

Welsh Government

M4 Corridor around Newport

Environmental Statement Volume

3:

Appendix 10.10 Hedgehog
Survey

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M4 Corridor Around Newport

Hedgehog Survey Report 2014

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Contents

	Page
1 Introduction	1
1.1 Background to the Project	1
1.2 Survey Objectives	2
1.3 Study Area	2
1.4 Legislation and Policy	3
2 Methodology	4
2.1 Desk Study	4
2.2 Survey methodology	4
2.3 Limitations and assumptions	5
3 Baseline Environment	6
3.1 Desk Study	6
3.2 Field Surveys	6
3.3 Incidental Sightings	13
4 Conclusions and Recommendations	13
4.1 Recommendations	13

References

Drawings

M4 Hedgehog Tunnel Locations 2014
Incidental Hedgehog Sightings

1 Introduction

Ove Arup & Partners Ltd has been commissioned by Welsh Government to undertake baseline ecological surveys to inform proposals for the M4 Corridor around Newport. Should the Welsh Government adopt its draft Plan, this report provides information to inform the development of the scheme, including a Design Manual for Road and Bridges (DMRB) Stage 3 environmental assessment (HA, 1993).

This report identifies the presence of important habitat areas for the European hedgehog (*Erinaceus europaeus*).

Where appropriate, recommendations are made for further surveys to inform the development of the scheme.

1.1 Background to the Project

The M4 in South Wales forms part of the Trans-European Transport Network (TEN-T), which provides connections throughout Europe by road, rail, sea and air. The M4 plays a key strategic role in connecting South Wales with the rest of Europe, providing links to Ireland via the ports in South West Wales and England and mainland Europe to the east. It is a key east-west route being the main gateway into South Wales and also one of the most heavily used roads in Wales.

Providing a facility for transporting goods, linking people to jobs and employment sites as well as serving the Welsh tourism industry, the M4 is critical to the Welsh economy. Cardiff, Newport and Swansea have ambitious regeneration strategies and Monmouthshire County Council is developing areas around Junction 23A of the M4. Rhondda Cynon Taff has important gateways onto the motorway at Junctions 32 and 34. Bridgend is served by M4 Junctions 35 and 36. Neath Port Talbot straddles the motorway and gets important access from Junctions 38 to 43. Congestion on the M4 causing unreliable journey times and reduced service levels will therefore hinder economic development in South Wales.

The M4 between Junctions 28 and 24 was originally designed as the 'Newport Bypass' with further design amendments in the 1960s to include the first motorway tunnels to be built in the UK.

The M4 Motorway between Magor and Castleton does not meet modern motorway design standards. This section of the M4 has many lane drops and lane gains, resulting in some two-lane sections, an intermittent hard shoulder and frequent junctions.

It is often congested, especially during weekday peak periods resulting in slow and unreliable journey times and stop-start conditions with incidents frequently causing delays.

This is why problems with congestion and unreliable journey times have been a fact of life on the M4 around Newport for many years. The motorway and surrounding highway network does not cope with sudden changes in demand or operation, for example as a result of accidents or extreme weather events. These issues are worse at times of peak travel (rush hour) and have worsened as the number of users on the network has increased.

Since 1991, much assessment and consultation has been undertaken to develop a preferred solution to the problems on the motorway around Newport. A detailed history is documented in the M4 Corridor around Newport WelTAG (WG, 2008) Stage 1 (Strategy Level) Appraisal Report (Ove Arup & Partners Ltd, 2013). This included the adoption of a revised TR111 route¹ in April 2006, which remains protected for planning purposes. The alignment of this proposed new section of motorway has been developed following extensive consultation, investigation and analysis. The aim was to minimise the impact on the environment, whilst fully meeting motorway design and safety standards. The main element of the Plan (the Black Route) largely follows this TR111 alignment.

The survey design is informed by the Route Options defined in the Stage 2 DRMB Environmental Report (Ove Arup & Partners Ltd, 2014).

1.2 Survey Objectives

The objectives of the study were:

- To determine the presence and distribution of hedgehogs within the Study Area;
- To identify potential constraints and opportunities that hedgehogs may pose to any scheme;
- To identify further studies that may be required to ensure that hedgehogs are fully considered within the scheme.

1.3 Study Area

The study area for the purpose of this survey was based on a 500m buffer around the physical extents of the previous scheme studied in 2007/8 including both the route alignment, potential junctions and water treatment areas. The Preferred Route announced by Welsh Government in July 2014 is located within the centre of this corridor as shown on Figure 1.

