East West Rail

Environmental Baseline Information for Buckinghamshire

May 2012

Version 2

(Comments from AVDC incorporated)

Contents

Section

1 Introduction

This document provides information on known ecological and heritage features located on or alongside the proposed East West Rail corridor in Buckinghamshire. We have utilised information held on our systems, which makes up Buckinghamshire Landscape Information System (BLIS). The following pages provide, in table format, a summary of related statistics according to a number of environmental designations. Following this, maps and detailed descriptions are provided of features which have been identified by our records as of known interest along the route. Advice on requirements for heritage, habitat and species surveys in connection with the development is also provided.

A summary of the legislation relating to the features referred to in this document is provided in the appendix.

Advice has been provided separately on rights of way issues.

2 Atkins Preliminary Environmental and Ecological Constraints Report

Atkins Limited was commissioned by The Milton Keynes Partnership in 2009 to provide an initial assessment of the rail corridor. They carried out a walkover survey of the route and provided the results of this in a table.
We have used the details form the walkover survey to assign a score between 1 and 3 to features of note. A score of 1 (green) has been attributed to features of low significance, 2 (orange) are of medium significance and 3 (red) of high significance. *The scores have been applied based on professional judgement using descriptions provided in the Atkins report*. Figure 1 below provide a map of scored features and offer an overview of areas of note.

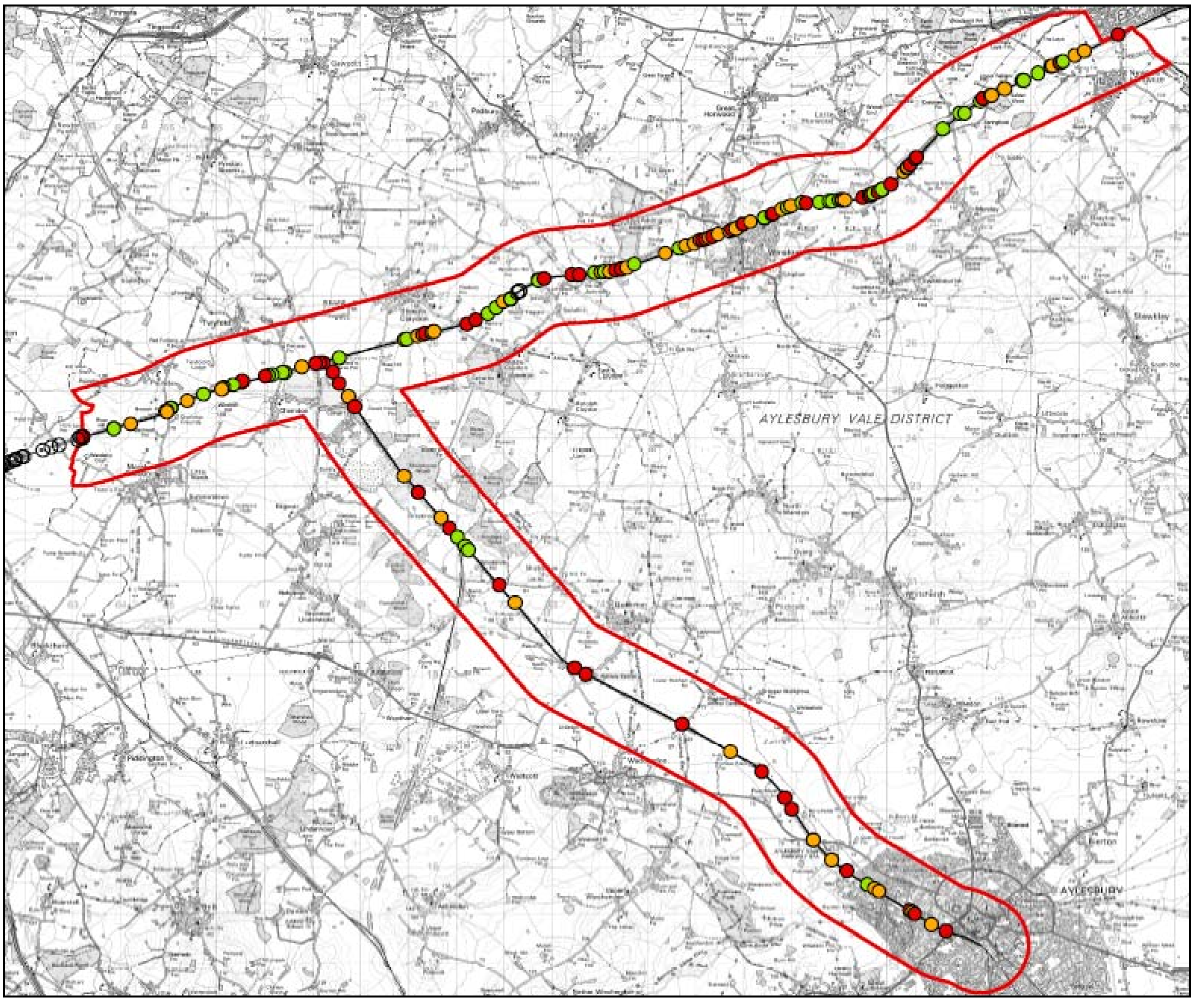


Figure 1 Scored Atkins ecological survey field observations

3 Baseline Environment Audit

The table below shows the area (ha) of key features within a 1km buffer.

	Area within 1km buffer
Ancient woodland	171ha
Biodiversity Action Plan habitat	183ha
Site of Special Scientific Interest	108ha
Local Wildlife Site	263ha
Local Nature Reserve	0
Local Geological Site	0
Biological notification site	303ha
Archaeological Notification Area	809ha
Conservation area	87ha
Scheduled Ancient Monument	2ha
Listed Building	316
Registered Parks and Gardens	37ha
Protected Species Records within 1km buffer	573
Number of different Protected Species within 1 km buffer.	66

4 Key Ecological Features

By assessment of records and information held in BLIS we have identified a number of features of particular importance. Descriptions of these are presented in the following text together with maps.

