

Dee Traffic-Free Route

Ecological Desk Study

June 2017



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Executive Summary

Sustrans has been commissioned to undertake a feasibility study for creating a route for walking and cycling beside the Dee Estuary in Flintshire. The proposed route is approximately 3.2km in length and situated between Flint and Rockcliffe (SJ 2506 7305 and SJ 2711 7126). The main route primarily follows existing bridleways and tracks but does include a section along the edge of the coastal marshes. Additional short sections of route are also proposed to improve links with existing networks. The exact engineering solutions are yet to be confirmed.

This report makes a desk-based assessment of likely ecological impacts on nature conservation sites, habitats and protected or notable fauna. As no site visit has been undertaken conclusions in this report are provisional and will need to be verified by a site visit prior to a detailed proposal being developed.

The route is situated through the Dee Estuary SAC, SPA, SSSI and Ramsar site. Disturbance to internationally important bird populations and loss of internationally important habitats have been identified as potential impacts of the proposal. These could be barriers to the creation of the proposed route. Further survey and consultation are recommended to determine what the scale of the impact is and whether they can be avoided or sufficiently mitigated. An alternative has been proposed which will avoid these impacts at the west end of the route. No alternative has been proposed for the central section where disturbance to birds is likely to be a significant issue.

Other potential impacts identified by the proposal are the loss of notable plants, loss of habitat for notable invertebrates, the risk of killing/injuring great crested newts and reptiles during construction, disturbance to nesting birds outside the SPA and disturbance to bat roosts, badger setts and otter holts if present. A walkover survey will be necessary to quantify the likelihood of these impacts and specific surveys for each impact may be necessary.

Current planning policy demands that construction projects not only minimise their ecological impact, but provide enhancements wherever possible. Ecological enhancement measures proportional to the scale of the proposal should be built into the detailed design of the scheme. The walkover survey and consultation will determine appropriate measures for this project.

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1 Background

1.1 Project Introduction

Sustrans has been commissioned to undertake a feasibility study for creating a route for walking and cycling beside the Dee Estuary in Flintshire. The proposed route is approximately 3.2km in length and situated between Flint and Rockcliffe (SJ 2506 7305 and SJ 2711 7126). The main route primarily follows existing bridleways and tracks but does include a section along the edge of the coastal marshes. Additional short sections of route are also proposed to improve links with existing networks. These are shown on Figure 1.1.

In order to provide an initial assessment of the likely ecological constraints of this proposal, a desk study has been conducted. This assesses the possible impacts of the proposed works on nature conservation sites, habitats and protected or notable fauna. This assessment has not included a site visit and does not constitute a Preliminary Ecological Assessment (in accordance with CIEEM guidelines 2013) but provides an overview of possible ecological issues and constraints to the proposed development.