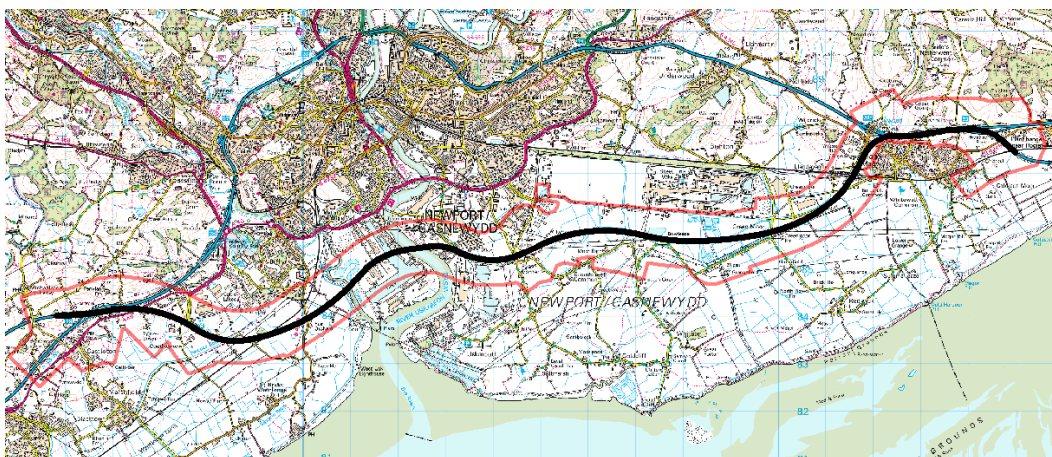


Figure 1 The 2014 Preferred Route within the Study area shown in red.

¹ Once a preferred route is announced, Welsh Government serves a statutory notice (TR111) on the local planning authorities requiring the line to be protected from development. This is enacted under Article 19 of The Town & Country Planning (Development Management Procedure) (Wales) Order 2012.

1.4 Legislation and Policy

Hedgehogs receive only limited legal protection under Schedule 6 of the Wildlife and Countryside Act (1981) meaning they may not be killed or trapped by certain methods.

Hedgehog were included UK Biodiversity Action Plan (UK BAP) priority species. UK BAP priority species were those that were identified as being the most threatened and requiring conservation. The UK BAP is now focussed at a country-level and was succeeded by the UK Post-2010 Biodiversity Framework. As a result, Hedgehog are listed in the Welsh Government's list of species of principal importance for the conservation of biological diversity in Wales (Wales Biodiversity Partnership, 2012) which was published in response to Section 42 of the Natural Environment & Rural communities Act 2006.

2 Methodology

2.1 Desk Study

Historical data was supplied by SEWBReC (South East Wales Biodiversity Records Centre) in December 2013.

2.2 Survey methodology

The National Hedgehog Survey (The Mammal Society, 2012) was used for the surveys, although was adapted to determine presence/absence only rather than abundance. This involved a reduced density of tunnels located along the centreline of the Study Area.

The survey involved the use of foot print tunnels, ink, paper and bait to record animal track and prints. This method was developed at Nottingham Trent University to replace the spotlight transect survey method. Ten tunnels were placed along the route corridor in areas that may be suitable for hedgehogs. Surveys were carried out in May and September 2014.

Table 1 summarises these locations which are also shown on Drawing M4-OA-01-00-DR-Z-HG-0001.

Table 1 Locations of hedgehog tunnels within the survey area

Name	Location	Grid Reference	Habitat type
Tunnel 1	Pound Hill	ST 26268 84152	Woodland
Tunnel 2	Woodland near Church Lane	ST 27479 83879	Woodland
Tunnel 3	Compound near Green Lane	ST 29080 83392	Scrub
Tunnel 4	Ebbw (Heol Pont-Y-Cwch)	ST 30632 84222	Hedgerow adjacent to farmland
Tunnel 5 (May)	National Cycle Network 4 near Corporation Road	ST 33239 85440	Scrub and footpath
Tunnel 5 (Sept)	Near Pye Corner National Cycle Network 4	ST 34201 85128	Scrub
Tunnel 6	TATA Steel Reed Beds	ST 36139 85997	Scrub
Tunnel 7	TATA Steel Pump House	ST 38414 85896	Scrub
Tunnel 8	Queen's Way/Whitewall	ST 41319 86647	Hedgerow and scrub by farmland by road verge
Tunnel 9	Field opposite Gwent Police Station, Newport Road	ST 41926 87688	Farmland, silage bales
Tunnel 10	Woodland north of M4, near The Elms	ST 43704 87976	Woodland

Tunnels were first set up on 18th May. GPS locations and photographs were taken to aid with re-locating the tunnels and the tunnels were baited (pieces of sausage and seeds) out. Five consecutive daily checks took place from 19th to 23th May 2014 and tunnels were retrieved on the final day. On each of the checking days, two A4 sheets of paper were removed from each tunnel and replaced. Bait was replaced each day and old bait removed.

