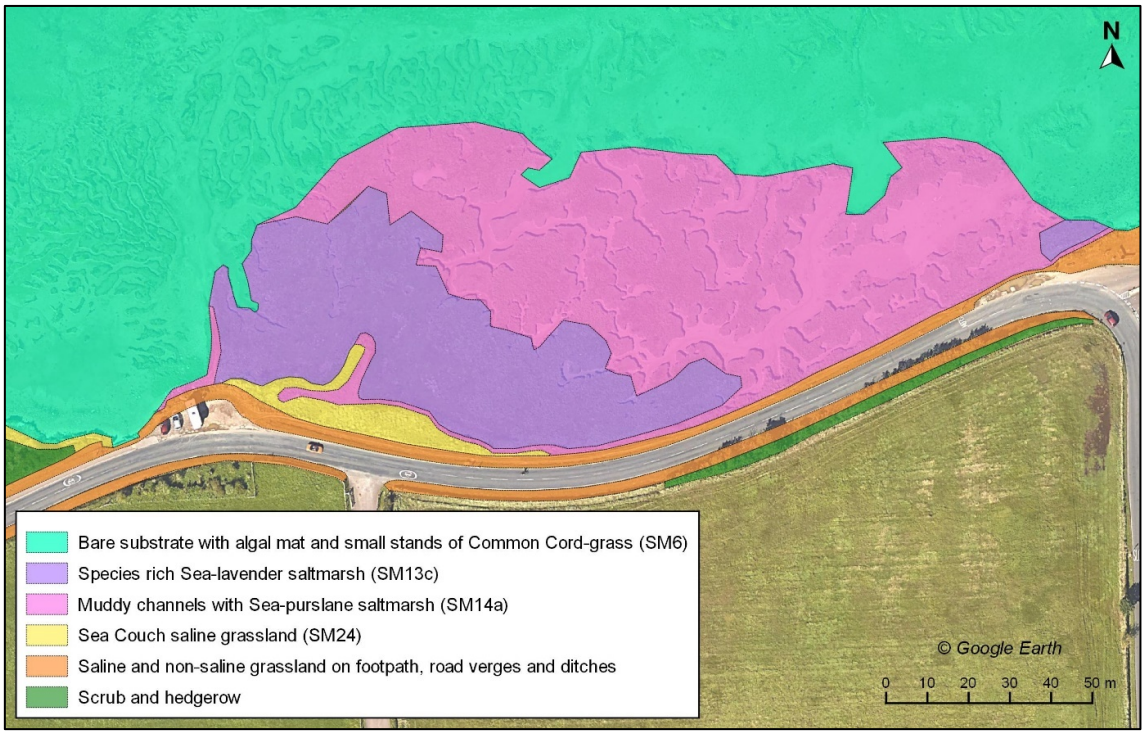
Grassland: On either side of the path there are two narrow strips of grassland. This is relatively herb poor and semi-improved in nature, being dominated by Perennial Rye-grass (*Lolium perenne)*, Creeping Bent (*Agrostis stolonifera)* and other common grasses, with frequent White Clover (*Trifolium repens)*, Spotted Medick (*Medicago arabica)*, Ribwort Plantain (*Plantago lanceolata)*, Dandelion (*Taraxacum)*, and Daisy (*Bellis perennis)*. Wild Carrot (*Daucus carota)* was also noted.

Figure 2. Image of the footpath showing grassland either side.

4.3 Vegetation Survey

Figure 3 below shows the different vegetation groups on, and adjacent to site.

Figure 3. Vegetation Map.



4.3.1 Grassland

The grassland on the road verge is shorter and a little more herb rich, and is likely to support a greater number of annual species and other low-growing herbs. During the July 2011 survey a 20m long linear patch of Divided Sedge (*Carex divisa)* was recorded from the road verge, but its exact location was not noted. Strawberry Clover (*Trifolium fragiferum)* is likely to occur along the road verge (recorded in 2011).

Around the edge of the layby there is a stand of rough grass dominated by Tall Fescue (*Schedonorus arundinaceus)*, with Cock's-foot (*Dactylis glomerata)*, Curled Dock (*Rumex crispus)*, Spear Thistle (*Cirsium vulgare)* and Cow Parsley (*Anthriscus sylvestris)* (**MG12** *Schedonorus arundinaceus* grassland).