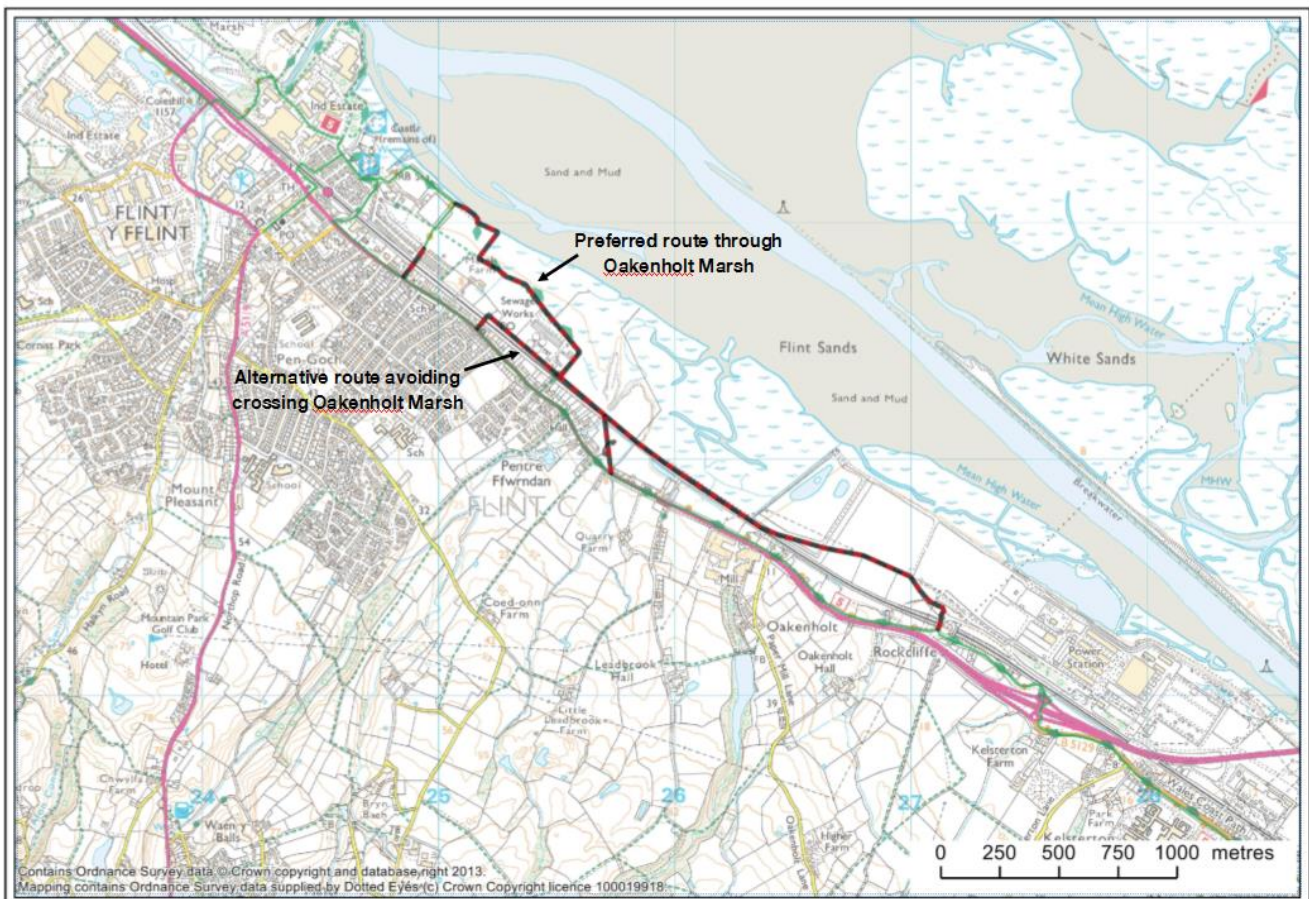


Figure 1.1.

1.2 Ecological Assessment Methods

A desk study has been undertaken to determine likely ecological impacts of the proposal, identify any further ecological assessments required and provide an evaluation of whether any ecological features identified might form a barrier or significant constraint to the proposal.

The desk study comprised a data search, an assessment of the likelihood of ecological features being present and an assessment of potential impacts.

A data search was undertaken to determine the presence of any designated nature conservation sites and protected or notable species recorded near the route. Natural Resources Wales (*MAGIC* website) and Cofnod were contacted to obtain data relating to the route. The following information was determined;

- Designated sites of international importance within a 5km radius of the route;
- Other statutory designated sites within a 1km radius of the route;
- Non-statutory designated sites within a 1km radius of the route;
- Records of protected and notable species within 1km of the route*; and,
- Priority habitats within 1km of the proposed route

*These are species which have European and/or UK Legal Protection, Section 42 (NERC) Species, UK BAP Priority Species, Global Red List, British Red Data Book, Nationally Rare & Scarce, RSPB Red and Amber Birds, Welsh Vascular Plant Red Data List, Local Biodiversity Action Plan (LBAP) Species, and Locally Important Species as identified by local experts.

A Coastal Footpath Investigative Study – Oakenholt to Flint Section was conducted by TACP for Flint County Council. This included consultation with the Royal Society for the Protection of Birds (RSPB) and other stakeholders which has yielded additional information to that provided by Cofnod. It should be noted that this did not include a habitat survey

Aerial mapping and photographs of the route have been used to aid assessments of some of the broad habitat types present. An accurate habitat evaluation cannot be made from a desk based assessment such as this, but can inform where further survey and assessment will be required.

