Proposals for a Waddesdon Parkway Avenue

Waddesdon to Aylesbury Parkway Station following the course of Akeman Street

Proposal taken forward by Buckinghamshire County Council

Revised
February 2016
Proposals for a Waddesdon Parkway Avenue from Waddesdon to Aylesbury Parkway Station following the course of Akeman Street as far as possible

Background to the study into the feasibility of creating a National Cycleway, of which the Waddesdon Parkway Avenue could be a part

In January 2014, the Department for Transport (DfT) commissioned consultants, Royal Haskoning DHV, to carry out a Feasibility Study into creating a series of world class cycling routes from London to Birmingham, Manchester and Leeds. The project considers a study area that is generally three miles either side of the planned HS2 Rail alignment, and was conceived as an opportunity to deliver excellent local facilities for communities along the whole length of the proposed railway.

It is envisaged that each section of cycle route would serve as an important facility at a local level, connecting where people live, to where they want to go; and by linking the individual sections together, a continuous long distance route could be created that would provide an attractive leisure and tourism facility as well.

As far as possible the project was also to enhance pedestrian routes, and in some cases bridleways too, all within the context of creating continuous, safe and attractive routes which would encourage the public to cycle for local trips, for leisure and as tourists.

The report of this first phase of work was completed in December 2014. It included a total of 19 route appendices, each of which described a section of the preliminary route options in some detail as far as this was possible.

Second Stage

The DfT has commenced a second phase of the Feasibility Study (March 2015) designed to explore the options in greater detail, and in particularly to enter into a close discussion with Highway Authorities, Local Councils, interested individuals and groups, and the larger landowners, including Network Rail, the Canal & River Trust, the National Trust, Sustrans, and HS2 Ltd.

This second phase is to take place through to October 2015 when the Project team will submit their report showing a set of proposed routes which has the general support of a wide number of authorities, and one which complements their existing programmes, strategies and policies.

This note looks at one of the key sections – Waddesdon to Aylesbury Parkway in some detail, as an example and as a highlight along the proposed route in Buckinghamshire, and indeed a particularly noteworthy section of the whole route from London to Manchester and Leeds.

General description of the proposed Waddesdon Parkway

The way north from Aylesbury simply could not bypass such a memorable attraction as Waddesdon Manor. But the traffic on the A41 main road is sufficient to preclude any sort of popular cycling and as a consequence it became clear at an early stage of the feasibility study that a new route would have to be created, separate from the main road, and running at least in part, on Waddesdon Estate lands.

As well as serving local needs, connecting Waddesdon residents to Aylesbury, a route here would provide a direct link from the new Parkway Station to the Manor.

The perfect idyll – the bridleway section of the Eythrope Drive on the way to Stone running beneath mature chestnut trees

The Millennium Avenue
Waddesdon Village is tantalisingly close to Aylesbury Parkway Station but the heavy traffic on the A41 prevents all but the most experienced people cycling to the station. It is certainly no place for the inexperienced or families. In addition Waddesdon Manor attracts 400,000 visitors a year, almost all of whom arrive by car and for whom an extensive new carpark has just been constructed. Yet the Manor is less than 6kms from the Station, an easy cycle ride, and even a good walk – if only there was a safe way.

The propose a formal avenue largely running on the line of the old roman road, Akeman Street. Although there are no visible remains of the road, the hedge line of the field to the west of Cranwell Lane does correspond with the alignment of the road, and public footpaths approximate to its course.

The proposals set out here are the result of observation on the ground and discussion with the Waddesdon Estate. There are already a number of memorable avenues on the Estate. The Drive to Eythrope is one, and the more recent Millennium Avenue stretching away from Windmill Hill is another. This Parkway Avenue need not be so grand, but it could be equally valuable as it would frame the route to Waddesdon Manor for all those who chose to come by foot or cycle, and could be a daily route for local residents.

1. Drive to Waddesdon Manor
2. Existing and planned links to the village in order that the Parkway route can be used for everyday journeys to Aylesbury by local people.
3. The New Visitor Centre. Cyclists to follow the existing one way carpark loop road, whilst walkers to use the central walkway.
4. This was the grand approach to the Manor, and now an important farm road. Run through the avenue of trees on the north side of the road before crossing it on the line of Akeman Street.
5. The Akeman Street section could be 2.6km long.
6. The ramps to the planned bridge over HS2 should be modified so as to accommodate the Avenue Route.
7. Follow existing boundaries in the interim before the HS2 works.
8. Follow the old main road and the boundary of the New College and Thames Water Fields.
9. Existing accommodation bridge under the Network Rail lines to reach Aylesbury Parkway Station.
Map 1. Waddesdon

As well as making a memorable approach to Waddesdon Manor, the Parkway Avenue should provide for a convenient year round route for local residents to reach the Parkway Station and Aylesbury itself. A number of ways through to the Village are possible, as shown in the map:

a. via the existing visitor access roads travelling one way on the loop through the carpark.
b. planned new housing will result in a good local link past the school.
c. Wormstone Lane.
d. the first part of Akeman Street is best avoided as it runs clean across a wide field.

The main route can be described as follows:

1. The existing roads serving the National Trust Carpark would make for an attractive way through to the main road and the proposed route north towards Buckingham via Quainton Lane.

