

TAG Biodiversity Impacts Worksheet

Step 2		Step 3				Step 4	Step 5
Area	Description of feature/ attribute	Scale (at which attribute matters)	Importance (of attribute)	Trend (in relation to target)	Biodiversity and earth heritage value	Magnitude of impact	Assessment Score
Severn Estuary, Ramsar Site	The Severn Estuary designated as a Ramsar site covering 16,942 ha of wetland. The closest point to Ramsar site from proposed development is approximately 280m west of the site. The site's qualifying interest features overlap with those of the Severn Estuary SPA and SAC. The site is of particular importance for hosting internationally important populations of several species of waterbirds as well as its fish species migrating between the sea and rivers via the Estuary.	International	Qualifying feature of an internationally designated site so very high importance	Static (actively managed)	Very high	<p>Summary of works (to be removed before submission): Proposed road marking modification, proposed footway widening to shared use path, minor widening to existing 1.4m pinch point due to existing median strip and land ownership (increase of 0.2m from carriageway, area 4), proposed traffic island (existing verge to be reduced to provide space), existing bus land to be widened to 4.5m</p> <p>Neutral</p> <p>Due to the nature of proposed works and the distance from the route to the Ramsar site, it is unlikely that there will be adverse impacts during construction works. A Habitats Regulation Assessment (HRA) must be undertaken prior to works to assess habitats and identify additional mitigation. An ecological method statement and Construction Environmental Management Plan should also be produced for the construction phase. At the time of writing, no land take beyond the existing carriageway is anticipated; should this change, the construction phase impacts should be re-evaluated.</p> <p>It is unlikely that there will be adverse impacts during the operational phase due to the nature of the proposed scheme.</p>	Neutral (based on current understanding)
Severn Estuary, Special Area of Conservation (SAC)	The SAC qualifying features include: estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>), sandbanks which are slightly covered by sea water all the time, and reefs. The site also supports lamprey (<i>Ipetromyzon marinus</i>), river lamprey (<i>Lampetra fluviatilis</i>) and twaite shad (<i>Alosa fallax</i>).	International	Qualifying feature of an internationally designated site so very high importance	Static (actively managed)	Very high	<p>Neutral</p> <p>Due to the nature of proposed works and the distance from the route to the SAC, it is unlikely that there will be adverse impacts during construction works. A Habitats Regulation Assessment (HRA) must be undertaken prior to works to assess habitats and identify additional mitigation. An ecological method statement and Construction Environmental Management Plan should also be produced for the construction phase. At the time of writing, no land take beyond the existing carriageway is anticipated; should this change, the construction phase impacts should be re-evaluated.</p> <p>It is unlikely that there will be adverse impacts during the operational phase due to the nature of the proposed scheme.</p>	Neutral (based on current understanding)
Severn Estuary, Special Protection Area (SPA)	The SPA qualifying features include: overwintering Bewick's swan (<i>Cygnus columbianus bewickii</i>), on passage ringed plover (<i>Charadrius hiaticula</i>), overwintering curlew (<i>Numenius arquata</i>), dunlin (<i>Calidris alpina alpina</i>), pintail (<i>Anas acuta</i>), redshank (<i>Tringa tetanus</i>), and shelduck (<i>Tadorna tadorna</i>).	International	Qualifying feature of an internationally designated site so very high importance	Static (actively managed)	Very high	<p>Neutral</p> <p>Due to the nature of proposed works and the distance from the route to the SPA, it is unlikely that there will be adverse impacts during construction works. However, a Habitats Regulation Assessment (HRA) should be undertaken prior to works to assess habitats and identify additional mitigation. An ecological method statement and Construction Environmental Management Plan should also be produced for the construction phase. At the time of writing, no land take beyond the existing carriageway is anticipated; should this change, the construction phase impacts should be re-evaluated.</p> <p>It is unlikely that there will be adverse impacts during the operational phase due to the nature of the proposed scheme.</p>	Neutral (based on current understanding)