Figure 2 provide a reference for maps and features presented on the following pages.

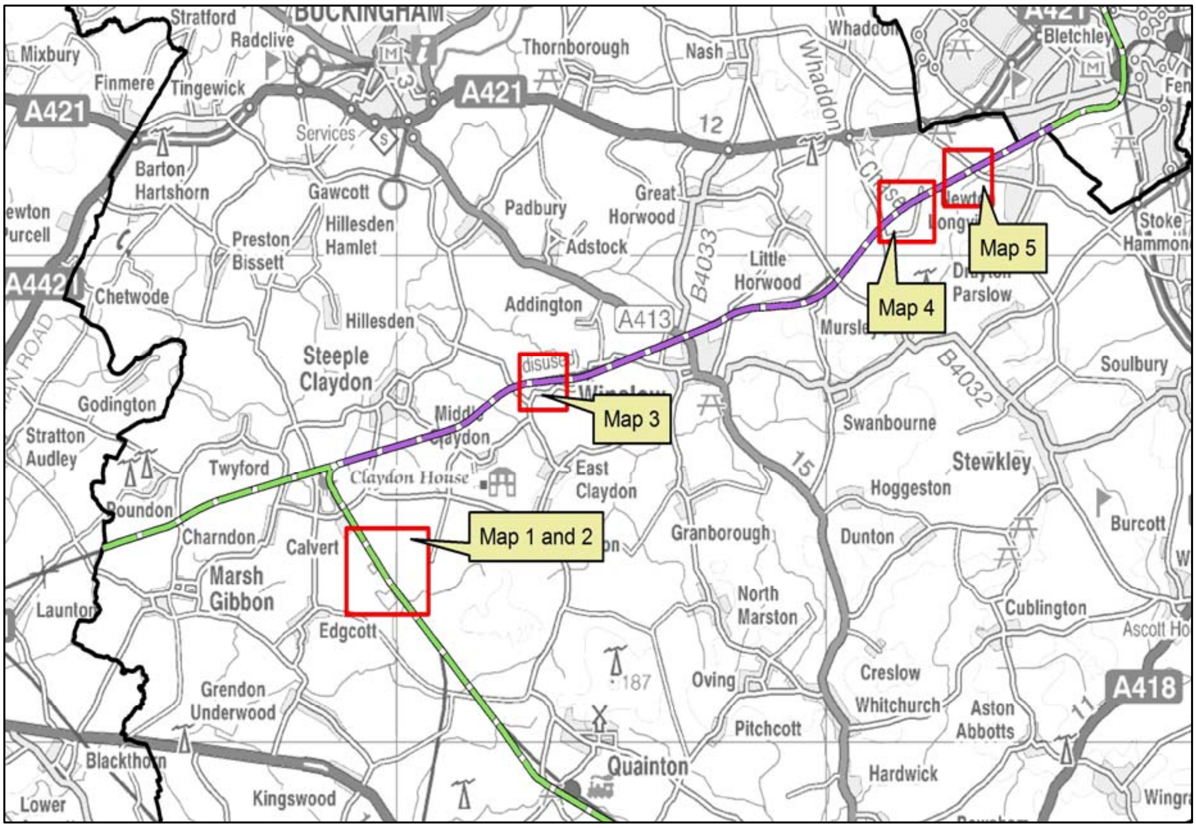
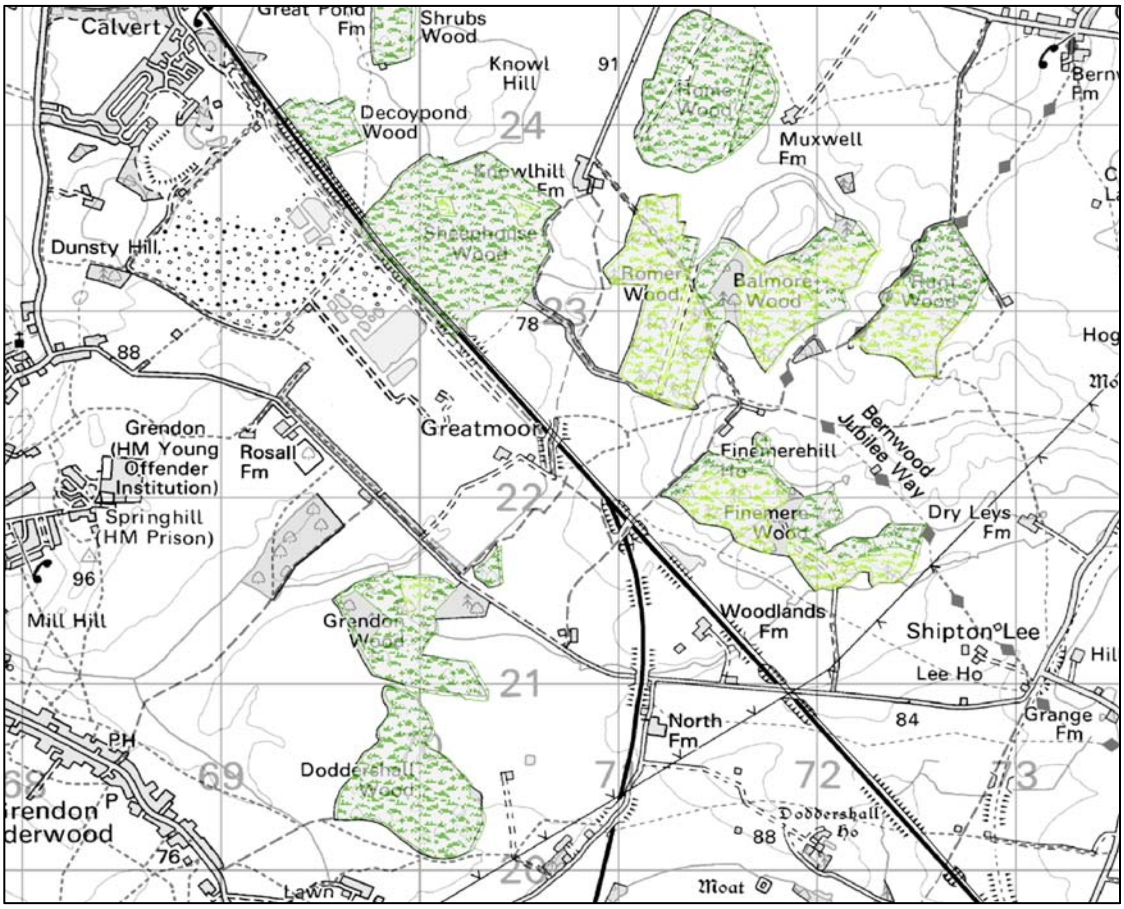