2. The New Visitor Centre. Cyclists could leave their bikes here if they wished to take the bus up to the Manor and couldn’t quite face the hill!

3. Pedestrian spine path serving carpark leads to the proposed route to Aylesbury Parkway Station.

4. Cyclists to use the one way roads through the carpark. Traffic will be travelling slowly here.

5. Construct a 2.5m wide board walk over the pond here as a continuation of the spine walkway.

6. Provide a raised pavement crossing of the carpark road and cut a defile through the low bank to reach the start of the Avenue.

7. The path to follow around the eaves of the wood either beside, or on the carpark standby track.

8. Build up this existing link to Warmstone Lane to a good shared use standard or provide for a new link path through the wood.

9. Cross the farm road on a raised crossing, to pass close to the existing pond, which is a feature of the route.

10. Choose a way through the wood, felling 2 or 3 trees to create the best alignment. Fence the boundary of the farmyard and plant hedging on the edge of the wood. The path to be constructed as “no dig” past the trees.

11. Emerge from the wood to follow centrally down line of existing avenue trees. Note that there are a number of landscape designs which could be included in the overall concept of the Parkway Avenue including, formal avenue tree planting, copes and clumps of trees, hedged green lanes, and fences with open views over the countryside. The final arrangement will evolve, partly in response to planting to shield the HS2 railway, and its final arrangement may only be completed in stages as the Parkway Avenue matures into its surroundings.

12. Run centrally through this recently felled copse and allow for the planned path in any replanting scheme.

A: standard new construction

B: Tree root protection
Map 1. Waddesdon

- The options for links to Waddesdon village
- Proposed Avenue to Aylesbury Parkway Station

1. National Trust Visitor Centre
2. Widen this path by replacing school hedge with fence
3. Start of planning application
4. 2500 scale at A3

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Map 2. The Parkway Avenue along Akeman Street

The proposed route joins the line of Akeman Street halfway along the Farm Drive. There is no visible sign of the construction of the road along its course over fields. Archaeologist’s advice will be needed watching the construction progresses here, but as the excavation for the path will be scarcely 200mm deep it is improbable that the construction progresses here, but as the excavation for the path will be scarcely 200mm deep it is improbable that anything of interest will be found, as the whole area has been ploughed to greater depth than this. Aligning the proposed path with the roman road will protect it against future disturbance and give the travelling public the frisson that they are actually walking and cycling on the route the Romans used.

The exact arrangement of the tree planting will need to be refined but it maybe that it would be appropriate to select species which grow rather faster than the oaks planted for the Millennium Avenue, and then to plant at closer centres with a view to later thinning, in order to create an early effect for visitors to Waddesdon.

Whilst hedging is probably important along the north side of the path, especially to shield HS2, it would be better to only fence the southern side in order to open up views of the hills.

13. Continue along line of existing trees, planting additional specimens if necessary.

14. Provide a raised crossing of the main farm road and mark this crossing carefully as it is the point where the Parkway Avenue joins the course of Akeman Street.

15. Veer around to follow the margin of the field, or even better join the line of Akeman Street over this section.

Sketch cross section through Avenue and Akeman Street

Heavy standards planted at 15m intervals, species chosen to minimise root damage to path

Standard" path construction 3.0m wide, constructed of 400mm of compacted stone on "netlon" or similar reinforcing mesh, finished with macadam 60mm thick and dressing of washed gravel

Shoulders to feather back to ground level and all soil sown with wild grass and flower mix

Stockproof hedge planted to north side to shield HS2

Fence on south side to maintain open views

Possible remains of course of roman road to be checked by trial pits at intervals and a longitudinal geophysical survey

A. Consider marking significant junctions with the Roman Road with sculpture, perhaps made from scrap materials as the examples here.

16. Rejoin the Akeman Street within this woodlands strip. New drain required.

17. Provide a safe crossing. This should be a feature to slow traffic down and to give priority to travellers on the Parkway Avenue. Perhaps mark each road crossing with a high flagpole or other similar detail visible from far off?

18. Run along the line of the roman road, with avenue trees both side. Note that the nearby public footpath is not exactly on this alignment and it could be shifted across.

B. Have seats and picnic areas at intervals choosing sites with a good view and a local significance (e.g. Junction of paths).

Example of newly planted avenue near Buckingham

Example of seat on Tarka Trail

Scrap cattle on the Consett Path
Map 2. The Parkway Avenue along Akeman Street

View of good quality path 3m wide near Dunford Bridge, finished with a gravel on bitmac base. This is the standard envisaged for this Parkway Avenue.
Map 3.

Akeman Street is the Saxon name given to the significant roman road connecting the Fosse Way at Cirencester and Watling Street at St. Albans. Some parts of its route are already used as public paths including a 10km stretch between Tackley and Stonesfield in Oxfordshire. The 2.7km section here proposed for the Waddesdon Parkway would be the only substantial traffic free section for cyclists, as well as pedestrians, although in Aylesbury itself, their Ruby Cycleroute along the Bicester Road follows the course of Akeman Street between Rabans Lane and Gatehouse Road. (The HS2 Cycleway envisages renewing this to a higher standard as part of the ongoing route to London).