Data recorded each day included the presence of prints and droppings, evidence of tunnel disturbance and whether bait was taken or remained in place. Data were captured via tablet computer.

In September, nine of tunnels were set up on 8th September in the locations shown on Drawing M4-OA-01-00-DR-Z-HG-0. GPS locations and photographs were again taken to aid with re-locating the tunnels and baits were laid out. Five consecutive checks took place from 8th to 12th September 2014 and were retrieved on the final day.

2.3 Limitations and assumptions

2.3.1 Limitation During May Survey Session

Due to an issue with land access, Tunnel 6 was set up on Monday 19 May 2014 and was checked for four days. A motion sensing camera trap was set up on Tuesday 20 May to record activity on this site.

As a result of vandalism, surveys from 21-23 May 2014 for Tunnel 5 were not possible. Seeds were used as bait instead of sausage in Tunnel 4 due to disturbance by domestic cats.

Due to heavy rain conditions, Tunnel 8 was relocated on 22 May 2014 underneath hedgerow/scrub. This was within 5m of the original position.

2.3.2 Limitations during September Survey Session

Due to an issue with stock availability of the tunnels, Tunnel 5 was not set up until Tuesday 10th September, therefore was only left for 3 days. The remainder of the methodology from the May survey was then adopted.

3 Baseline Environment

3.1 Desk Study

Error! Reference source not found. displays the results for European hedgehog within 2km of the survey area from 2000-2013. A single record for a road kills in 2007 lies within the study area at Castleton. All other records are outside the study area.

Table 2 Historical records for the European hedgehog post 2000.

Location	Approximate distance (km) from survey area boundary	Direction from survey boundary	Date	Comments
Castleton	Within	Within. Western end of survey area	29 Aug 2007	1 count road kill
Marshfield	0.4	South	2008	1 record
Marshfield	0.6	South	2008	1 record
Marshfield	0.7	South	2008	1 record
M4 east of J28	0.75	North	22 Apr 2011	1 count road kill
Marshfield	0.8	South	2008	1 record
Marshfield	0.8	South	2008	1 record
Marshfield	0.9	South	2008	1 record
Marshfield	0.9	South	2008	1 record
Cleppa Park, Newport	1.2	North	03 May 2013	Road kill
Adjacent to River Ebbw	1.8	North	2007 Aug 2007	1 (Adult) present

In addition, SEWBRc data provided information on Local Biodiversity Action Plans (LBAP), where Hedgehog is listed. These include the Newport LBAP.

3.2 Field Surveys

Animal prints were recorded in all tunnel locations. In order to ensure accurate recording of hedgehog prints, samples of the prints recorded were sent off for verification.

A small selection prints from the May 2014 survey were sent to the Mammal Society to confirm the presence or absence of hedgehog prints. All the sheets with prints from the September 2014 surveys were posted to the People's Trust for Endangered Species to confirm the presence or absence of hedgehog prints.

The motion sensitive camera did not capture evidence of hedgehog, however rabbit footage was obtained.

None of the sheets collected from the May surveys showed presence of hedgehog prints. Cat and small mammal tracks, such as mice, bank vole or rat, were present. Snail and slug were present during daily checks on some of the tunnels.

The September survey from tunnel 4 showed presence of hedgehog. Tunnel 4 was located at the end of a hedgerow next to a gate on a grass verge on Heol Pont-Y-Cwch, within the Gwent Levels to the west of the River Ebbw. The surrounding fields are livestock grazed with horses and cattle. The photographs as shown in Figure 2 to Figure 7 show the prints on the 8th, 11th and 12th September.



Figure 2 Hedgehog prints from Tunnel 4 on 8th September 2014



Figure 3 Hedgehog prints from Tunnel 4 on 8th September 2014



Figure 4 Hedgehog prints from Tunnel 4 on 11th September 2014



Figure 5 Hedgehog prints from Tunnel 4 on 11th September 2014



Figure 6 Hedgehog prints with smaller mammal tracks from Tunnel 4 on 12th September 2014



Figure 7 Hedgehog prints with smaller mammal tracks from Tunnel 4 on 12th September 2014

3.3 Incidental Sightings

Hedgehogs have also been recorded during other surveys which have been undertaken during 2014. The locations of these sightings are shown on Drawing M4-OA-01-00-DR-Z-HG-0002.

4 Conclusions and Recommendations

The Hedgehog survey covered ten separate areas of potentially suitable habitat within the defined study area. The survey was undertaken in two five day sessions in May and September.