At the western end the ditch supports a sward of saline-tolerant Red Fescue (*Festuca rubra)* on the banks and mixtures of rough grass and scattered plants or small clumps of saltmarsh species in the bottom. Species present include Sea-purslane (*Atriplex portulacoides)*, Sea Beet *Beta (Vulgaris* subsp *maritime)*, Sea Aster (*Aster tripolium)* and Sea Rush (*Juncus maritimus)*. There are also several plants of Golden Samphire (*Inula crithmoides)* near to the layby. Sea-purslane is more dominant along the eastern half. The Red Fescue grassland is referable to **SM16** *Festuca rubra* saltmarsh community; the other vegetation represents small patches of the saltmarsh types described below, though Sea Couch grassland is probably dominant.

4.3.2 Saltmarsh Vegetation

The intertidal area to the north of the footpath corridor is mapped approximately in **Figure 1**. To the north-west of the layby there is an area of mudflat predominantly covered by algal mat, with small stands of Common Cord-grass (*Spartina anglica)* near the shore (**SM6** *Spartina anglica* saltmarsh community). To the north of the layby is a narrow 'causeway' of unvegetated stony substrate. Perennial Glasswort (*Sarcocornia perennis)*, recorded during the 2011 survey, was likely to have been seen in this area.

To the east of the layby there is a band of rough grass, strongly dominated by Sea Couch (*Elytrigia atherica)* (**SM24** *Elytrigia atherica* community). This continues next to the footpath for about a third of the route before petering out. Adjacent to this is a narrow strip of saltmarsh dominated by Sea-purslane, with clumps of Golden Samphire along the edge, next to the Sea Couch.

Sea-purslane also dominates large areas of the adjacent saltmarsh where this has been dissected by small creeks and channels, especially adjacent to the eastern half of the route (**Photo 8**). Under the NVC this is referred to as **SM14a** *Atriplex portulacoides* saltmarsh community, sub-community with *Atriplex portulacoides* dominant.

The remaining areas of consolidated saltmarsh comprise a large area adjacent to the western half of the footpath corridor and a small area at the eastern end. This vegetation is partly dominated by Common Saltmarsh-grass (*Puccinellia maritima)*, and partly by a species rich mixture of other saltmarsh species, including Sea Purslane, Common Cord-grass, Sea Aster and Common Sea-lavender (*Limonium vulgare)*. Patches of shorter vegetation support frequent Sea Arrow-grass (*Triglochin maritimum)* and Thrift (*Armeria maritima)*. Other associated species recorded during the 2011 survey include Sea Plantain (*Plantago maritima)* and Greater Sea-spurrey (*Spergularia media)*. This is likely to be classifiable as **SM13c** *Puccinellia maritima* saltmarsh community, *Limonium vulgare-Armeria maritima* sub-community, though some areas may be referable to other sub-communities, including the species poor sub-community dominated by *Puccinellia maritima* (SM13a).

4.4 Limitations

The species list provided is not considered to be exhaustive, instead a record of those identified during the Phase I survey. Similarly, this survey does not constitute a full site assessment for invasive species, such as Japanese Knotweed (*Fallopia japonica*), but no such species were found during the time on site.

5.0 EVALUATION

5.1 Desk Based Search

The site is located within close proximity to Chichester and Langstone Harbours SSSI, SPA, RAMSAR and SAC and Solent Maritime SPA. As a result proposals have the potential to negatively impact upon the qualifying features both directly and indirectly during construction. It is not considered once operational this scheme will result in any significant increased negative impacts, as the path is already operational.

The proximity of the protected sites is taken into full consideration within the supporting Habitat Regulation Screening Report.

5.2 Phase I Survey

Grassland: Due to high exposed location and high levels of human disturbance it is considered unlikely reptiles will be along the path route however a precautionary approach is recommended (see Section 7.0) to ensure suitability is minimal prior to works getting under way, to ensure reptiles are not negatively impacted by proposals.

It is considered likely that bats will be both foraging and commuting along the path.