Akeman Street also passes the frontage of the National History Museum in Tring, but unfortunately it would not be wise to recommend cycling on from Aylesbury to Tring, as for the whole way the roman road is now a heavily trafficked road. It could though be a focus of a ride via the Aylesbury Arm of the Grand Union Canal, returning via the Wendover Arm, and such an excursion would be an interesting companion to that of visiting Waddesdon Manor itself.

20. At this point cross the ditch via a culvert and kink to the south side of the hedge. Whilst this is not on the line of Akeman Street it has the views and the sun. This kink would also be a good point for a viewing mound looking westwards over the fields towards Waddesdon Manor itself.

21. Fence the path off from the grazing with 7 wire sheep mesh and two lines of barbed wire. Keep the view open for a distant sight of the Manor.

22. Detour to the south of the pond (which is a feature of the route especially if the fencing can be removed).

23. Provide safe, defined crossing of road.

24. Aim straight to re-join the Akeman Street. The section of field to the south might be best managed as a separate small grazing area?

25. Cut through the hedge (removing the currently very difficult stiles).

26. Cross this field on the line of the roman road.

27. This might be a good picnic field. The old tin barn could be moved north to the other side of the Avenue if required. Or remove the hedge to the south of the small field so as to incorporate this patch into the larger field beyond.

28. Cross these last two fields on the line of the roman road. Provide farm crossings for each field.

29. Culvert this and any other ditch.

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29. Culvert this and any other ditch.
Map 3.

- Footpath on north side of hedge
- Proposals for a Waddesdon Parkway Avenue from Waddesdon to Aylesbury Parkway Station following the course of Akeman Street

Lookout mound at York

View along proposed line of path looking towards Aylesbury. Fence field side and maintain views over the fields

Waddesdon Manor and the National History Museum showing possible connections via Akeman Street and canal towpaths

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Map 4. Crossing HS2

Over this section there needs to be an interim route following the alignment of existing paths pending the construction of HS2 Rail. The planned bridge over the railway will be suitable for the public to cross the railway, but the current ramp arrangements need to be revised to meet the gradient, width and alignment of the Avenue Route. HS2 Rail are prepared to do this work provided the revised ramps have planning consent and Council approval. For this reason these ramps are shown as part of this planning application, even though for the interim the public will use an alternative route.

30. The main ramps should have a gradient of 1:21, a path width of 3m and 1.5m wide verges either side, all as shown in the cross section.

31. The top of the ramp should be widened to provide a viewpoint for HS2 train spotters, and as this will be the public’s first view of Waddesdon Manor (coming from the Station), a good seat with clear views should be provided.

32. The bridge should be 4.0m wide between parapets to provide an effective 3m width.

33. The final alignment of the Avenue would best follow the line of Akeman Street across the remaining corner of this field. This detail could not be implemented until after the completion of HS2 and its exact arrangement may vary depending upon circumstances at that time.

34. The interim Avenue Route should follow the alignment of existing paths and field edges, and be constructed to the full 3m wide standard as it is anticipated that path usage will be considerable even in these early years.

34a. Provide a narrow cattle grid and wicket gate on this boundary to the New College Land. This detail could be associated with a new culvert crossing of the ditch at this point.

35. Re-join the former main road at this point. Modify the existing field gate access to give clear access for walkers and cyclists. This will require a self-closing wicket gate and standard narrow cattle grid adjacent to the existing field gate, similar to the example shown below. Once beyond the gate the track ramps up to the old road level from where there is a distant view of the Manor and at which point a large seat should be placed. As this is almost on the line of Akeman Street and near the town of Fleet Marston a historical theme would seem appropriate.

Cross section through HS2 bridge approach embankments

3.0m wide path at 1:20 gradient

1.5m wide grass verges

Example of cattle grid with wicket gate

View along field edge which is the current bridleway route. The sealed path should be constructed along the hedge side of the grass strip leaving plenty of space for equestrians to use the verge beside the path

View of York and Selby path showing horses on adjacent verge
Map 5.

The final section of the Roman Road cuts across fields and passes through residential gardens.

It would probably be better to follow the old main road, which is now cut off, and then follow the field margins to Parkway Station. This adds little to the distance but does suffer from traffic noise on the nearby main road. The station itself is reached via a small accommodation bridge under the railway at which point this avenue route from Waddesdon can be marked with an entrance archway or similar welcoming detail.

36. The width of the old main road could be reduced by planting avenue trees within the carriageway leaving 4m of tarmac for the avenue.

38. It would be worth while to reinforce the planting along the wide verge to the A41 in order to reduce the impact of traffic on path users. The path itself should be lined with avenue trees in order to maintain the concept of a grand approach to Waddesdon Manor. The fence should be carefully detailed so as to ensure that there is no possibility of livestock breaking through to the main road. So we are showing a double fence planted with hedging in between in order that we have security in depth.

39. Bridge the river – a span of 6m-8m or so would be sufficient as the downstream culverts under the main road are not large.

40. Turn the Avenue to run up the side of the Thames Water field. Here the railway embankment provides protection against the A41. The boundary would again comprise a double fence and hedge.

41. This existing railway accommodation bridge provides a particularly convenient link to Aylesbury Parkway Station. Although it is not large, it is sufficient, and its floor could possibly be slightly lowered to give more headroom. This bridge might also be a useful link to the down platform if the railway tracks are doubled.