Figure 2 Key Ecological Features Reference Map

4.1 Ancient Woodland

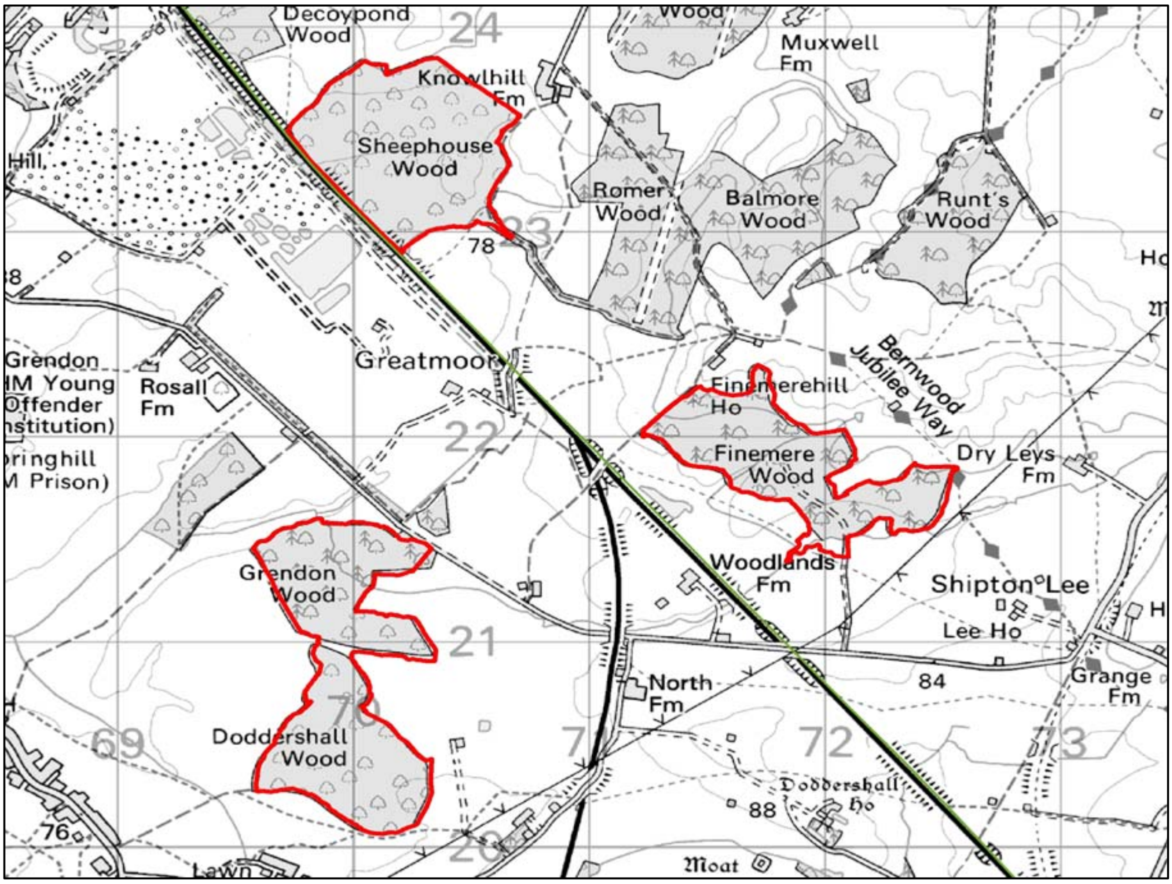
A number of Ancient Woodlands are concentrated on the north side of the track near Calvert. They provide a good network of woodland which allows species to move between them. Encroachment into these woodlands by widening of the track should be avoided. Nationally important populations of bats and butterflies are present in and alongside these woods. Any works to this stretch of track will require detailed botanical surveys to establish baseline ecological conditions specifically for these habitats. Appropriate mitigation, compensation and enhancement measures must be provided to ensure no net loss. Habitats such as Ancient Woodland are generally impossible to re-create, so avoidance of these areas must be a priority. If avoidance cannot be achieved then, significant, bespoke compensatory measures must be proposed to offset the loss.



Map 1 Ancient Woodland near Calvert

4.2 Site of Special Scientific Interest (SSSI)

Three SSSI are located in close proximity to the track at Calvert. These SSSI woodlands have been subject to extensive bat surveys after a relatively large population of the rare Bechstein Bat has been found to inhabit the woodlands. Collision risk with high speed trains will require assessment. Populations of vulnerable black hairstreak butterfly have also been found in the area i.e. access road and junction at the proposed Calvert EfW plant.