Potential impacts on ecological features from the proposed works have been assessed. Where impacts are anticipated, the value of the ecological feature and scale of the impact have been assessed. This has been undertaken in accordance with CIEEM Guidelines for Ecological Impact Assessment (CIEEM 2016). This is considered in light of current ecological legislation and planning policy and so considers impacts on designated nature conservation sites, protected and notable species and landscape scale impacts such as habitat fragmentation.

This report therefore makes recommendations regarding what implications ecology has on the feasibility of the proposed route creation; what further studies would be required and what measures to avoid, mitigate or compensate for ecological impacts are likely to be necessary.

Current planning policy requires developments to include ecological enhancement measures wherever practical. These should be proportionate to the scale of the development and relevant to the wildlife present in the local area. Opportunities for ecological enhancement have been identified where appropriate throughout this document.

1.3 Constraints

A walkover survey is essential to provide an accurate assessment of the ecological baseline of the site and therefore an accurate assessment of ecological impacts of the proposal (Preliminary Ecological Appraisal guidelines, CIEEM 2013). This assessment should be considered provisional only, to be confirmed subject to a site visit.

2 Baseline Information

2.1 Nature Conservation Sites

Three internationally designated sites have been identified within 5km of the proposed route; the Dee Estuary, Dee and Buckley Newt Sites and Halkyn Mountain. One other site with statutory protection has been identified within 1km of the route; Flint Mountain. Four locally designated sites, Wildlife Sites, have also been identified within 1km of the proposed route. These sites are all summarised below.

Dee Estuary SAC, SPA, Ramsar and SSSI

The route runs within, but along the edge of, the Dee Estuary. This 13,000Ha site has multiple designations. It is of international importance and is designated as a Special Area for Conservation (SAC), Special Protection Area (SPA) and Ramsar site. It is also designated as a Site of Special Scientific Interest (SSSI) and is managed as a nature reserve by the Royal Society for the Protection of Birds (RSPB).

The Dee Estuary encompasses a range of coastal and intertidal habitats including mud flats, lagoons, salt marshes and machair. Other habitats within the designated site include bogs, marshes, grassland and woodland.

The SAC designation has primarily been awarded due to the presence of three Annex I habitats: Mudflats and sandflats not covered by sea water at low tide, *Salicornia* and other annuals colonising mud and sand and Atlantic salt meadows. Seven other Annex I habitats are also present but not a primary reason for the selection of this site, these are estuaries, annual vegetation of drift lines, vegetated sea cliffs and four types of dune habitat. Three Annex II species are also present but not a primary reason for site selection. These are sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis* and petalwort *Petalophyllum ralfsii*.

The SPA designation reflects the year round importance of the site for birds but is particularly important during the winter. In the winter, the intertidal flats and saltmarshes provide feeding and roosting sites for large populations of overwintering ducks and waders. The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl. Over winter the site regularly supports over 130,000 waterfowl. Of particular note are the overwintering population of bar-tailed Godwit *Limosa lapponica* (an Annex I species) and population of European significance of ten other migratory species including shelduck *Tadorna tadorna*, oystercatcher *Haematopus ostralegus* and knot *Calidris canutus*.

In summer the site supports breeding common tern *Sterna hirundo* and little tern *Sterna albifrons*, Annex I species, at populations levels of European importance. The site is also important during migration periods, particularly for wader populations moving along the west coast of Britain. In particular the Annex I species sandwich tern *Sterna sandvicensis* and the migratory species redshank *Tringa tetanus*.