<p>Avon Gorge Woodlands (SAC)</p>	<p>Some part of the Avon Gorge Woodlands SAC falls within the proposed development redline boundary. SAC consists of natural cliffs, quarries and scree of Carboniferous limestone dramatically rise about 100m either side from the tidal River Avon, with grassland and woodland where slopes are less sheer. The site is important because of the small-leaved lime <i>Tilia cordata</i> woodland and the associated species-rich transitions to scrub and herb-rich calcareous grasslands. The open limestone grassland and cliff ledges support a high number of uncommon species, including rare whitebeams <i>Sorbus</i> spp., with two unique to the Avon Gorge, <i>S. bristoliensis</i> and <i>S. wilmottiana</i>, and other important plants, such as Bristol rockcress <i>Arabis scabra</i> and honewort <i>Trinia glauca</i>.</p>	<p>International</p>	<p>Qualifying feature of an internationally designated site so very high importance</p>	<p>Static (actively managed)</p>	<p>Very high</p>	<p>Proposed carriageway construction, opportunity for flexiuse vegetated retaining wall system, existing verge to be reduced to provide additional width, small removal of overhanging vegetation (area 5)</p> <p>Neutral TO Intermediate negative dependent upon details</p> <p>Due to the proximity of the proposed scheme to the SAC, there is the potential for adverse effects during construction works, for example from pollution and changes to noise and vibration. Dependent upon the details of road widening in the vicinity of the SAC there may be direct impacts, this will need to be confirmed during detailed design. A Habitats Regulation Assessment (HRA) must be undertaken prior to works to assess habitats and identify additional mitigation. An ecological method statement and Construction Environmental Management Plan should also be produced for the construction phase. A targeted walkover or preliminary ecological appraisal is required that would report in the further assessment, especially for any vegetation clearance required.</p> <p>It is unlikely that there will be adverse impacts during the operational phase due to the nature of the proposed scheme.</p>	<p>Neutral to Large Adverse dependent upon details</p>
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<p>Leigh Woods (National Nature Reserve and Site of Special Scientific Interest (SSSI))</p>	<p>Leigh Woods NNR is approximately 95m west from the proposed development redline boundary. The trees of Leigh Woods extend over 3.2km along the west side of the Avon Gorge in North Somerset, on the border with Bristol - a mix of ancient woodland and more recent growth, crossed by a network of paths and tracks, and home to many plant species, on account of which the area is protected, both as a national nature reserve and a site of special scientific interest. Most of the ground is fairly level, up to the edge of the gorge where it falls away very steeply, though the wooded land includes two major valleys, Paradise Bottom in the north, containing a permanent stream, and the dry Nightingale Valley near the south edge.</p>	<p>National</p>	<p>Qualifying feature of a nationally designated site so high importance</p>	<p>Static (actively managed)</p>	<p>High</p>	<p>Neutral Due to the nature of proposed works and the distance from the route to the SSSI, it is unlikely that there will be adverse impacts during construction works. An ecological method statement and Construction Environmental Management Plan should also be produced for the construction phase. At the time of writing, no land take beyond the existing carriageway is anticipated; should this change, the construction phase impacts should be re-evaluated. It is unlikely that there will be adverse impacts during the operational phase due to the nature of the proposed scheme.</p>	<p>Neutral (based on current understanding)</p>
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Horseshoe Bend, Shirehampton (Site of Special Scientific Interest (SSSI))	Horseshoe Bend, Shirehampton SSSI comprising the cliff, the wooded slope and a band of saltmarsh below, designated because of several unusual plant species that grow here, principally the true service-tree (<i>sorbus domestica</i>) for which this location holds the single largest population in the country. Other notable species are two varieties of whitebeam, and large-leaved lime, in the woods, Pale St John's-wort and field garlic on the rocks, and long-stalked orache and slender hare's-ear in the saltmarsh. The SSSI is located approximately 30m west of the proposed development redline boundary.	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Proposed verge within existing median strip, existing in-set bus stop removed to provide additional shared footway width Neutral to Minor Negative dependent upon details. Due to the proximity of the proposed scheme to the SSSI, there is the potential for adverse effects during construction works, for example from pollution and changes to noise and vibration. However, given the nature of the proposed works these impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP and ecological working method statement, the construction impacts are likely to be minimised. At the time of writing, no land take is proposed in this area of the route; should this change, the impact to the SSSI and associated mitigation measures will need to be re-evaluated. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral to slight adverse dependent upon details
Ashton Court SSSI	Ashton Court SSSI is approximately 385m west of the proposed development redline boundary. Ashton Court SSSI is important for its rich saproxylic invertebrate fauna including many species which are nationally scarce. The site lies on the south west side of the City of Bristol within the larger Ashton Court Estate. To the north and west the site lies on a gently sloping ridge, often referred to as a plateau, whilst in the south and east there are steeper gradients on which most of the woodlands are located before the ground begins to level out. The underlying geology is complex with Lower Carboniferous Limestones to the north and west, and Carboniferous sandstones and gritstones on the plateau. These are surrounded by younger Triassic rocks consisting of Mercia Mudstones and Dolomitic Conglomerate. The soils tend to be base rich on the higher ground to the north and predominantly neutral to the south	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Neutral Due to the nature of proposed works and the distance from the route to the SSSI, it is unlikely that there will be adverse impacts during construction works. Mitigation measures should be captured within a CEMP to reduce impacts. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral (based on current understanding)
Quarry Steps SSSI	The Quarry Steps SSSI is located 1,245m to the east of the southern part of the Site. According to Natural England, the vertical section of the rock face is clear of vegetation and the bottom of the slope has a slightly less steep slope where rubble has accumulated over the years. The rock face has been colonised by herbaceous vegetation and a few young Buddlejas.	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Neutral Due to the nature of proposed works and the distance from the route to the SSSI, it is unlikely that there will be adverse impacts during construction works. Mitigation measures should be captured within a CEMP to reduce impacts. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral (based on current understanding)
Ham Green SSSI	Ham Green SSSI is along Chapel Pill lane and approximately 925m west of the proposed development redline boundary. It is a geological site. The site consists of Pleistocene sediments, which include two to three metres of red-brown, gritty, stony silts, with abundant Greensand chert and other far-travelled rock-types. These deposits appear to be heavily-cryoturbated terrace gravels or presumed fluvial origin, although a fluvio-glacial origin has also been suggested. This site is one of the last good exposures of 'high' terrace deposits along the Bristol Avon. This site's great research potential and its fine exposures make it one of considerable importance.	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Neutral Due to the nature of proposed works and the distance from the route to the SSSI, it is unlikely that there will be adverse impacts during construction works. Mitigation measures should be captured within a CEMP to reduce impacts. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral (based on current understanding)