5.3 Vegetation Survey

5.3.1 On site

The layby, footpath and road verge support mesotrophic (neutral) grassland. This is considered to be of limited botanical value. The vegetation within the ditch largely comprises saltmarsh types that fall under the Atlantic salt meadows definition however this was not considered to be particularly interesting and relatively insignificant in terms of area.

5.3.2 Adjacent

The two main vegetation types on the adjacent saltmarsh, SM13 and SM14, fall under the definition of 'Atlantic salt meadow', an Annex I habitat as defined under international legislation and the UK Habitats Directive and a SAC selection feature. Information from Natural England states that 'the Solent Maritime SAC contains the second largest aggregation of Atlantic salt meadows in south and south western England, representing 33% of the marsh in this region, and almost 3% of England's total saltmarsh resource' (**Appendix II**).

Extensive areas of SM13c are generally rare in the eastern part of the Solent, and this may be one of the largest areas in the Langstone and Chichester Harbour area. Coastal saltmarsh is defined as a Habitat of Principal Importance in England under Section 41 of the NERC Act 2006 (formerly Priority Habitats) (Maddock, 2011). Several of the saltmarsh plants present within the footpath corridor are of local or restricted

distribution nationally. However, this is largely due to the restricted geographical distribution of saltmarsh habitat, which is mostly associated with larger estuaries around the south and east coasts. Several species are also classified as Notable in Hampshire for similar reasons, but are not considered to be so in VC11 (South Hants). These include Divided Sedge, Golden Samphire, Common Sea-lavender and Perennial Glasswort, which are all widespread and locally common in suitable habitats around the coast. Wild Celery is described as 'very local' by the Hampshire Flora (Brewis *et al.* 1996), but is reasonably frequent in the Langstone and Hayling area, being particularly associated with the margins of brackish creeks and ditches.

Divided Sedge is also designated as a S41 Species of Principal Importance in England. This may have been based on its assessment as Vulnerable on the British Red Data list (Cheffings & Farrell 2005); however, it has not been given a threat category on the more recent England Red List of vascular plants (Stroh *et al.* 2014). Common Sea-lavender is classed as Near Threatened on the England Red List, due to a recent 24% decline in area of distribution (Stroh *et al.* 2014). Strawberry Clover is categorised as Vulnerable in England (Stroh *et al.* 2014) due to a recent decline in distribution, but this is likely to have due to declines from inland habitats. In Hampshire it is locally common and widespread in coastal grazing marshes and frequent along road verges in urban areas, where winter salting occurs.

6.0 IMPACTS IN THE ABSENCE OF MITIGATION

6.1 Protected Sites/Adjacent Habitats

Proposals will see an increase in human disturbance, noise, air and potentially water pollution during the construction phase. Without mitigation this would have a likely negative impact upon the designated sites and their qualifying features however given the scale of proposals, this would be highly localized.

6.2 Grassland

It is considered unlikely reptiles will be negatively impacted by proposals however if, in the unlikely event they are present, the stripping of the grassland could result in the death or injury of individuals. This would have a certain negative impact.

The grassland to be stripped is of limited ecological value, therefore the temporary loss will have a negligible impact.

It is considered highly unlikely bats will be negatively impacted, as there are no roosting opportunities to be impacted and all works will take place in day light hours.

6.3 Ditch

The vegetation within the ditch largely comprises saltmarsh types that fall under the Atlantic salt meadows definition. Although proposals will see this vegetation being lost, given the relatively small area to be impacted, this loss is considered to be a certain minor negative impact.

7.0 REQUIREMENTS AND RECOMMENDATIONS

7.1 Proximity of Protected Sites and Adjacent Habitats

Works on site will follow strict procedures to minimise the chance of pollution incidents and also to keep human disturbance and general construction phase associated outputs to a minimal. This will include timings of work (i.e. avoiding the wintering bird season) and best practice for pollution control. Full details are provided within he HRA Screening Report.

It is considered that, with the use of mitigation measures detailed within the HRA Screening document, there would be no likely significant effect on Chichester and Langstone Harbour SPA or SAC or Solent Maritime SPA.