42. Make a level link to the station building. This will require a small alteration to the existing car parks, and even here the avenue planting should feature.

43. This would be a good location for the Waddesdon Bike Hire Centre. As the distance to the Manor is quite a long way, and too far for many to walk, the provision of Waddesdon Bikes (trailers and even motorised wheelchairs) will be essential if large numbers of the public are to visit the Manor and Estate this way. Whilst this is not the place to discuss Bike Hire in detail, a satisfactory operation might include hire at each end, so that bikes could be returned to the station for reuse maybe 2 or 3 times each day, each way, whilst the public were exploring the House and gardens on foot.

44. Mark out a link across the car park to join the existing Ruby Way Cycling route to Aylesbury -see detail.

45. Incorporate a continuation of the Parkway, through future development to reach the Thame Valley.
Proposals for a Waddesdon Parkway Avenue from Waddesdon to Aylesbury Parkway Station following the course of Akeman Street

Detail arrangement of the Aylesbury Vale Station area and link to the existing cycling routes

1. Existing Network Rail works access to remain, although it would be fractionally more convenient if it was rearranged to run up to the track a little further to the north of the accommodation bridge.

2. Fence off the Rail access track, construct a low retaining wall to allow the path to run out at an easy slope, and surface through the subway to complete the Avenue through to the station.

3. Possible area for future bike hire.

4. Avenue route along field edge to Waddesdon

5. Extend existing brick walkway through to the Avenue, so as to provide a direct pedestrian route to the station entrance.

6. Rearrange the existing car parking. Note that vehicles can park across the works entrance except when it is in use. Alternatively arrange the security gates so that the public can emerge at the same point as he works access.

7. Remove three existing parking spaces to create space for the circulation in the car park

8. Mark cycle logos down these two aisles of the carpark to lead cycles through to the cycle track to Aylesbury.

9. Remove one carpark space to provide for the dedicated route.

10. Construct new link up slight slope to join existing cycling routes

11. Ruby Way to the centre of Aylesbury

12. Existing station buildings.

End of planning application

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Proposed diversion of adjacent public footpaths onto the Parkway Avenue alignment

The map shows the footpaths which can be conveniently diverted onto the line of the Parkway Avenue alignment.

**WAD/7A/1** Diverted to the Avenue and at its western end to run northwards to the west of the farm boundary to join Warmstone Lane.

**WAD/7B/1** The section north of the Parkway Avenue to be deleted.

**WAD/7A/2** The eastern section of the path to be slightly diverted to the Avenue (if it is not exactly aligned already). The western end to be diverted to the Avenue.

**WAD/7A/3** which runs north of the hedge to be diverted to the south of the hedge and the pond onto the alignment of the Avenue.

**WAD/7A/4** to be diverted onto the adjacent Avenue where this does not exactly line up with the route of the footpath.

**WAD/6B/1** to be truncated at the Avenue and to lose its southern most point.

**WAD/7A/5** to be diverted to run from the end of WAD/7A/4 along the line of the Avenue as far as the boundary of HS2 Rail, and then to follow the temporary line of the Avenue south to join FMA/1/1.

Note that **WAD/8/3** and **FMA/1/1** will upon the completion of HS2 Rail be diverted to cross the railway on its new bridge.

It is proposed that Buckinghamshire County Council make a single path diversion order to come into force once the Parkway Avenue Path is opened to the public.

The Avenue will then have the status of being a public right of way on foot, with permissive use by cyclists and in parts by equestrians.

No walking routes currently available will be adversely affected by these diversion proposals, which will have the real benefit of providing a smooth, dry and all weather surface over its whole length.
Archaeology

Akeman Street was a major Roman road in England that linked Watling Street with the Fosse Way. Its junction with Watling Street was just north of Verulamium (near modern St Albans) and that with the Fosse Way was at Corinium Dobunnorum (now Cirencester). Its course passes through towns and villages including Hemel Hempstead, Berkhamsted, Tring, Aylesbury, Alchester (outside modern Bicester), Chesterton, Kirtlington, Ramsden and Asthall. Parts of the A41 road between Berkhamsted and Bicester use the course of the former Roman road, as did the Sparrows Herne turnpike between Berkhamsted and Aylesbury. A minor road between Chesterton and Kirtlington also uses its course. Other parts are in use as public footpaths, including a 6-mile (9.7 km) stretch between Tackley and Stonesfield that is part of the Oxfordshire Way.

The origins of the road’s name are uncertain but certainly date back to the Early Middle Ages. Some have suggested that “Akeman” derives from the Anglo-Saxon words for “oak-man”. Others have suggested a connection with Bath, which the Anglo-Saxons called Aceamnanesceastre (Aceamnanes apparently being derived from the Roman name Aquae Sulis). It is unclear how this might have become associated with the road, but one possibility is that the name was originally used for the longer stretch of road from Bath.

There are no historic signs of Akeman Street on the ground. Recent excavations west of Waddesdon (tree planting) did not reveal any tangible evidence of the roman road.

Over the Parkway Avenue, the footpaths WAD/7A/2, WAD/7A/3 and WAD/7A/4 appear to follow the course of the road and maybe the remnants of the ancient route.