Map 2 Site of Special Scientific Interest (SSSI) near Calvert

4.3 Local Wildlife Sites

13 Local Wildlife Sites (LWS) are situated along the proposed route of the East West Rail link. All of these sites have been designated for their floral assemblages and four sites are located adjacent to parts of the currently disused railway. These 4 sites, where no track is currently present, are at highest risk of significant ecological impact. Nationally important species of flora and fauna have been recorded within these LWS. Of particular note is the presence of the Black Hairstreak butterfly around the Claydon Woods and Wood White butterfly around Salden Wood. Detailed floral and faunal surveys will be essential along the route in and adjacent to these LWS. Particular reference should be made towards the Wood White (and other butterfly species) around the Salden Wood stretch of the proposed link. This is the most important population of this species in the region and detailed mitigation proposals must be put forward if this species is likely to be impacted upon. Close liaison with the Upper Thames branch of Butterfly Conservation should take place to ensure this and other species are properly considered.
Below are further details of the four LWS located adjacent to the disused stretch of the line.

Verney Junction Station Ref 72I01
The disused railway embankment near Verney Junction holds a variety of grassland and scrub habitats and very wide range of species. Plants of particular importance are spiny restharrow (Ononis spinosa) and zigzag clover (Trifolium medium) both of which are very unusual in Bucks. It is a beautiful area, the dry grassland areas hosting yellow rattle (Rhinanthus minor), bird's-foot-trefoil (Lotus corniculatus), mouse-ear hawkweed (Hieracium pilosella), wild carrot (Daucus carota), hairy violet (Viola hirta), lady's bedstraw (Galium verum) and many other species. There are occasional anthills in these areas and also cowslip (Primula veris), although scrub is encroaching, along with several bramble patches.

Map 3 Verney Junction Station Local Wildlife Site

Railway Bank by Salden Wood Ref 83A01

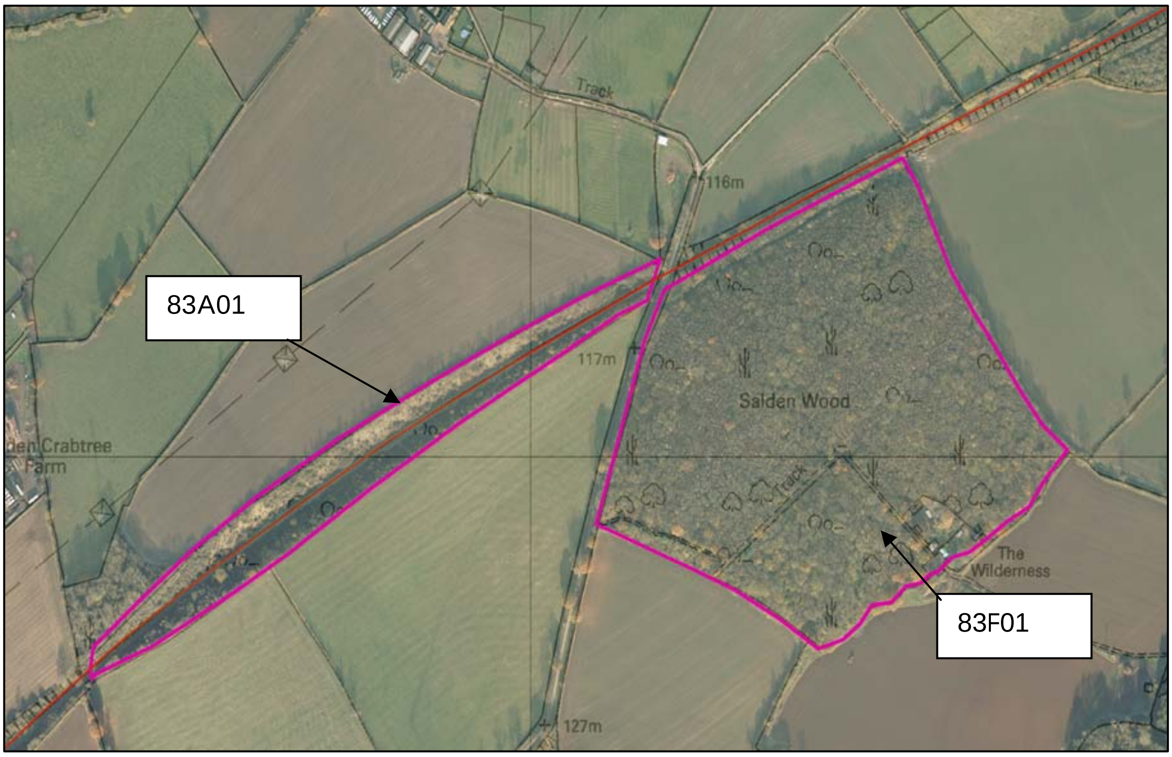
The majority of the floral interest of this site is located on the northern, south-facing slope. This is a mosaic of scrub and species rich calcareous grassland which weaves up and down the slope in a random pattern. The scrub is far less developed than on the southern slope and there are several large grassland areas and pockets of grassland surrounded by the scrub. This creates some warm pockets of habitat which are particularly favoured by invertebrates. Butterfly conservation actively monitors this site and has recorded several notable species such as; Wood White, Dingy Skipper, Grizzled Skipper, Small Copper and Chimney Sweeper Moth.

The Wood White is a BAP priority species and is the second most rapidly declining butterfly in the UK. In Berks, Bucks and Oxon since the 1980s it has declined from about 38 sites to 8, all but one of which are in Bucks.

The disused railway site adjacent to Salden Wood contains a healthy population of Wood Whites, possibly the best remaining in the three counties. The butterfly uses the section of cutting between the road bridges at SP813306 (west) and SP821312 (east).