7.2 Grassland

As works will take place outside of winter, as to avoid over wintering birds, it is recommended that from March onwards the grass level, within the area of impact, be reduced and then maintained at the lowest level. This will encourage any potential reptiles away from the area of impact and will then ensure it is not suitable, thus eliminating any potential impacts.

Once the topsoil is put back in place along the path it is recommended that this is covered with natural fibre matting which is a biodegrable erosion control. This will prevent soil washing into the adjacent habitats and will allow the area to be colonized by local plants.

7.3 Compensation for Vegetation Loss

To compensate for the loss of a small area of vegetation associated with the neighbouring designated site, a new area has been highlighted for habitat creation (**Figure 4**).

Figure 4. Location of Compensation Area.

The overall length of the unpiped ditch is about 146m with a dimension of 250-300mm across the base. With an average of 275mm it is considered that the area of habitat

requiring mitigation is approximately 40m^2. The area proposed (**Figure 4**) is about 57m^2.

Within this area excavation will take place to replicate the existing ditch line (i.e. same dimensions). This will create a 16m length of ditch. It is recommended that individual plants be taken from the existing ditch. Once this has taken place soil from within the ditch will be translocated. By translocating the soil, and therefore seedbank, this will likely enable the establishment of similar habitats. The individual plants will then be planted within the new ditch.

Although the length of ditch itself will be less than the existing, the overall mitigation area will be greater than the existing. It is also considered that, given the above approach, the new ditch area will have higher levels of diversity and floral significance. Given the close proximity of the mitigation area to the existing, it will be subject to the same conditions and therefore highly likely to create like-for-like habitats.

It is recommended that this area is subject to monitoring to ensure the successful establishment and to inform any future management.

8.0 CONCLUSION

As the path is already operational, this scheme is not considered likely to result in an increase in recreational pressure. The scheme will result in a small loss of vegetation within the ditch however compensation has been proposed for this. Given the limited area of valuable vegetation to be impacted, considered relatively insignificant in terms of area, it is considered that this is a proportionate approach to compensate for the loss. Impacts associated with construction of the new path have been appropriately assessed within the HRA Screening Report along with the required mitigation. The timings of work will be of paramount importance as to avoid impacts towards wintering birds.

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Appendix I: Plant list

Selected list of plant species recorded on 10 July 2011 by J. Norton and D. Allan. This list includes species recorded from the verges and ditches on both sides of the road and the adjacent saltmarsh. It may also include some species from other habitats to the west and east of the footpath route. Scientific and English names follow Stace's *New Flora of the British Isles*, 3rd edition, 2010. Some of the frequency codes and comments have been updated following the recent survey of 26 November 2017.

Key

Frequency codes (DAFOR)

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally, P = present (frequency was not estimated).

Conservation status codes

CS = County Scarce species on Hampshire Notable Plants list (Rand 2017*b*). Usually species occurring in 42 or fewer 2km squares in the county.

CR = County Rare species on Hampshire Notable Plants list (Rand 2017*b*). Usually species occurring in 10 or fewer 2km squares in the county.

(CS)/(CR) = County Scarce or County Rare in Hampshire but does not meet Notable criteria for VC11 (South Hants), i.e. largely coastal species that are absent from or rare in VC12 (North Hants).

NT = Near Threatened on England Red List of vascular plants (Stroh *et al.* 2014).

NS = Nationally Scarce species (formerly) recorded in 16-100 10km squares of the Ordnance Survey grid in Great Britain.

S41 = species of principal importance in England (S.41 NERC Act 2006) (former UK BAP Priority Species).

VU = Vulnerable on England Red List of vascular plants (Stroh *et al.* 2014).

Species	English name	Status	Freq.	Comments
Grasses, rushes & sedges				
Agrostis stolonifera	Creeping Bent		P	
Arrhenatherum elatius	False Oat-grass		P	
Bromus hordeaceus	Soft-brome		P	
Carex divisa	Divided Sedge	(CS) NS S41	LF	Along 20m of road verge on N side.
Carex otrubae	False Fox-sedge		R	
Dactylis glomerata	Cock's-foot		P	
Elytrigia atherica	Sea Couch		P	
Festuca rubra	Red Fescue		A	Dominant on ditch sides.
Holcus lanatus	Yorkshire-fog		P	
Hordeum murinum	Wall Barley		P	
Juncus gerardii	Saltmarsh Rush		R	
Juncus maritimus	Sea Rush		P	In roadside ditch.
Lolium perenne	Perennial Rye-grass		P	
Phragmites australis	Common Reed		R	Ditch
Poa trivialis	Rough Meadow-grass		P	
Puccinellia distans	Reflexed Saltmarsh-grass	(CS)	R	
Puccinellia maritima	Common Saltmarsh-grass		LA	In saltmarsh.
Schedonorus arundinaceus	Tall Fescue		LD	Dominant in rough grass by layby.