The SSSI citation reiterates the importance of the habitats and the bird populations for which the site has received its international designations but also notes species and populations of national and regional significance. These include;

- Nationally important flocks of cormorant *Phalacrocorax carbo* and great crested grebe *Podiceps cristatus*;
- Nationally scarce plants such as slender hare's-ear *Bupleurum tenuissimum*, rock sea lavender *Limonium britannicum*, Portland spurge *Euphorbia portlandica*, white horehound *Marrubium vulgare* and white mullein *Verbascum lychnitis*;

- Plant species that are regionally scarce or on the edge of their geographic limit, such as saltmarsh flat-sedge *Blasmus rufus* and sea spleenwort *Asplenium marinum*;
- A population of the Red Data Book species, sandhill rustic moth *Luperina nickerlii gueneei*;
- A large herd of grey seal *Halichoerus grypus* of regional interest;
- The presence of breeding reed warblers *Acrocephalus scirpaceus*, a scarce species in North Wales; and,
- The presence of the uncommon fish, smelt *Osmerus eperlanus*.

The Coastal Footpath Investigatory Study (2009) details that, during consultation, the RSPB stated that Oakenholt Marshes were used a high tide roost for black tailed godwit, dunlin, redshank, oystercatcher and knot. It also stated that this marsh was considered most important during winter and migration periods. The reference to Oakenholt Marsh is assumed to refer to the entire marsh area along the coast between Flint and Kelserton.

Dee and Buckley Newt Sites SAC

A series of sites that support one of the largest breeding populations of great crested newt *Triturus cristatus* in Great Britain. The nearest site is situated 2.8km from the proposed route. The site also supports the Annex I habitat: Old sessile oak woods with Ilex and *Blechnum* in the British Isles, although this is not the primary reason for the selection of the site.

Halkyn Mountain SAC

Halkyn Mountain SAC is situated 4.8km from the proposed route. It is primarily designated for its Calaminarian grasslands of the *Violetalia calamariae* and its great crested newt population. It also supports the Annex I habitats: European dry heaths, semi-natural dry grassland and scrubland facies of calcareous substrates and *Molinia* meadows on calcareous, peaty or clayey silt laden soils

Flint Mountain SSSI

Flint Mountain SSSI is located over 950m from the route. This 26Ha site is of special interest for its unimproved neutral grassland and semi-natural broadleaved woodland, which occur in association with scrub, fen-meadow and swamp vegetation. The fen meadow habitat is of regional significance as it is one of only two known sites in northeast Wales and supports locally uncommon species. The neutral grassland has high floristic diversity and supports notable plant species.

Non-Statutory Sites

The four Wildlife Sites situated within 1km of the proposed route are summarised in Table 2.1.

Name	Location and Proximity	Description
Leadbrook Wood	280m	35.1 Ha Semi-natural broad-leaved woodland along Lead Brook. Site also includes herb rich meadows, marshy grassland, swamp and standing water
Flint Marsh	870m	13.6Ha site by the River Dee with patches of woodland and scrub, unimproved calcareous grassland and linear salt marsh.
Cheshire Farm Wood	950m	1.6Ha semi-natural broad-leaved woodland along a stream.
Top-y-fron Dingle and Kelserton Brook	970m	16.4Ha semi-natural broad-leaved woodland in narrow steep-sided steam valleys.

Table 2.1: Local Wildlife Sites within 1km of the proposed route

2.2 Plants and Habitats

Reference to national habitat inventories indicate that two areas of Nationally Important Intertidal Habitat are present within 1km of the route. Intertidal substrates present in the estuary within 1km included mud, shingle, sand and rock. Saltmarsh was also present along the estuary. The preferred route passes through an area of salt marsh and intertidal mud at the west of the route.

Ten woodland units listed in the National Forest Inventory are present within 1km of the route. These are listed as broadleaved or having young trees. Three ancient woodland sites are also present within 1km. These are all along Lead Brook.

Reference to online aerial photography resources indicate that the western section of the preferred route (between SJ 2506 7305 and SJ 2552 7235) will be situated through saltmarsh and mudflat habitats and an area of grassland. Areas of likely scrub and hedgerows are situated along the approximate route. The majority of this section is situated on a bridleway, but the route appears to deviate from this for a 150m section. The character of the bridleway is not known at the time of writing.

The central section of the route, located between SJ 2520 7259 and SJ 2639 7172, follows the line of an active railway line. The exact alignment is not known but is anticipated to be on the embankment itself for at least the section between SJ 2587 7207 and SJ 2633 7178 where the salt marsh is situated right to the base of the railway embankment and the route crosses a watercourse at Pentyr Bridge (SJ 2587 7207). The character of habitats along the railway embankment are unknown but do include some trees.