Avon Gorge SSSI	Some part of the Avon Gorge Woodlands SSSI falls within the proposed development redline boundary. Avon Gorge lies on the edge of Bristol and rises about 100 metres from the tidal River Avon to Observatory Hill on the eastern side and Stokeleigh Camp to the west. The site includes part of Leigh Woods. The Gorge has natural cliffs and quarry exposures of Carboniferous limestone, which are of great geological interest and, together with the screes, scrub, pockets of grassland and adjacent woodland, support an exceptional number of nationally rare and scarce plant species.	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Neutral to Intermediate Negative (dependant upon design and construction details) It is not currently known the detail of the carriageway widening and if there will be direct land take of the SSSI. This should be avoided if at all possible. Due to the proximity of the SSSI to the proposed works, there is also the potential for adverse impacts, for example from pollution and changes to noise and vibration levels. However, given the nature of the proposed works these indirect impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP and ecological working method statement the construction impacts are likely to be minimised. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral to Large Adverse (dependant upon detailed design and construction details)
Severn Estuary SSSI	Severn Estuary SSSI is approximately 230m west of the site. The Severn Estuary SSSI forms part of a larger area which includes the Upper Severn Estuary SSSI, the Taf/Ely Estuary SSSI and Bridgwater Bay National Nature Reserve and proposed SSSI. This larger area of the Severn Estuary is proposed as a Special Protection Area. The Severn Estuary lies on the south west coast of Britain at the mouth of four major rivers (the Severn, Wye, Usk and Avon) and many lesser rivers. The immense tidal range and classic funnel shape make the Severn Estuary unique in Britain and very rare worldwide. The intertidal zone of mudflats, sand banks, rocky platforms and saltmarsh is one of the largest and most important in Britain. The estuarine fauna includes: internationally important populations of waterfowl; invertebrate populations of considerable interest; and large populations of migratory fish, including the nationally rare and endangered Allis Shad <i>Alosa alosa</i> . The SSSI forms the major part of a larger area of estuarine habitat, which includes the Upper Severn Estuary, the Taf/Ely Estuary and Bridgwater Bay. The estuary has a diverse geological setting and a wide range of geomorphological features, especially sediment deposits. The SSSI is internationally important for Dunlin <i>Calidris alpina</i> and supports about 7.5% of the British wintering population of this species. The estuary as a whole supports about 10.5% of the British wintering population and is the single most important wintering ground of Dunlin in Britain	National	Qualifying feature of a nationally designated site so high importance	Static (actively managed)	High	Neutral to Minor Negative Due to the proximity of the SSSI to the proposed works, there is the potential for adverse impacts, for example from pollution and changes to noise and vibration levels. However, given the nature of the proposed works these impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP, ecological working method statement, the construction impacts are likely to be minimised. At the time of writing, no land take is proposed in this area of the route; should this change, the impact to the SSSI and associated mitigation measures will need to be re-evaluated.	Neutral to Slight Adverse (dependant upon detailed design and construction details)
Lamplighters Marsh (Local Nature Reserve (LNR))	The Lamplighters Marsh LNR is adjacent to the northern part of the route. According to Bristol City Council, the LNR consists of a variety of semi-natural habitats including scrub, grassland and salt marsh. The LNR is around 1km in length and supports wildlife communities that are unusual in the local area.	Regional	Designated at Local Authority Level	Static (actively managed)	Medium	Neutral to Minor Negative Due to the proximity of the LNR to the proposed works, there is the potential for adverse impacts, for example from pollution and changes to noise and vibration levels. However, given the nature of the proposed works these impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP, ecological working method statement, the construction impacts are likely to be minimised. At the time of writing, no land take is proposed in this area of the route; should this change, the impact to the LNR and associated mitigation measures will need to be re-evaluated. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral to Slight Adverse (dependant upon detailed design and construction details)
St George's Flower Bank (LNR)	The St George's Flower Bank LNR is located 1,810m to the west of the northern part of the route and is designated for its wildflower meadow habitat. The LNR contains over 50 species of plant, including Cowslips, Primroses, meadow plants, and a variety of Orchids as well as a variety of birds and insects.	Regional	Designated at Local Authority Level	Static (actively managed)	Medium	Neutral Due to the nature of proposed works and the distance from the route to the LNR, it is unlikely that there will be adverse impacts during construction works. Mitigation measures should be captured within a CEMP to reduce impacts. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral

Avon New Cut (LNR)	The Avon New Cut LNR is located 105m to the south of the southern part of the route and is a waterway alongside the River Avon. According to Bristol City Council, the LNR contains a wide variety of plants and animals, including some rare species. The LNR supports saltmarsh vegetation as well as scrub and woodland above the tide line which provides a valuable wildlife corridor through Bristol.	Regional	Designated at Local Authority Level	Static (actively managed)	Medium	Neutral Due to the nature of proposed works and the distance from the route to the LNR, it is unlikely that there will be adverse impacts during construction works. Mitigation measures should be captured within a CEMP to reduce impacts. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral
Ancient woodland	There are eight parcels of ancient woodland within 2km of the route. The central part of the route, along the Avon Gorge, is directly adjacent to a parcel of ancient woodland with another larger parcel of ancient woodland on the other side of the river.	National	National Planning Policy Framework (NPPF) requires consideration of potential impacts to ancient woodland, as they are defined as "irreplaceable habitat", and are recommended to refuse any development "resulting in the loss or deterioration of irreplaceable habitats".	Static	Medium	Neutral to Intermediate Negative (dependant upon design and construction details) It is not currently known the detail of the carriageway widening and if there will be direct land take of the woodland. This should be avoided if at all possible. Due to the proximity of Ancient Woodland to the proposed works, there is also the potential for adverse impacts, for example from pollution and changes to noise and vibration levels. However, given the nature of the proposed works these indirect impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP and ecological working method statement the construction impacts are likely to be minimised. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral to Moderate Adverse (dependant upon detailed design and construction details)
Priority Habitats within 2km of the route	Priority habitats within 2km of the route include: coastal saltmarsh; maritime cliffs and slopes; mudflats; coastal and floodplain grazing marsh; good quality semi-improved grassland; lowland calcareous grassland; lowland meadows; reedbeds; ponds; deciduous woodland; traditional orchards; wood pasture and parkland; and no main habitat but additional habitat exists.	National	Habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006	Static	Medium	Neutral to Intermediate Negative (dependant upon design and construction details) It is not currently known the detail of the carriageway widening and if there will be direct land take of habitats including woodland. This should be avoided if at all possible. Due to the proximity of Ancient Woodland to the proposed works, there is also the potential for adverse impacts, for example from pollution and changes to noise and vibration levels. However, given the nature of the proposed works these indirect impacts are likely to be minimal and temporary in nature. Provided appropriate mitigation measures are put in place, including a CEMP and ecological working method statement the construction impacts are likely to be minimised. Due to the nature of the proposed scheme, it is unlikely that there will be operational impacts.	Neutral to Moderate Adverse (dependant upon detailed design and construction details)
Ponds	There are two ponds currently identified within the 2km study area that have survey data. One is located 1,640m to the west of the northern part of the route and the other is 1,055m west of the southern part of the route. Detailed survey may identify additional ponds.	N/A	Habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006	Static	Medium	Neutral Due to the distance of the ponds to the proposed scheme it is unlikely that pollution or disturbance to the pond during construction will occur. No operational impacts are anticipated.	Neutral