Species	English name	Status	Freq.	Comments
Spartina anglica	Common Cord-grass		LF	In saltmarsh.
Herbs				
Achillea millefolium	Yarrow		P	
Agrimonia eupatoria	Agrimony		LF	
Allium vineale	Wild Onion		P	
Apium graveolens	Wild Celery	(CS)	R	Single plant in ditch S side of road, under hedge at SU 7240 0411.
Armeria maritima	Thrift		P	In saltmarsh.
Arum maculatum	Lords-and-ladies		P	Under hedge.
Aster tripolium	Sea Aster		O	In saltmarsh.
Atriplex glabriuscula	Babington's Orache		R	Upper edge of saltmarsh near to layby.
Atriplex portulacoides	Sea-purslane		LD	In saltmarsh and roadside ditches.
Atriplex prostrata	Spear-leaved Orache		P	In saltmarsh and roadside ditches.
Bellis perennis	Daisy		F	
Beta vulgaris subsp. maritima	Sea Beet		O	
Cerastium fontanum	Common Mouse-ear		P	
Cirsium arvense	Creeping Thistle		P	
Cirsium vulgare	Spear Thistle		P	
Cochlearia danica	Danish Scurvygrass		P	
Daucus carota	Wild Carrot		P	
Erodium moschatum	Musk Stork's-bill		P	
Galium album	Hedge Bedstraw		P	
Galium aparine	Cleavers		P	
Heracleum sphondylium	Hogweed		P	
Inula crithmoides	Golden Samphire	(CS) NS	O-LF	Upper edge of saltmarsh and roadside ditches.
Iris foetidissima	Stinking Iris		P	Under hedge.
Limonium vulgare	Common Sea-lavender	(CS) NT	A	In saltmarsh.
Matricaria discoidea	Pineappleweed		P	
Plantago coronopus	Buck's-horn Plantain		P	
Plantago lanceolata	Ribwort Plantain		P	
Plantago major	Greater Plantain		P	
Plantago maritima	Sea Plantain		P	
Potentilla anserina	Silverweed		P	
Potentilla reptans	Creeping Cinquefoil		P	
Prunella vulgaris	Selfheal		P	
Ranunculus acris	Meadow Buttercup		P	
Rumex crispus	Curled Dock		P	
Sagina apetala	Annual Pearlwort		P	
Sarcocornia perennis	Perennial Glasswort	(CS) NS	P	Probably recorded near to layby on stony area.
Scorzoneroides autumnalis	Autumn Hawkbit		P	
Sonchus asper	Prickly Sow-thistle		P	
Sonchus oleraceus	Smooth Sow-thistle		P	
Spergularia marina	Lesser Sea-spurrey		P	
Spergularia media	Greater Sea-spurrey		O	
Suaeda maritima	Annual Sea-blite		P	
Taraxacum agg.	Dandelion		F	
Trifolium fragiferum	Strawberry Clover	(CR) VU	P	
Trifolium pratense	Red Clover		P	

Species	English name	Status	Freq.	Comments
Trifolium repens	White Clover		A	
Triglochin maritimum	Sea Arrowgrass		F	In saltmarsh.
Tripleurospermum inodorum	Scentless Mayweed		P	
Urtica dioica	Common Nettle		P	
Trees & shrubs				
Crataegus monogyna	Hawthorn		P	
Hedera helix	Ivy		P	
Ligustrum vulgare	Wild Privet		P	
Prunus spinosa	Blackthorn		P	
Rosa canina	Dog Rose		P	
Rubus ulmifolius	Elm-leaved Bramble		P	
Sambucus nigra	Elder		P	
Ulmus procera	Elm		P	