The eastern section of the route, between SJ 2633 7178 and SJ 2711 7126, is situated on existing tracks and roads. The surfacing of these and vegetation they might support is not known. The adjacent habitats include trees, scrub and agricultural fields.

Records of twenty notable or invasive non-native plant species occurring within 1km of the route were provided by Cofnod, seven of which were situated in close proximity to the proposed path. A record of native black poplar *Populus nigra betulifolia* has been provided from a location in close proximity to the proposed route, at approximately SJ 264 716. Records of three notable plant species were provided from SJ 250 730 in close proximity to the route at its western end; Brackish water crowfoot *Ranunculus baudotii*, parsley water dropwort *Oenanthe lachenalii* and sea rush *Juncus maritimus*. Common cordgrass *Spartina anglica* was recorded in multiple locations in the salt marsh habitat including close to route at SJ252728. Distant sedge *Carex remota* was recorded in this same location and Elecampne *Inula helenium* was recorded at SJ268716.

A variety of other notable plants identified in the area could also occur in the salt marsh or trampled habitats along the track. These included cudweeds *Filago* sp., Keeled-fruited Cornsalad *Valerianella carinata* or Prickly Lettuce *Lactuca serriola*.

A record of the invasive non-native species Himalayan balsam *Impatiens glandulifera* has also been provided although this was located approximately 1km from the proposed route.

2.3 Fauna

2.3.1 Invertebrates

Records of twenty-five notable invertebrate species were provided by Cofnod. These included five bee species, seventeen butterflies and moths, a water beetle *Hygrotus nigrolineatus* and two non native species (a barnacle *Austrominius modestus* and the Chinese mitten crab *Erinocheir sinensis*).

Without a detailed route design and habitat survey, the importance of habitats within the works footprint to be invertebrates cannot be determined.

Some generalisations can be made in relation to features known to be present along the proposed route. The saltmarsh and mudflats are likely to be important habitats for invertebrates, including species that are frequently under-recorded. The thin, linear, boundary habitat between the saltmarsh and freshwater habitats could also be important for invertebrates. The embankment on which the adjacent railway is situated could provide nesting habitat for some bee species and other burrowing hymenoptera, although the south facing embankment may provide more suitable habitat.

2.3.2 Amphibians

The desk study identified a single smooth newt *Lissotriton vulgaris* record within 1km of the proposed route. No other amphibian records have been provided but great crested newt populations of European significance are present in SAC situated 2.8km south east and 4.8km southwest of the route.

Parts of the route is situated through saline habitats with brackish or saline waterbodies unlikely to be suitable for use by breeding great crested newts. Reference to Ordinance Survey mapping indicates that ponds are present on the south of the adjacent railway line (SJ 2594 7195) and on the landside of sea walls (a group of three ponds centred at SJ 2661 7183). Without a field survey it must be assumed that these could provide suitable breeding habitat for great crested newts. The presence of great crested newts in the proposed works area cannot be ruled out without a survey for this species in these ponds.

2.3.3 Birds

Given the proximity of the Dee Estuary Special Protection Area (SPA), Ramsar and RSPB reserve, a large number of bird records were provided.

As described in Section 2.1 the Dee Estuary is of international importance for wildfowl and waders throughout the year. The route is situated through and adjacent to salt marsh and mudflats that may be significant to these important bird populations, although it should be noted that the SPA is over 13,000Ha in size and habitats throughout this area will vary in their importance.

A variety of other species may use the salt marsh and coastal habitats for foraging and nesting including species afforded additional protection whilst nesting under Schedule 1 of the Wildlife and Countryside Act (1981) such as short eared owl *Asio flammeus* and hen harrier *Circus cyaneus*.

Along the whole route, trees, scrub and hedgerows will be used by nesting and foraging birds.

2.3.4 Fish

Records of five notable fish species including eel *Anguilla anguilla* were provided by the data search. These may be present in the channels within the saltmarsh, including the river that the route will cross at Pentyr Bridge (SJ 2570 7218).