The field boundary and hedge immediately to the west of Cranwell Farm also appears to follow the road alignment, possibly on its south side.

Over the proposed Parkway Avenue section, the fields have been repeatedly ploughed and if there are any remains of the road they will have to lie at a level of 200-300 run below field level or lower.

We proposed to construct the Avenue on the line of the roman road with an excavation of no more than 150mm as shown in the cross section, or as a no dig/no disturbance construction which would have the advantage that the path would drain at all times.

This arrangement will have the twin advantage of protecting any possible remains of the road and of giving the path users the interest of actually walking or cycling on a peaceful traffic roman road alignment.

Advance Works

The recommendations of the Archaeological Report will be adopted including undertaking a geophysical survey to try to identify any traces of Akeman Street and the roman town of Fleet Marston. The no dig/no disturbance construction is likely to be appropriate except in the case of definite indication of remains in which case advance excavation will be required and the design modified accordingly.

If remains are found then no tree or hedge planting should be carried out within 5m of the edge of the road.
Wildlife, Ecology and Landscaping

The Wildlife and Ecology report is attached (Appendix) and the project will follow the report's recommendations.

The various tree and hedge planting options are shown on page 8. The final combination of avenue tree planting, hedging, copses and small woodlands will be a result of wider planting schemes associated with HS2 Rail. Whatever the arrangement it is intended that the Parkway Avenue will create a memorable approach to Waddesdon, the Village and the Manor.

Design and Access Statement

The purpose of this project is to create a high quality, all weather path suitable for year round use on foot and bicycle. The path will be rural in nature. It will be finished with a fine gravel surface bound to the sealed material below. It will not have hard edge kerbs or formal street furniture. It will not have lighting, although the incorporation of surface mounted P.V light studs will be considered to delineate the edges of the path.

The path will have good access to Waddesdon Village and the Manor, to intermediate public roads and rights of way, and to Aylesbury Parkway Station where it will connect with the extensive network of cycling facilities in Aylesbury itself.

The project will take active steps to encourage visitors to Waddesdon Manor, to come by train and then walk or cycle to the Manor. A cycle hire operation may be provided at the Station.

The path will be designed throughout to be suitable for wheelchairs, prams and buggies and it will be arranged with seats at intervals, with views for the elderly and less active,

Construction and Works Programme

This project will be carefully constructed using small plant and equipment running along the corridor of the path to create the minimum of disturbance.

The site offices, storage and equipment will be at the farm buildings adjacent to the main lodge where hard standings are available.

The principle materials will be crushed stone for the base of the path and bitmac for the final surfacing.

In total 7000 tonnes of materials will be required, amounting to four 20 tonne lorries per day over the anticipated 100 working days. The material will be delivered by public road for convenient access to the path.

As far as possible all construction will be carried out by local contractors familiar with fencing, planting and path construction.
Appendix: Preliminary Ecological Appraisal
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1. Introduction

Buckinghamshire County Council (BCC) Ecology Advice Service was commissioned by Place Service Sustainability Team Leader at BCC to undertake a Preliminary Ecological Appraisal in order to assess the feasibility of a proposed cycleway between Waddesdon and Aylesbury Vale Parkway station.

This document reports the ecological findings of a desk study and site visit during which the entire length was walked and potentially sensitive ecological receptors noted. The site visit was made on the 22nd October 2015.

1.1. Objectives

The objective of this report is to provide ecological baseline information pertaining to the site such that recommendations can be made for further surveys where required and appropriate mitigation and enhancement measures are taken.

Ecological baseline for the site is essential so that the impacts of the proposed development upon sensitive ecological receptors can be suitably managed. Mitigation measures are recommended such that these impacts may be minimised and enhancement measures are suggested such that biodiversity net gain can be achieved in line with national planning policy.

1.2. Proposal

This survey has been prepared in support of a feasibility study, considering the creation of a National Cycleway in lieu of the High Speed Rail 2 development proposal. The proposed Waddesdon Parkway cycleway is the result of a recognised need for a cycleway from Waddesdon to the Aylesbury Vale Parkway railway station and vice versa to be routed away from the A41, which is deemed unsuitable to support popular cycling. As well as serving local needs, connecting Waddesdon residents to Aylesbury, a route as proposed would provide a direct link.

The initial proposal\(^1\), and at the time of writing, recommends a formal avenue largely running on the line of the old Roman road, Akeman Street. Although there are no visible remains of the road, in part hedge lines and public footpaths correspond with the alignment of the road.

1.3. Legislative and Planning Context

1.3.1. Legislation

The two principal pieces of legislation protecting wild species and habitats in England that afford protection to some of the UK’s rarest and vulnerable species are the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended).

Furthermore, some animals are protected under their own legislation (for example, the Protection of Badgers Act 1992).

1.3.2. National Planning Policy and Guidance

The potential presence of protected species is a material consideration when a planning authority is determining a planning application where impacts upon a protected species are likely to arise as a result of the proposed development.

National Planning Policy Framework (NPPF)

Paragraph 109 of the NPPF\(^2\) states that ‘The planning system should contribute to and enhance the natural and local environment by:

‘minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...’

Paragraph 165 also states that:

‘Planning policies and decisions should be based on up-to-date information about the natural environment and other characteristics of the area...’