Salden Wood Ref 83F01

This ancient wood west of Newton Longville is of wet ash and field maple, with a few oak remaining. Of particular interest is crosswort (Galium cruciata), unusual in Bucks. Amongst the variety of ancient woodland indicators are broad-leaved helleborine (Epipactis helleborine), bluebell (Hyacinthoides non-scripta), wood sedge (Carex sylvatica) and giant fescue (Festuca gigantica). Birds and butterflies include marsh tit, coal tit, ringlet and gatekeeper.



Map 4 Railway Bank by Salden Wood and Salden Wood Local Wildlife Site

Railway Siding east of Salden Wood ref 83F08

A complex mosaic of different habitats. The underlying geology pushes the flora towards calcareous species but there are some curious acidic patches within the site as evidenced by the flora. This is possibly due to material that may have been imported to the site when it was an active railway line. It is likely that there is a high invertebrate diversity on this site and it would be beneficial to conduct in depth surveys on the site. There are some very important butterfly populations in the cutting to the west of this site, which has a very similar flora.

Map 5 Railway Siding east of Salden Wood Local Wildlife Site

4.4 Local Wildlife Sites
Adjacent to active railway

Calvert Jubilee Nature Reserve 62X01:
Important site for overwintering wildfowl. Interesting variety of habitats host some rare plants.

Calvert Brick Pits, Great Moor Sailing Club 62S07:
Large site with huge central lake, used for sailing. Very species-rich glades with lots of butterflies. Mosaic of habitats.

Calvert Railway Station 62X02:
Old railway station with wet grassland and scattered scrub supports good invertebrate and bird communities and some rare plants.

Lawn Farm, Tinkers Hole 62S08:
Unusually large area of unimproved species rich grassland with ponds of high conservation value.

Decoypond Wood 62W02:
Small wood with Ancient Woodland indicators.

Grendon and Doddershall Meadows 72F09:
Large complex of unimproved meadows supporting a great variety of wildlife, including invertebrates and farm birds.

Waddesdon Station Complex 71P06:
Mixture of neutral and calcareous grassland and scrub. Species-rich flora and fauna.

Waddesdon Common 71P07:
Unimproved species-rich meadows with high diversity and many unusual species.

Sunny Hill Farm Pastures 71P08:
Unimproved grassland with good species diversity and supporting rare species.

5 Heritage

The effect of development on the historic environment must be considered as part of Environmental Impact Assessment and in support of planning applications (see PPS5). Reinstatement of the railway could affect the historic environment in a number of ways:

- Within the historic railway corridor there may be historic railway structures which are worthy of retention and/or recording.
- New landtake, ancillary works/access routes etc beyond the historic railway corridor may harm archaeological remains or other historic features as could off-site compensation for habitat loss.
- New railway structures or operation of the railway could affect the setting of nearby historic buildings/sites – such issues may overlap with landscape and design considerations.

There are no designated heritage assets within the historic railway corridor. However, a walkover survey is recommended to assess the historic interest of surviving undesignated railway structures. Wherever practical it would be desirable to retain significant features of the historic railway and also to reflect this heritage in the design of new structures.
The location and extent of off-line works is not defined at present. Wherever possible such works should be located to avoid known heritage assets, whether designated or not (see map below). Provision should be made for archaeological assessment and mitigation is relation to significant off-site works – this should include consideration of the potential for as yet undiscovered remains.
Potential impacts on the setting of heritage assets are likely to be either visual or noise related. Where design work indicates that there may be significant impacts in proximity to heritage assets then an assessment should be made and appropriate mitigation designed. Mitigation could include appropriate landscaping or sympathetically designed structures.

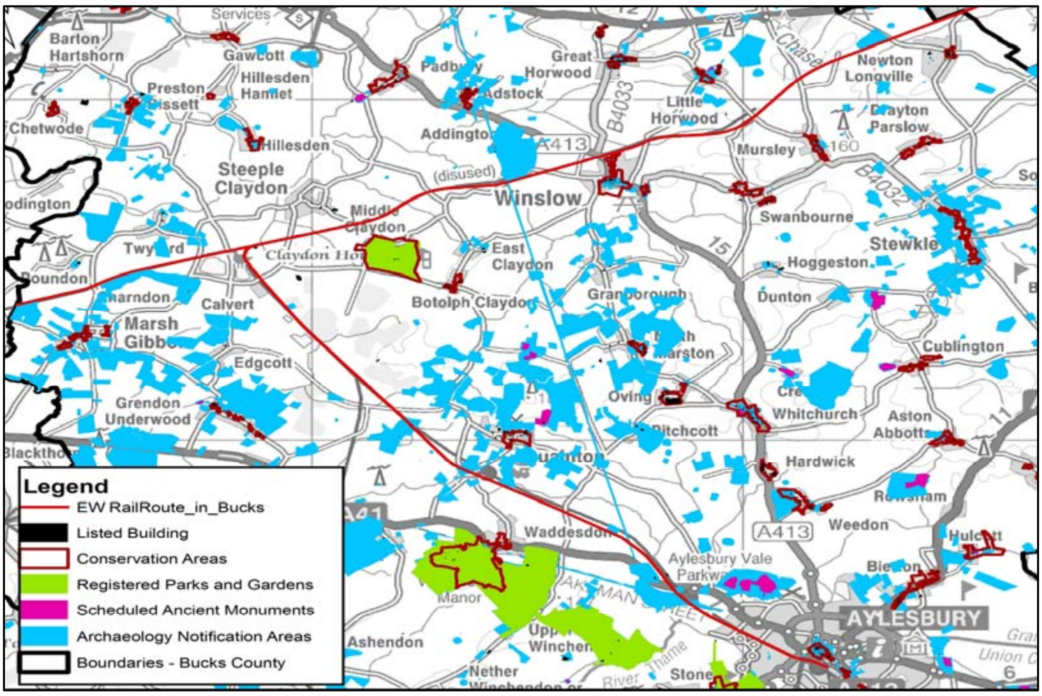


Figure 3 Heritage Assets

6 Landscape

The effect of development on landscape must be considered as part of Environmental Impact Assessment. Reinstatement of the railway is unlikely to have major landscape effects but reference should be made to the Aylesbury Vale Landscape Character Assessment for sensitive issues along the route, including tranquil areas. Particular attention should be given to areas where new structures or changes to landform/cover are proposed. Where landscaping or biodiversity compensation is required these should be designed with regard to the desirability of reflecting and reinforcing local landscape character.