2.3.5 Mammals

No records of marine mammal species were provided by the data search but it is considered likely that they will be present locally and without a field survey it must be assumed that there is potential for seals to use the channels in the salt marsh for resting.

Badger *Meles meles* records have been provided throughout the landscape, including some within 150m of the proposed route. Habitats not regularly inundated by the sea may provide sett building habitat for badgers. This includes the railway embankment and along hedgerows and banks on the land side of the food defences.

Records included two bat species, common Pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. This is considered likely to be an under-representation. European protected species licences have been issued for common pipistrelles, brown long eared bat *Plecotus auritus* and daubenton's bat *Myotis daubentonii* within 10km of the site. It is considered likely that species

forage over the saltmarsh or along the margins where shrubs, hedgerows and trees are present. Trees may have features that could be used by roosting bats. At least one river flows under the railway line and the culvert in this location could also be used by roosting bats.

Records of otter *Lutra lutra* have been provided and this species may forage across the salt marsh and in rivers and streams through the landscape.

Other terrestrial mammal species recorded included two species which have protection through the planning process though inclusion in the list of Species of Principal Importance in the NERC (2006) Act (hedgehog *Erinaceus europaeus*, and polecat *Mustela putorius*) and the yellow necked mouse *Apodemus flavicollis* a local Biodiversity Action Plan species. These species may forage through the landscape in which the route is situated.

2.3.6 Reptiles

A single common lizard *Zootoca vivipara* record was provided by Cofnod. Although this was not situated in close proximity to the route, it is anticipated that habitats along the route may be suitable for this species and other reptiles.

3 Anticipated Impacts

3.1 Plants and habitats

The proposed route construction will inevitably result in some habitat loss. The importance of habitats present along the route cannot be determined without a site visit.

The preferred route will pass through salt marsh and mud flat habitats in the western half of the route (between SJ 2506 7305 and SJ 2560 7245). Mudflats not covered by water at high tide, *Salicornia* and other annuals colonising mud and Atlantic salt meadows are an Annex I habitat and a primary reason for the international designation of the site (as a SAC). As such the work has potential to cause the loss of internationally important habitat, however, the path will mainly be situated on the route of an existing bridleway. The extent and proportion of habitat loss is not known and is not considered likely to be significant unless the footprint of the works contained particularly significant species or sections of habitat or the path design caused long-term impacts on the surrounding habitat by altering the local hydrology. Notable plant species do occur in close proximity to the route. The detailed design of the path through this habitat will need to avoid areas of habitat of particular note, avoid populations of notable species and avoid any long-term impacts through small scale hydrological changes. Given that this section of the proposal is situated within a SSSI and SAC, early consultation with Natural Resources Wales (NRW) is recommended and the detailed design will need to be informed by a botanical survey. If significant impacts are anticipated on these sites, permission will not be granted for the proposal. Alternative routes have been proposed that would avoid direct impacts on the saltmarsh and mudflat habitats.

It has been assumed from plans that the route will be situated on the railway embankment adjacent to the salt marsh in the central section of the route (between SJ 2587 7207 and SJ 2633 7178). If this is not the case and construction is anticipated at the base of the embankment impacts will be as discussed above.

Elsewhere, habitats are considered less likely to be important, but this cannot be determined without a field survey. Habitats could include species rich grassland, narrow boundary habitats between the coastal and freshwater habitats or notable tree specimens. Notable species have been recorded in close proximity to the route outside the saltmarsh habitat and could occur even within the trampled habitats along the path. A field survey will be necessary to determine the impact on habitats and notable flora.

3.2 Fauna

3.2.1 Invertebrates

The impact on invertebrates cannot be assessed without a field survey that assesses the likely importance of habitats along the route for invertebrates. Possible impacts could be the loss of saltmarsh and mudflat habitats in the west of the route, loss of herb rich habitats elsewhere or loss of potential nesting habitats for hymenoptera on the railway embankment.