ODPM Circular 06/2005\(^3\) Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System

The presence or otherwise of protected species, and the extent that they may be affected by the proposed development, should also be established before planning permission is granted.

Natural Environment and Rural Communities Act 2006 (NERC)

Through Section 40 (S40) of the Natural Environment and Rural Communities Act (NERC)\(^4\) 2006 Parliament has stated that

‘Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity’. Section 40(3) also states that ‘conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat’. Under the Act, “public authority” relates to a statutory undertaker (i.e. Network Rail).’

\(^1\) John Grimshaw & Associates Ltd. Proposals for a Waddesdon Parkway Avenue. Revised September 2015.


Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of Principal Importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under S40 of the NERC Act (2006), to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

The UK Post-2010 Biodiversity Framework

The UK Post-2010 Biodiversity Framework has succeeded the UK Biodiversity Action Plan (BAP) and the current strategy for England is ‘Biodiversity 2020’. The lists of Priority Species agreed under the UK BAP still forms the basis of much biodiversity work in the UK and Species Action Plans developed under the UK BAP still remain important and valuable reference sources for background information on priority species under the UK Post-2010 Biodiversity Framework.

2. Method of assessment

2.1. Desk study

A search for statutory and non-statutory sites of nature conservation importance within 500m of the proposed route was carried out through the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERCl. Ordnance Survey MasterMap (GIS data) and aerial imagery were also consulted in order to identify any water bodies within close proximity.

Protected (nationally and internationally) and notable (UK Biodiversity Action Plan or Local Biodiversity Action Plan) species records within 500m of the proposed line of the cycleway were also requested from BMERCl In addition, the High Speed Rail 2 Phase 1 Environmental Statement Community Forum Area 12 Waddesdon and Quainton report and map books were reviewed for ecological information regarding the area.

2.2. Extended Phase 1 Habitat Survey

An ecological survey of the site was undertaken on the 22nd October 2015 following the methodology as set out in the Handbook for Phase 1 Habitat Survey (2010). The survey provides information on the habitats within the survey area in order to assess their potential to support protected and/or notable species.

The site survey sought to identify evidence of the presence of legally protected and/or notable species and to assess the suitability of the habitats within and immediately adjacent to the proposal boundary to support them. In particular:

- An assessment of the potential for water bodies to support great crested newt (Triturus cristatus)
- An assessment of the potential value of trees as roosting sites for bats where they are in close proximity to the proposal
- A search for evidence of the presence of badgers within the proposal boundary e.g. setts, paths, prints, foraging signs and latrines

2.3. Habitat Suitability Index (HSI) assessment

The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) Reg.39 and the Wildlife and Countryside Act 1981 (as amended) S.9 mean it is illegal to: deliberately capture, injure or kill a great crested newt; deliberately disturb a great crested newt; deliberately take or destroy its eggs or damage or destroy a breeding site or resting place used by a great crested newt; and to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.

Great crested newts can use suitable terrestrial habitat up to 500m from a breeding pond, although recent research from by Natural England suggests that newts are likely to travel no more than 250m when suitable habitats for foraging and hibernation exist within this radius of their pond.

Along the length of the line, the desk study identified seven ponds. During the field survey, ponds P4 and P6 were both dry / non-existent. Therefore a habitat suitability assessment was undertaken for ponds P3, P5 and P7, using the Habitat Suitability Index (HSI) score which gives an indication of the suitability of a water body to support breeding great crested newts. A habitat suitability score of 0 indicates unsuitable habitat, 1 represents optimal habitat.

2.4. Initial assessment bat survey

In Britain all bat species and their roosts are legally protected, by both domestic and international legislation. This means it is an offence to:

- Deliberately capture, injure or kill a bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost

2 Species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006
6 Species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006
An initial assessment bat survey is performed during daylight hours and provides an opportunity to exclude the need for further survey work, if the following triggers can be confirmed absent from the site of proposed development:

- Bats.
- Evidence of recent bat activity e.g. droppings, prey remains, urine staining.
- Features suitable for roosting.

If bats, evidence of their recent activity and or features suitable for roosting cannot be confirmed absent from the site of proposed development, this report will make recommendations for further survey work and or design mitigation, where this is consistent with the Hundt (2012) and considered appropriate by the surveyor in the context of the proposed development.

No buildings are present within the application boundary. However, a number of trees line the brook immediately up and downstream of the culverted section. Suitable features are identified in the table below and represent a degree of potential to support bat roosts:

<table>
<thead>
<tr>
<th>Suitable features for bat roosts and associated level of bat roosting potential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High potential</strong></td>
</tr>
<tr>
<td>Woodpecker holes</td>
</tr>
<tr>
<td>Cracks/crevices</td>
</tr>
<tr>
<td>Loose or flaking bark</td>
</tr>
<tr>
<td>Medium to dense ivy cover</td>
</tr>
<tr>
<td>Deadwood in canopy or stem</td>
</tr>
<tr>
<td>Snagged branches</td>
</tr>
<tr>
<td>Hollow stem or limb</td>
</tr>
</tbody>
</table>

### 2.5. Survey limitations

Due to the seasonal behaviours of animals and differences in vegetation growth patterns, ecological surveys may be limited by the time of year in which they are undertaken. This survey was undertaken on the 22nd October 2015, as such it may not provide a complete list of the plants and/or animals that may be present, in particular those botanical interests that flower earlier in the growing season. Nonetheless, an October survey is likely to give a robust account of flora and fauna and therefore, a reliable account of the ecological baseline can be expected.