Woodland, Trees and Hedgerows	There are many mature individual and lines of trees along the route, as well as a number of hedgerows. There are also multiple patches of woodland that the route runs directly adjacent to.	Local	Common habitats of some local biodiversity interest	Static	Low	Neutral to Intermediate Negative There is the potential for pollution and / or disturbance to trees and woodland during construction. The implementation of exclusion zones and standard pollution measures as part of a Construction Environmental Management Plan should minimise negative impacts.	Neutral to slight adverse dependent upon details
Grassland	There are multiple small parcels of grassland interspersed along the route. The majority look heavily managed, but there is the potential for higher value grassland habitat being present.	Local	Common habitats of some local biodiversity interest	Static	Low	Neutral to Intermediate Negative Details of impacts to verges are not currently fully understood in relation to the proposed scheme. Measures to reduce impacts to grassland should be included in a Construction Environmental Management Plan and ecological method statement.	Neutral to slight adverse dependent upon details
Scrub	There are multiple patches of scrub adjacent to the works area throughout the route.	Local	Common habitats of some local biodiversity interest	Static	Low	Neutral to Intermediate Negative Details of impacts to scrub as part of widening and vegetation cut back are not currently fully understood in relation to the proposed scheme. Measures to reduce impacts to grassland should be included in a Construction Environmental Management Plan and ecological method statement.	Neutral to slight adverse dependent upon details
Amphibians	There are records of Common Frog (<i>Rana temporaria</i>), Common Toad (<i>Bufo bufo</i>), Smooth Newt (<i>Lissotriton vulgaris</i>), Palmate Newt (<i>Lissotriton helveticus</i>), a tritus new (<i>Triturus</i>), and Great Crested Newt (<i>Triturus cristatus</i>) within the 2km study area.	Local	European protected species (Great Crested Newt) and species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006	Most species likely declining in local area	Medium	Neutral to Minor Negative There may be impacts to amphibian terrestrial habitat in close proximity to the proposed scheme, during construction (details of widening required). Water bodies around the proposed works may need to be surveyed for great crested newt presence. A CEMP should be implemented to safeguard other amphibians.	Neutral to Slight Adverse