3.2.2 Amphibians

Great crested newt have been identified as being potentially present within the proposed works area. A site walkover will be necessary to determine whether there is a risk of killing/injuring this species during work in contravention of current legislation and a species specific survey is likely to be required. Assuming individual newts can be protected during works it is considered unlikely that the proposed path creation would have a long-term impact on the conservation status of this species locally. This is because the path would not constitute a barrier to movement and is considered unlikely to result in the loss of a significant proportion of the available foraging habitat. It is therefore considered likely that a European Protected Species licence would be granted for the proposal and that this will not pose a significant barrier to the proposal.

3.2.3 Birds

The increase in recreational use adjacent to the saltmarsh in the western and central sections of the route could result in increased disturbance to birds roosting and nesting on the marsh. The Coastal Footpath Investigatory Study (2009) details that during consultation, the RSPB stated that they would anticipate the levels of disturbance to birds on Oakenholt Marsh to be such that it would result in a negative impact to populations for which the SPA and SSSI have been designated. This was considering not only the current patterns of use by birds but also considering changing patterns of use in the future especially in relation to rising water levels anticipated due to climate change. If disturbance cannot be avoided permission would not be granted for this proposal.

During that consultation The RSPB stated that they considered it extremely unlikely that this impact could be sufficiently mitigated. The installation of screening had been discussed but the RSPB had concerns that this would not be sufficient to avoid disturbance and that screening would also impact important habitats in the SAC.

An alternative route has been proposed which avoids crossing the marsh in the western section of the route. This will avoid disturbance to birds in this location.

No alternative has been proposed to the middle section of the route which runs alongside the marsh alongside the railway line. It is assumed that the route is situated off the marsh on the railway land and it may be possible to install sufficient screening to enable this section of route to be created without long-term disturbance to birds on the marsh. Alternatively, route options on the southern side of the railway where users would not be visible against the skyline should be investigated, for example along the existing bridleway.

In order to proceed with the current alignment, it is recommended that this consultation exercise is repeated. This is to determine if the situation has altered since that time – this may in relation to;

- Changes in current and predicted bird use of the site;
- Changes in the existing recreational use of the site;
- Changes in the understanding of bird disturbance from recreation; or,
- Learning from elsewhere on how to implement access schemes that avoid disturbance to birds.

Additional surveys and research may be necessary to inform the assessment of impacts. A screening exercise will need to be undertaken to determine the need for an Appropriate Assessment. The screening exercise undertaken in 2009 indicated that an Appropriate Assessment would be likely to be necessary.

3.2.4 Fish

No impacts on watercourses or water bodies, and therefore fish populations, are anticipated from the proposal.

3.2.5 Mammals

It is considered unlikely that the proposal will result in significant loss of habitat or habitat fragmentation for mammals. The only risks identified in relation to mammals are;

- The loss of potential bat roosts if trees with potential bat roost features must be removed;
- The potential for badger setts to be damaged and badgers disturbed if setts were present along the proposed route;
- Disturbance to otters if holts, particularly breeding holts, were located in close proximity to the works;

- Possible disturbance to nesting/hibernating hedgehogs dependent on habitats disturbed and timing of works.

The likelihood of these impacts occurring can be clarified once a site walkover survey has been undertaken.

3.2.6 Reptiles

The route will be situated through suitable reptile habitat. The proposal would not be anticipated to fragment or significantly reduce habitat for reptiles, but has potential to kill/injure individuals during construction. Dependent on the habitats in the works footprint, there may also be the additional risk of destroying reptile hibernacula. It is anticipated that these impacts can be readily avoided and compensated.

4 Conclusions and Recommendations

The route is situated through the Dee Estuary SAC, SPA, SSSI and Ramsar site. Disturbance to internationally important bird populations and loss of internationally important habitats have been identified as potential impacts of the proposal. These are discussed in more detail below, but could be barriers to the creation of the preferred route. Previous consultation with the RSPB indicate that disturbance to birds is very likely to be a barrier to the development of the preferred route.

Disturbance to birds

The main ecological constraint for the proposal is the anticipated disturbance to birds using Oakenholt Marsh in the Dee Estuary. Previous consultation (in 2009) with the RSPB indicated that it was likely that anticipated levels of disturbance to birds could not be sufficiently mitigated to allow the development to proceed. Whilst an alternative route has been proposed for the section through the marsh at the west of the route, no alternative has been proposed for the central section.