### 3. Existing conditions

#### 3.1. Designated sites of nature conservation value

##### 3.1.1. Statutory sites

<table>
<thead>
<tr>
<th>Statutory sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5. Survey limitations</td>
</tr>
</tbody>
</table>

There are no statutory sites within the 500m search radius from the proposed line. This includes Special Areas of conservation (SAC), Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

#### 3.1.2. Non-statutory sites

Approximately 500m of the western end of the proposal lies within Waddesdon Park Biological Notification Site (BNS) and Quarrendon Fields BNS is located approximately 300m north east of the Aylesbury Vale Parkway station (see Appendix 4).

**Waddesdon Park BNS** is an area of parkland, once about 5 square kilometres with avenues; not ancient. The 65ha slopes around the Victorian manor are still parkland, the rest is farmed. 36 species of lichen (Bowen 1988).

**Quarrendon Fields** is an area of farmland either side of Aylesbury to Quainton Road, 70% neutral grassland, approximately 50% permanent pasture. British Ornithological Surveys between 1974 and 1977 indicated importance for wintering and passage birds. Large numbers of golden plover (*Pluvialis apricaria*), lapwing (*Vanellus vanellus*), fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*).

### 3.2. Habits

This section gives an overview of the habitats within and immediately adjacent to the proposed cycleway. Habits are delineated in Appendix 2.

#### 3.2.1. Semi-natural broadleaved woodland (A1.1.1)

Two parcels of semi-natural broadleaved woodland are present along the route. The first occurs around Wormstone Farm (Figure 3, TN1) and the second is a small area of secondary regrowth (TN20).

At Wormstone Farm the woodland comprises of abundant sycamore (*Acer pseudoplatanus*), frequent silver birch (*Betula pendula*), occasional blackthorn, alder, horse chestnut, willow, ash, alder, hawthorn, elder and rarely lime (*Tilia x platyphyllos*), dogwood, privet and yew (*Taxus baccata*). The understorey / ground cover included frequent snowberry, ivy, nettle and ground elder (*Aegopodium podagraria*) and occasional violet (*Viola sp.*), bramble, wood avens (*Geum urbanum*) and bryophytes.

In addition boundary trees along the A41 and Putlowes Cottages (Figure 32) provide screening to the proposed cycleway and to Putlowes Cottages. These trees reflected the species composition within hedgerow H13.

#### 3.2.2. Plantation broadleaved woodland (A1.1.2)

Two areas of plantation broadleaved woodland will be crossed by the proposed cycleway (TN 8, Figure 13 and TN18, Figure 24). Both appear to be broadly of the same age ~10-20 years old though the composition differs.
The parcel immediately west of Waddesdon Hill comprises predominately of goat willow, with frequent silver birch and an understorey dominated by snowberry.

The parcel indicated by TN18 is considerably more diverse than the aforementioned. Contained within the plantation are some mature trees, particularly oak, ash and willow specimens. The younger plantation comprises abundant silver birch, frequent blackthorn, hawthorn, elder, dogwood and field maple and occasional dogwood, willow, cherry and alder (Figure 26). This parcel forms a key ecological corridor within the landscape and has been previously highlighted in a connectivity mapping exercise14, depicted by Figure 27.

3.2.3. Dense / continuous scrub (A2.1)

There are small pockets of scrub along field, drain and running water margins, though the most significant has established adjacent to the railway along the far eastern length of the proposal (Figure 36). This scrub is almost entirely composed of hawthorn with rarely ash and little in the way of herbaceous vegetation leaving areas of bare soil beneath the hawthorn.

3.2.4. Scattered trees (A3.1)

The area of semi-improved neutral grassland has a low density of recently planted oak trees to create a more formal landscape around the drive way (TN5, Figure 9).

3.2.5. Recently felled broadleaved woodland (A4.1)

Two areas of recently felled woodland are indicated by TN3 and TN4 (Figure 10) which currently comprise of a species mix representative of early colonisers of disturbed land. These include abundant cleavers, nettles, cow parsley, hogweed, docks, and greater plantain, frequent white dead nettle, bristly ox-tongue and occasional red dead nettle, self-set rape (Brassica napus), sycamore and silver birch saplings, mallow, red campion, dandelion, thistle, ragwort and rarely shepherd’s purse (Capsella bursa-pastoris) and poppy (Papaver rhoesas).

3.2.6. Semi-improved neutral grassland (B2.2)

The grassland surrounding the access road to The Bail Cottage, south of Warmstone Lane is of low diversity and has been recently cut to an ankle-height sward, thus limiting identification (Figure 9). Similarly, the headlands, which are of a comparable diversity, have recently been cut. They can be broadly considered to be the same habitat and are described singularly.

The areas of grassland comprise predominately coarse grasses (would require further survey for identification), frequent white clover, creeping buttercup and occasional bristly ox-tongue, nettles, hogweed and rarely dock, ragwort and thistle.