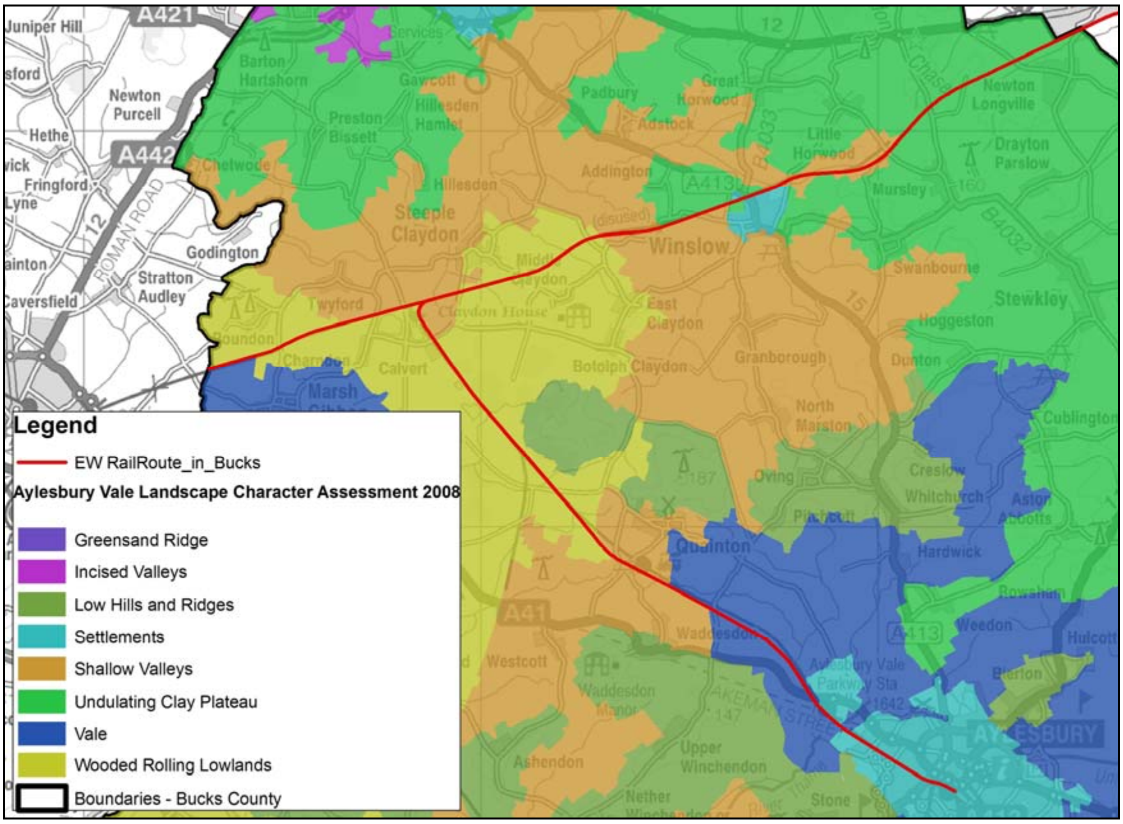


Figure 4 Landscape Character Assessment

7 Recommended Surveys

The following provide recommendations for surveys which may be required prior to works starting on the railway. Recommendations are provided for both the disused and active section, but further surveys may be required dependant on impacts associated with the works.
The disused section will require substantial survey effort as the impacts are predicted to be greater as habitats and species will have had time to colonise since the line closed.
Widening of and associated work related to the active railway, such as station construction and future proofing for electric fuel use, may trigger additional survey and further advice should be sought.

- **Extended Phase 1 survey** to be carried out along entire part of the disused section. This is required to establish the range of habitats found within the corridor of the railway line, as well as to establish the potential for protected species.
  Areas of the active railway where impacts are predicted on surrounding habitat due to construction must also be surveyed.

- **Detailed botanical surveys** will be required for all habitats of know interest or where the initial phase 1 survey indicates interest.

- We know certain sections of this disused track hold nationally important populations of butterflies and moths and it is recommended to carry out an **invertebrate survey** along the entire disused section to assess potential impacts. Detailed invertebrate surveys will be required to enable a full assessment of the potential impacts on existing assemblages of species. Detailed mitigation measures should be submitted for those species likely to be impacted upon. Butterfly Conservation has carried out surveys of the Local Wildlife Sites on the route over a period and can possibly provide further advice on their findings

- **Bat activity surveys** should be carried out to get a picture of the importance of the route for foraging and commuting bats. This must also establish if any rare/large populations of bats are found along the route. Surveys will be required to identify the potential impacts upon bat species along the proposed route. Assessment of bat populations in the vicinity of Ancient Woodland will require particular attention. Species of bat and population estimates of any roosts that may be present need to be determined. Impacts and associated mitigation measures for habitat loss (roosts), collision (killing and injuring), disturbance (light pollution, severance of commuting routes, habitat alteration) and removal of feeding habitat must be assessed. Potential mitigation and enhancement measures will need to be demonstrated. Specialist survey techniques for bats should be employed to take into account the presence of species hard to identify through standard survey techniques alone, such as Bechstein's Bat (Myotis bechsteinii) which is known to be present.in woodlands either side of the proposed route. North Bucks Bat Group can provide advice on the extent of know bat activity in the area.