Hedgehog presence was recorded in one location at Heol Pont-Y-Cwew near the River Ebbw. In addition incidental sightings have confirm hedgehog to be present near Castleton and Cleppa Parc, and at Magor in the eastern end of the Study Area. Given that hedgehog have been recorded within the Gwent Levels near the River Ebbw is can be assumed that they are likely to be present throughout the study area.

4.1 Recommendations

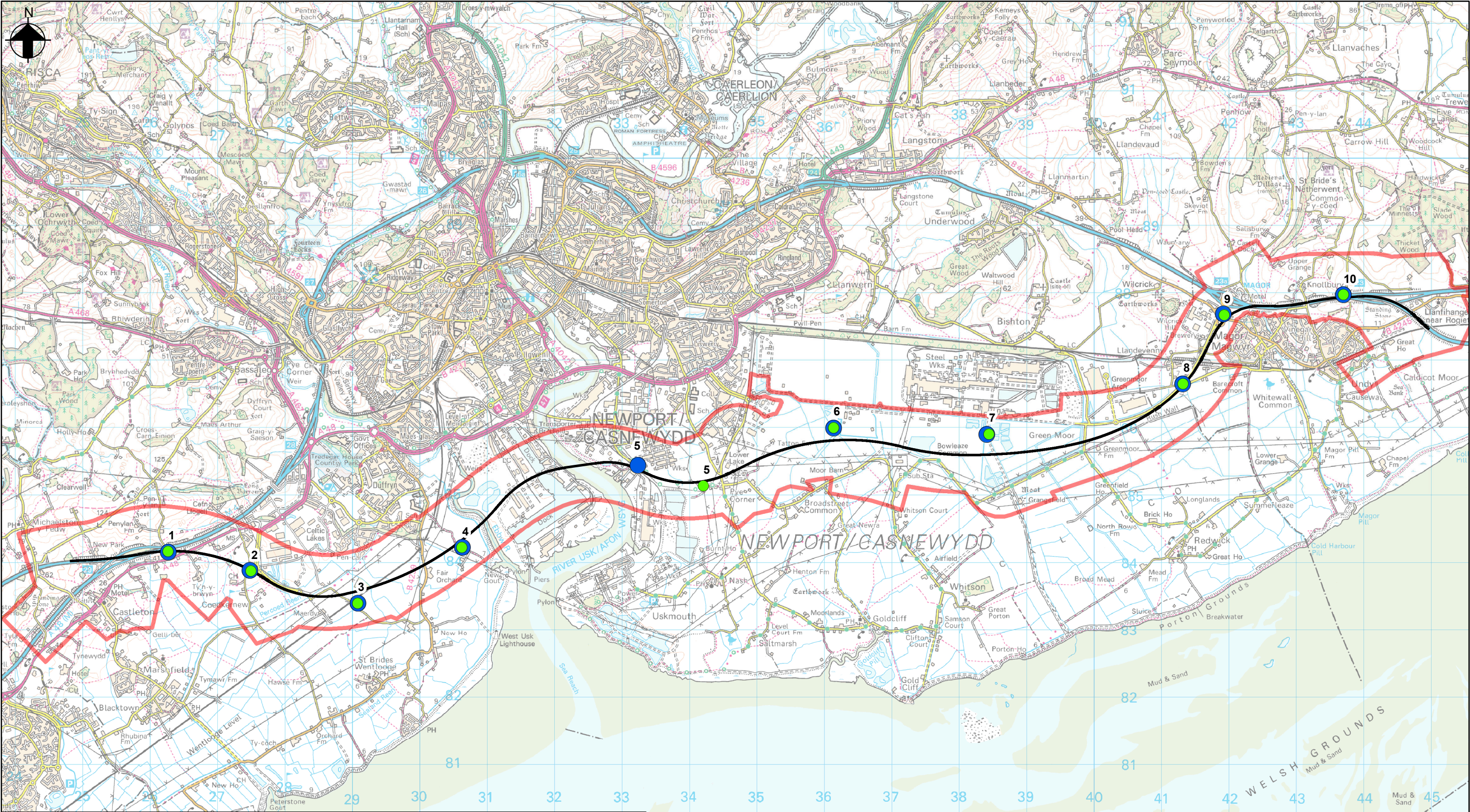
It is recommended that during the design process habitat retention, protection and if necessary replacement and enhancement measures are implemented along the route.

Due to their conservation importance, mitigation for hedgehogs should be designed into the project, including any necessary measures to avoid the killing of hedgehog during construction.

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Drawings



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Legend

- September tunnel locations
- May tunnel locations
- Centre line
- Survey Area

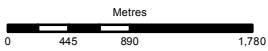
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Legend

- Incidental hedgehogs sightings
- Study Area

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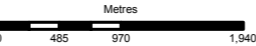
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