Appendix II: Background information on Atlantic Salt Meadows

From NE Conservation Advice for Marine Protected Areas, Solent Maritime SAC:

https://designatedsites.naturalengland.org.uk/Marine/MarineSiteDetail.aspx?SiteCode=UK0030059&SiteName=&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=#sitemaps

Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Saltmarsh is an important habitat within the Solent ecosystem. It includes Atlantic salt meadows which comprise the following saltmarsh zones: low marsh, low-mid marsh, mid-upper marsh and upper marsh and transitions. The Solent Maritime SAC contains the second largest aggregation of Atlantic salt meadows in south and south western England, representing 33% of the marsh in this region, and almost 3% of England's total saltmarsh resource (English Nature (EN), 2005), (English Nature, 2001).

Typical Atlantic salt meadow habitat is declining in extent, although still widespread in the Solent despite a long history of colonisation by common cordgrass (*Spartina anglica*) (McLeod *et al.*, 2008). The Atlantic salt meadows of the Solent are notable as being representative of the ungrazed type and subsequently support a range of communities dominated by sea purslane (*Halimione portulacoides*), common sea lavender (*Limonium vulgare*) and sea thrift (*Armeria maritima*), as well as common saltmarsh grass (*Puccinellia maritima*) (English Nature (EN), 2005).

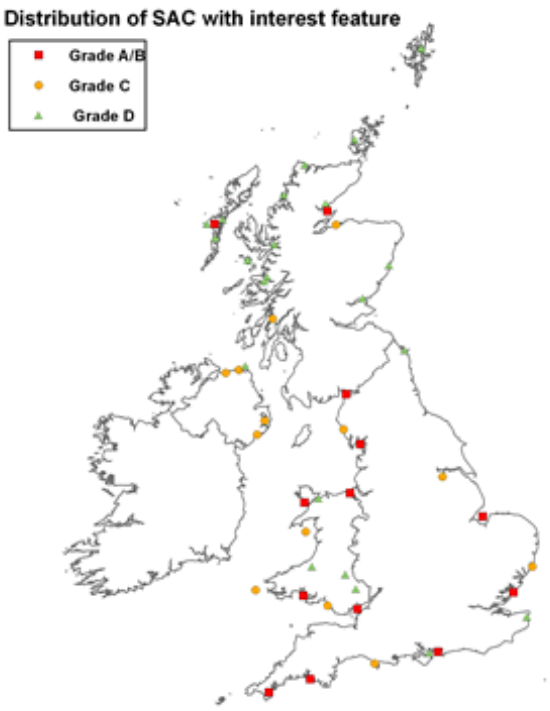
The Atlantic salt meadows in the Solent show rare and unusual transitions to freshwater reedbeds and woodlands as well as coastal grassland (English Nature (EN), 2005). Particularly good examples of these transitions are found in Chichester Harbour, the Hamble Estuary, the Beaulieu Estuary, Yar Estuary, Newtown Harbour, Medina Estuary and at Kings Quay Shore (English Nature, 2001).

Atlantic salt meadow habitat in the Solent provides an important habitat for invertebrate species as well as valuable roosting and feeding areas for internationally important populations of birds (English Nature, 2001).

From JNCC information sheet:

http://jncc.defra.gov.uk/ProtectedSites/SACselection/habitat.asp?FeatureIntCode=h1330

1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)



Distribution of SACs/SCIs/cSACs with habitat 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)**.**

Description and ecological characteristics

Atlantic salt meadows develop when halophytic vegetation colonises soft intertidal sediments of mud and sand in areas protected from strong wave action. This vegetation forms the middle and upper reaches of saltmarshes, where tidal inundation still occurs but with decreasing frequency and duration. A wide range of community types is represented and the saltmarshes can cover large areas, especially where there has been little or no enclosure on the landward side. The vegetation varies with climate and the frequency and duration of tidal inundation. Grazing by domestic livestock is particularly significant in determining the structure and species composition of the habitat type and in determining its relative value for plants, for invertebrates and for wintering or breeding waterfowl. In the UK this Annex I type corresponds to the following NVC types:

- SM10 Transitional low-marsh vegetation
- SM11 *Aster tripolium* var. *discoideus* salt-marsh community
- SM12 Rayed *Aster tripolium* salt-marsh community
- SM13 *Puccinellia maritima* salt-marsh community
- SM14 *Halimione portulacoides* saltmarsh community
- SM15 *Juncus maritimus – Triglochin maritima* salt-marsh community

- SM16 *Festuca rubra* salt-marsh community (coastal examples only)
- SM17 *Artemisia maritima* salt-marsh community
- SM18 *Juncus maritimus* salt-marsh community
- SM19 *Blysmus rufus* salt-marsh community
- SM20 *Eleocharis uniglumis* salt-marsh community.

Inland stands of SM16 are referable to Annex I type **H1340 Inland salt meadows**.

At the lower reaches of the saltmarsh the vegetation is often naturally species-poor and may form an open sward of common saltmarsh-grass *Puccinellia maritima*. Further up the marsh, the vegetation becomes herb-dominated and red fescue *Festuca rubra* becomes more important. The upper saltmarsh shows considerable variation, particularly where there are transitions to other habitats. Communities present may include tussocks of sea rush *Juncus maritimus* dominating a herb-rich vegetation, and saltpans supporting patches of species-poor vegetation dominated by saltmarsh flat-sedge *Blysmus rufus* (in the north) or slender spike-rush *Eleocharis uniglumis*. Grazed saltmarsh in northern Scotland may contain frequent turf fucoid *Fucus cottonii*.

There may be transitions from upper saltmarsh to a number of habitats, including sand dune, machair, coastal shingle, freshwater marshes and woodland. This part of the saltmarsh succession has been particularly vulnerable to destruction by enclosure, usually involving the erection of a sea bank to exclude sea water, and remaining areas are regarded as particularly important for biodiversity conservation.

There are marked regional variations in the **Atlantic salt meadow** communities of the UK. In east and south-east England low to mid-marsh communities predominate, owing to extensive enclosure of the upper marsh. In contrast, the salt meadows of north-west England and south-west Scotland are dominated by extensive areas of grazed upper marsh communities characterised by *Puccinellia maritima* and saltmarsh rush *Juncus gerardii*. Swamp communities are particularly common in the upper marsh in south-west England, while *Juncus maritimus* communities are characteristic of Welsh saltmarshes, and transitional common reed *Phragmites australis* communities are common in south-east Scotland. Some characteristic plant species of southern saltmarshes are absent from Scotland, while others such as sea-purslane *Atriplex portulacoides* have a restricted distribution in northern Britain.

European status and distribution

This Annex I type is predominantly found on Atlantic coasts in western Europe.

UK status and distribution

Atlantic salt meadows occur on North Sea, English Channel and Atlantic shores. There are more than 29,000 ha of the habitat type in the UK, mostly in the large, sheltered estuaries of south-east, south-west and north-west England and in south Wales. Smaller areas of saltmarsh are found in Scotland.

Site selection rationale

Sites have been selected to cover the geographical range and ecological variation of **Atlantic salt meadows** in the UK. The sites selected are for the most part the largest examples of this habitat type, with good structure and function, and which support a well-developed zonation of plant communities within the saltmarsh. There are transitions to other high-quality habitat

assemblages at many of the sites that have been selected. Sites with complete sequences of vegetation and transitions to other habitats, such as sand dunes, represent the range of variation of the habitat type, and this has been an important consideration in site selection.

Site accounts

Solent Maritime **Extra-Regio, Hampshire and Isle of Wight, Surrey, East and West Sussex**
The Solent contains the second-largest aggregation of **Atlantic salt meadows** in south and south-west England. Solent Maritime is a composite site composed of a large number of separate areas of saltmarsh. In contrast to the Severn estuary, the salt meadows at this site are notable as being representative of the ungrazed type and support a different range of communities dominated by sea-purslane *Atriplex portulacoides*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima*. As a whole the site is less truncated by man-made features than other parts of the south coast and shows rare and unusual transitions to freshwater reedswamp and alluvial woodland as well as coastal grassland. Typical **Atlantic salt meadow** is still widespread in this site, despite a long history of colonisation by cord-grass *Spartina* spp.