- **Great Crested Newts surveys** must be carried out of any ponds within a 250m buffer of the disused railway line as well as parts of the active railway where impacts are likely. Appropriate mitigation, compensation and enhancement measures must be provided for this species. There is known to be a large Great Crested Newt population in the area.

- **Reptile survey** to be carried out along the entire route of the disused section as well as parts of the active railway where impacts are likely. Appropriate mitigation, compensation and enhancement measures must be provided for this species.

- **Breeding bird survey** will be required. Any vegetation proposed to be removed along the route of the link has potential for birds to nest within it. A comprehensive plan of any vegetation proposed to be removed must be provided alongside a suite of bird surveys for the route which enable an assessment of the importance of the site for breeding birds. Any removal of vegetation needs to be done outside of breeding period. Other mitigation measures are likely to be required depending on the results of the bird survey. Aylesbury Vale Barn Owl Group can provide info on active Barn Owl boxes along the proposed route.

- **Wintering bird surveys** maybe required if habitat is likely to be directly or indirectly (noise, dust) impacted by the works:

- The Atkins assessment identified several areas of badger activity and a full **badger survey** must be carried out with appropriate mitigation measures submitted for approval.

- **Otter and Water Vole survey**s will need to be carried out on watercourses crossed by the proposed route of the line with appropriate mitigation measures submitted for approval.

- **White-clawed crayfish surveys** where rivers or streams are likely to be directly or indirectly (change in hydrology) impacted.

- **Hazel dormouse surveys** where records indicate presence or where suitable habitat is identified.

- **Fish surveys** where rivers are likely to be directly or indirectly (change in hydrology) impacted

- **Tree surveys** should be carried out in accordance with BS5837 for any areas where impact is likely. Likewise Important Hedgerows in the countryside need to be considered for impact.
- **Heritage Desk-Based Assessment**, including walkover survey to identify historic railway structures.
- **Archaeological field evaluation** may be necessary for significant off-site land take if that is needed.
- **Landscape** A Landscape and Visual Impact Assessment (LVIA) will be required
- After the above surveys have been completed they should be used to inform a **Design Statement**. The design statement should outline the approach to landscaping of the route and try and ensure that any design will take into account the sensitivity of natural and cultural assets. All proposals should enhance or reinforce the landscape character of the area.

8 Mitigation

Appropriate mitigation, compensation and enhancement must be proposed to ensure there is no net loss of priority habitat or protected species along the route of the proposed rail link.

The aim of surveys should be to identify the ecological interest, determine how this will be affected by the proposals and then to detail how this can be avoided, mitigated or compensated so that the development results in no net loss of the biodiversity of the area. The sensitive ecological location of this proposal and the landscape scale linking function it currently provides means that a requirement for overall enhancement is appropriate. The potential offered by the existing rail lines for ecological enhancement is considerable. Implementing the appropriate management for national and international priority species and habitats already known to occur along the route (e.g. including amongst others Black Hairstreak and Wood White butterflies, Bechstein's Bat, Great Crested Newt, species rich wildflower meadow communities and open mosaic habitats on previously developed land) could deliver major ecological gains.

9 European Protected Species

After a recent High Court ruling local authorities must consider all applications where European Protected Species are likely to be affected and a European Protected Species license required, by considering the 3 tests applicable to the Habitats Directive. The ruling stated the following:

"When dealing with cases where a European Protected Species may be affected, a planning authority… has a statutory duty under Regulation 3(4) to have regard to the requirements of the Habitats Directive in the exercises of its functions. Further the Directive's provisions are clearly relevant in reaching planning decisions, and these should be made in a manner which takes them fully into account …"

The three tests are that:
1. The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. There must be no satisfactory alternative; and
3. Favourable conservation status of the species must be maintained.

Together with ecological reports the developer must provide written evidence of the three tests above. This can be contained within the ecological report or as separate stand alone document. The three tests will then be applied by the LPA in considering the application.
Should it be decided that a European protected species licence is required the consultant should include a mitigation strategy.

European protected species present in Buckinghamshire:
Great Crested Newt
Dormouse
Bats (all species)
Otter
Early Gentian

Appendix A

Ecological Survey Season

Key: Optimal Survey Time **Extending into**

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Badgers	Limited sett/bait surveys	Limited Activity			Limited bait marking and sett surveys				Sett surveys			Limited sett/bait surveys
Bats	Inspection of hibernation, tree and building roosts			Limited Activity	Summer roost emergence and activity surveys. (Maternity roosts start to form in May, females give birth in June, Mating starts in September) Note: Potential roost and internal inspection surveys are possible all year round. Trees					Limited Activity	Inspection of hibernation, tree and building roosts	
	Note: Potential roost and internal inspection surveys are possible all year round. Trees are best surveyed in winter.											
Birds	Winter species		Breeding birds/migrants species		Breeding birds		Low activity		Migrant species		Winter species	
Dormice	Gnawed hazelnut search (sub-optimal)		Nest tube / cage trap survey from April to November Nest searches (optimum time September to March)						Gnawed hazelnut search (optimum November to December)			
Great–Crested Newts	Newts hibernating		Pond surveys for adults / Terrestrial surveys / Egg surveys April to mid-June / Larvae surveys from mid-May				Terrestrial habitat and larvae surveys		Terrestrial habitat survey		Newts hibernating	
Invertebrates												
Otters	Limited by vegetation cover and weather conditions rather than seasons											
Reptiles	Reptiles hibernating		Peak survey months are April and May				Reduced basking time reduces effectiveness of refugia survey		Peak survey month	Limited activity	Reptiles hibernating	
Water Voles	Low activity	Initial habitat survey	Habitat and field signs / activity surveys May be limited by vegetation cover and weather								Initial habitat survey	Low activity
White-Clawed Crayfish	Reduced activity			Searching Torching Trapping	Breeding torchlight survey only (no handling due to females releasing their young)		Substrate search by hand Torchlight and trapping surveys				Reduced activity	
Habitats	Phase I (sub-optimal) No other detailed plant surveys Mosses and lichens only			Detailed habitat assessment surveys National Vegetation Classification Surveys for higher plants and ferns Mosses and lichens in April, May and September only						Phase I (sub-optimal) No other detailed plant surveys Mosses and lichens only		
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Points to note regarding surveys