Reptile	There are records of Grass Snake (<i>Natrix helvetica</i>), Slow-worm (<i>Anguis fragilis</i>), Adder (<i>Vipera berus</i>), European Pond Terrapin (<i>Emys orbicularis</i>) - (non native), Common Lizard (<i>Zootoca vivipara</i>), and Wall Lizard (<i>Podarcis muralis</i>) (non native).	Local	UK protected species	Declining	Low	Neutral Potential disturbance / risk of killing or injury due to construction works will likely be mitigated through an ecological method statement.	Neutral
Birds	There are numerous records of birds within the 2km study area. Of these, two Schedule 1 species were recorded, these are Barn owl, and Brambling. There is suitable habitat for both tree and ground nesting species. A variety of suitable foraging habitats are present along the route.	Local	Birds, nests and eggs are UK protected during breeding season	Varies by species	Low - High	Neutral to Minor Negative Noise and vibration during construction may disturb birds, especially during the nesting bird season. Mitigation to involve an ecological method statement and precautionary working methods should be produced.	Neutral to slight adverse
Bats	Multiple records of potential bat roosts were identified within 2km of the study area. The bats identified include: Leisler's Bat (<i>Nyctalus leisleri</i>); Pipistrelle (<i>Pipistrellus pipistrellus</i>); Vespertilionidae Bat (<i>Vespertilionidae</i>); Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>); Common Pipistrelle (<i>Pipistrellus pipistrellus</i>); Brown Long-eared Bat (<i>Plecotus auritus</i>); Serotine (<i>Eptesicus serotinus</i>); Lesser Horseshoe Bat (<i>Rhinolophus hipposideros</i>); a Myotis bat (<i>Myotis</i>); Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>); Noctule (<i>Nyctalus noctula</i>); Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>); Leisler's Bat (<i>Nyctalus leisleri</i>); and Daubenton's Bat (<i>Myotis daubentonii</i>). Some sections of the route are adjacent to linear vegetation features such as lines of mature trees, hedgerows, and scrub offering potential commuting and foraging habitat for bats. Additionally, some parts of the route pass directly through woodland, which could contain roosts.	Local	European and UK protected species	Varies by species.	Low - High	Neutral to Minor Negative Lighting changes along the route during post-construction (if proposed) and construction have the potential to disrupt commuting and foraging routes (all lighting should be designed to be wildlife sensitive). Noise and vibration during construction works may also disturb bats, especially during hibernation or mating season. Mitigation to involve an ecological method statement and precautionary working methods should be produced, including details of checks for bat roosts should any trees which may provide a roosting resource require removal. Surveys may be needed if any trees along the route are assessed as possessing bat roost potential.	Neutral to slight adverse
Badger	There are 231 badger setts recorded within the 2km study area, the nearest record is located less than 500m from the route and may be within the route boundary.	Local	Protected under Protection of Badgers Act 119	Static / maybe increasing	Low	Neutral Pre-construction surveys will ensure that appropriate measures are put in place to safeguard badgers, if necessary.	Neutral
Water vole	There are 243 records of water vole within the 2km study area. There is suitable habitat for water vole in proximity to the route, particularly along the River Avon.	Local	UK protected species	Declining	Low	Neutral Appropriate measures will be put in place to safeguard water vole. A CEMP will be utilised to prevent indirect impacts.	Neutral
Otter	There are 51 records of otter within the 2km study area. There is suitable habitat for otter in proximity to the route, particularly along the River Avon.	Low	European and UK protected species	Declining	Low	Neutral Appropriate measures will be put in place to safeguard otter. A CEMP will be utilised to prevent indirect impacts.	Neutral
Other mammals	Records of Hedgehog (<i>Erinaceus europaeus</i>), Stoat (<i>Mustela erminea</i>), Weasel (<i>Mustela nivalis</i>), Common Shrew (<i>Sorex araneus</i>), Polecat (<i>Musela putorius</i>), Common Dormouse (<i>Muscardinus avellanarius</i>), American Mink (<i>Neovison vison</i>), Brown Hare (<i>Lepus europaeus</i>), Pygmy Shrew (<i>Sorex minutus</i>), Harvest Mouse (<i>Micromys minutus</i>), Yellow-necked Mouse (<i>Apodemus flavicollis</i>), and Muntjac (<i>Muntiacus reevesi</i>) were identified within the 2km study area.	Local	Species of principal importance	Declining	Low	Neutral Potential disturbance during construction could be mitigated through an ecological method statement.	Neutral

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Reference Sources

MagicMaps, DEFRA (2023); Google Maps, Google (2023); Bristol Regional Environmental Records Centre (2023); Natural England (2023), Bristol City Council (2023)

Summary Assessment Score

Neutral to Large Adverse (but these impacts will vary dependant upon detailed design and the design should be iterated to prevent impacts to designated areas and habitats adjacent to the roadway, particularly in the vicinity of Avon Gorge).

Qualitative Comments

Details of required land take to enable widening / retaining walls are not currently known. These will need to be understood to finalise the potential impacts.
No operational impacts are anticipated.
A Habitats Regulations Assessment (HRA) must be undertaken to establish any additional mitigation measures to international designated sites.