In order to proceed with the current alignment, it is recommended that this consultation exercise is repeated. This is to determine if the situation has altered since that time. Additional surveys and research may be necessary to inform the assessment of impacts. A screening exercise will need to be undertaken to determine the need for an Appropriate Assessment. The screening exercise undertaken in 2009 indicated that an Appropriate Assessment would be likely to be necessary.

It is anticipated that the consultation and necessary surveys and assessments may be costly and if disturbance that negatively impacts the bird populations in the SPA cannot be avoided, permission for this scheme will not be granted. Dependent on the initial consultation results it may be more cost effective to investigate alternative alignments, for example along the existing bridleway or opposite side of the railway line.

Habitat Loss

A second notable consideration is the potential loss of important habitat where the path is situated in saltmarsh habitat. It is anticipated that the habitat loss could be significantly reduced by locating the route along the existing bridleway, which appears from aerial mapping to be outside the saltmarsh although this must be confirmed by a site visit. This could be anticipated in the western section of the route between SJ 2506 7305 and SJ 2560 7245. It is assumed that the route in the central section is along the railway embankment and that no loss of saltmarsh habitat would occur in this section.

As no field survey has been conducted the extent and proportion of habitat loss is not known. Impacts are not considered likely to be significant unless the footprint of the works contained notable species, notable sections of habitat or if it altered the local hydrology. Notable plant species are known to occur in close proximity to the route.

A detailed botanical survey and early consultation with Natural Resources Wales (NRW) will be required to determine likely impacts on the habitats for which the SAC is designated. A screening exercise, and potentially a full Appropriate Assessment, will be necessary for this proposal. If significant impacts are anticipated to the habitats, permission will not be granted for the preferred route. An alternative route has been proposed that would avoid direct impacts on the saltmarsh and mudflat habitats.

Other protected species issues

Other impacts identified by the proposal are;

- Potential impacts on notable plant species outside the designated sites – the likelihood of this impact occurring will be informed by a walkover survey and if necessary a detailed botanical study;

- Potential impacts on notable invertebrates outside the designated sites – the likelihood of this impact occurring will be informed by a walkover survey and if necessary targeted surveys;
- Risk of injuring/killing great crested newts during construction. A site walkover survey is necessary to determine the risk to this species from the proposal. It is anticipated that presence/absence surveys will be necessary.
- Disturbance to birds nesting outside the designated sites if construction is undertaken during the breeding season. Breaches in legislation could be readily avoided through timing of works;
- Disturbance to bat roosts, badger setts, otter holts and nesting/hibernating hedgehogs if these are present along the route. A walkover survey will determine the likelihood of these being present and what additional surveys are necessary.
- Measures to protect reptiles during construction will be necessary unless surveys are undertaken that show them to be unlikely to be present along the route.

Current planning policy demands that construction projects not only minimise their ecological impact, but provide enhancements wherever possible. Ecological enhancement measures proportional to the scale of the proposal should be built into the detailed design of the scheme. The walkover survey and consultation will determine appropriate measures for this project.

5 Index and Bibliography

CIEEM (2016) *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland, Terrestrial, Freshwater and Coastal*. Institute of Ecology and Environmental Management

CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*. Institute of Ecology and Environmental Management.

Cofnod (June 2017) *Deeside Path Ecological Data search*

Defra (2007) *An Introductory Guide to Valuing Ecosystem Services*. PB12852. Defra, London.

Institute of Environmental Assessment (1995) *Guidelines for Baseline Ecological Assessment*. E&FN Spon. London.

JNCC (2010) *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. Joint Nature Conservation Committee, Peterborough.

MAGIC (Accessed June 2016) website: www.magic.gov.uk Multi-Agency Geographical Information for the Countryside.

Natural Environment and Rural Communities (NERC) Act (2006)

http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

RSPB (2009) *Birds of Conservation Concern 3*; RSPB, Sandy, Beds

RSPB (2009) *Birds of Conservation Concern 3*; RSPB, Sandy, Beds

TACP (2009) *Flintshire County Council Coastal Footpath investigative Study – Oakenholt to Flint Section*