- For certain species and habitats surveys can be carried out at any time of year, but for other species, survey activity at particular times of year is required to give the most reliable results, as indicated in Figure 1.

- Surveys conducted outside of optimal times may be unreliable. For certain species (e.g. Great Crested Newt) surveys over the winter period are unlikely to yield any useful information. Similarly negative results gained outside the optimal period should not be interpreted as absence of a species and further survey work maybe required during the optimal survey season. This is especially important where existing surveys and records show the species has been found previously on a site or in the surrounding area. An application may not be valid until survey information is gathered at an optimum time of year.

- Species surveys are also very weather dependent so it may be necessary to delay a survey or to carry out more than one survey if conditions are unsuitable, e.g. heavy rain is not good for surveying for otters, as it washes away their spraint (droppings). Likewise bat surveys carried out in wet or cold weather may not yield accurate results.

- Absence of evidence of a species does not necessarily mean that the species is not present, nor that its habitat is not protected (e.g. a bat roost is protected whether any bats are present or not).

- Competent ecologists should carry out surveys. Where surveys involve disturbance, capture or handling of a protected species, then only a licensed person can undertake such surveys (e.g. issued by Natural England). Surveys should follow published national or local methodologies.

Appendix B

Sources of further information

Buckinghamshire and Milton Keynes Environmental Records Centre
BMERC, County Hall, Walton Street, Aylesbury, Bucks, HP20 1UY
Telephone: 01296 382431 Email: erc@buckscc.gov.uk

Buckinghamshire Historic Environment Record
County Hall, Aylesbury, Bucks, HP20 1UY
Telephone: 01296 382072 Email: smr@buckscc.gov.uk

Aylesbury Vale Barn Owl Project
Biodiversity Team, Aylesbury Vale District Council
Haydon Mill, Rabans Lane, Aylesbury, HP19 8RU
Telephone: 01296 435134 Email: dshort@aylesburyvaledc.gov.uk

Upper Thames branch of Butterfly Conservation
Honorary Secretary & Branch Contact: Dave Wilton
Email: Wilton@burnhamlodge.plus.com

North Bucks Bat Group
c/o Haydon Mill, Rabans Lane, Aylesbury, Bucks, HP19 8RU
Telephone (office hours) : 01296 427972
Email: info@northbucksbatgroup.org.uk

Appendix C

Relevant Legislation and Glossary

Ancient Woodland

Ancient woodland is identified in PPS9 as a valuable biodiversity resource, as once it is lost it cannot be recreated. PPS 9 encourage the protection of ancient woodland and veteran trees.

Sites of Special Scientific Interest (SSSI)

SSSI's are a selection of the country's best wildlife and geological sites. They are protected under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006. The legislation makes it an offence to carry out or permit to be carried out any potentially damaging operation.

Local Wildlife Sites (LWS)

LWS are sites of significant local wildlife value which are designated and managed with landowner permission and engagement. There is no statutory designation for these sites but they are given protection within the local planning system. They are a 'material consideration' in the determination of planning applications, and this should ensure that there is a general presumption against development upon them.

Biological Notification Area (BNS)

These sites are currently in the process of being surveyed and designated as LWS if found to hold considerable wildlife interest.

Protected Species

Species	Protection	Notes
Bat (All Species)	**Wildlife & Countryside Act; CROW Act Habitats Regulations** Cannot intentionally or recklessly kill or disturb bats. Cannot damage, destroy or obstruct access to bat roosts, whether or not bats are present.	Natural England Licence required
Dormouse	**Wildlife & Countryside Act; CROW Act Habitats Regulations** Dormouse and their breeding sites protected	Natural England Licence required
Great Crested Newt	**Wildlife & Countryside Act; CROW Act Habitats Regulations** Newts and their habitats protected	Natural England Licence required; entire lifecycle is protected (water body and terrestrial habitat). EN guidelines state that should consider possibility of newts up to 500m from a pond.
Otter	**Wildlife & Countryside Act; CROW Act Habitats Regulations** Otters and their breeding sites protected	Natural England Licence required
Water Vole	**Wildlife & Countryside Act; CROW Act** Cannot disturb or destroy places for shelter or protection; cannot disturb water voles while they are using such a place.	Legal protection requires that due attention is paid to the presence of water voles and that the places they use for shelter and protection are safeguarded, generally accepted to be within a 10m strip from a watercourse.
Reptile	**Wildlife & Countryside Act; CROW Act** Animal alone protected	Need to show how development would progress without killing reptiles
Bird	**Wildlife & Countryside Act; CROW Act** Cannot kill or disturb birds; cannot destroy nests	
Badger	**Wildlife & Countryside Act; CROW Act** Full protection for animals and setts	Natural England Licence required required for works within 30m of a sett
Invertebrate	The **Biodiversity Action Plan (BAP)** is the UK's initiative to maintain and enhance biodiversity in response to the Convention on Biological Diversity signed in 1992.	Priority species and habitats are those that have been identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan (UK BAP). Several species of invertebrates are included in the UK BAP.