3.2.7. Improved grassland (B4)

Improved grassland was identified in several of the fields adjacent to Cranwell Farm, which is subject to intense sheep grazing. Improved grassland has been subject to long-term grazing pressure and has had a long term input of manure / other forms of nutrient enrichment. The species present are those grass species resistant to high nutrient levels and intense grazing pressure. The fields have an even sward at approximately ankle-height.

3.2.8. Marsh / marshy grassland (B5)

A small pocket of marshy grassland is present within the north-eastern of the initial field, indicated by TN7. It is apparent that this area is frequently wet / inundated with abundant hard rush (Juncus inflexus) and occasional dock (Rumex sp.) present.

3.2.9. Poor semi-improved grassland (B6)

Several fields of poor semi-improved grassland have been identified along the route of the proposal. These grasslands have a restricted list of species due to long term intensive use such as grazing (e.g. sheep, cattle) and are comprised almost entirely of coarse grass species. The fields have a slightly uneven sward with some areas at approximately ankle-height and some between ankle and knee height.

3.2.10. Tall-ruderal vegetation (C3.1)

Areas of tall ruderal vegetation is present adjacent to the access road into Putlowes Cottages. The vegetation predominately comprises nettles, cow parsley, abundant white and red dead nettle, frequent chickweed (Stellaria media) and rarely mallow (Malva sp.) and the garden escape Verbascum sp.

3.2.11. Eutrophic standing water (G1.1)

Ordinance survey mapping highlighted six ponds (P1 to P6), though the field survey highlighted a seventh (P7). Ponds P1 and P2 are both relatively new ponds adjacent to the Waddesdon House parking complex. Pond P3 is crossed by an access road south of Wormstone Farm but is a single water body, Ponds P4 and P6 were both dry / non-existent at the time of survey. Pond P4 is within an area of recently felled woodland and P6 within a small copse and is likely to have been infilled over time by leave fall.

Vegetation within Pond 1 (Figure 1) comprises dominant reedmace (Typha sp.), abundant willower (Epilobium sp.) and soft rush (Juncus effusus), frequent sedge (Carex sp.) and goat willow (Salix caprea), occasional yellowflag (Iris pseudacorus) and rarely osier (Salix viminalis) and dock (Rumex sp.). The water level clearly fluctuates readily, at the time of survey bankside grassland species were inundated including white clover (Trifolium repens), creeping buttercup (Ranunculus repens) and small amounts of black medick (Medicago lupulina). Hedge bindweed (Calystegia sepium) was also recorded. Water level at the time of survey was estimated to be no more than 0.5m depth.

Pond 2 (Figure 2) had far less vegetation coverage (see Table 2) but had a very similar vegetation composition to Pond 1. The water level in Pond 2 was considered to be somewhat deeper, up to approximately 1m depth.

Pond 3 (Figure 6, Figure 7 and Figure 8) is almost entirely covered by reedmace and foal’s-water-cress (Apium nodiflorum). At the time of survey only ~5% of the pond held standing water of a depth no more than 10cm depth, with the majority of the pond heavily silted or dry. Around the margins willowherb (Epilobium sp.) was abundant with frequent hedge bindweed, nettle, bramble and occasional bittersweet and ground ivy (Clethra hederacea). A wooden platform suggests that the pond was once used for pond-dipping / viewing.

Pond 5 (Figure 18) is heavily shaded, predominately by crack willow and adjacent to an access road and fields used for horse-grazing. No aquatic vegetation was evident and the maximum depth to sediment was estimated to be no more than approximately 30cm.

Pond 7 is a small feature which is heavily shaded by a shallow halo of dense scrub. The pond was damp during the field survey and is likely to dry out periodically. No aquatic vegetation was noted.

3.2.12. Running water (G2)

Three sections of running water are crossed by the proposed line of the cycleway. These are a small channel within the woodland at Wormstone, a wet ditch associated with a strip of plantation broadleaved woodland (TN17) and a tributary of the River Thame (TN24 to TN26).

The small channed (Figure 4 and Figure 5) is heavily shaded and is Consequently devoid of aquatic vegetation. The bankful width is approximately 1m and the depth is no more than 5-10cm.

At its widest point, the wet ditch (TN17, Figure 25) is entirely covered with foal’s water cress with a small amount of reed sweet grass. However, for the vast majority of its length the ditch is heavily shaded by marginal vegetation and scrub such as bramble, willowherb, and overhanging tree cover.

The tributary to the Thame (Figure 33, Figure 34 and Figure 35) is more significant and emerges from a box culvert beneath the railway shortly before being culverted beneath the A41, Aylesbury Road and then flowing across fields used for cattle pasture. Around the road and bridge the flow is static and is somewhat ponded before the channel narrows into the fields. The water appears clear and of reasonable quality, though likely eutrophic (nutrient enriched) as indicated by the presence of a duckweed (Lemna sp.) and few other aquatic plants including iris (Iris pseudacorus) around the rail / road and then relatively dense coverage of reed sweet-grass (Glyceria maxima) and foal’s water cress where the channel narrows. The eastern bank is fenced approximately 3-4m from the bank, within which a poorly diverse plant community is supported with a high coverage of nettle. By contrast, the western bank is not fenced and suffers notably from poaching leaving little in the way of a buffer.

3.2.13. Arable land (J1.1)

A large percentile of the land surrounding the proposal is currently in arable use (e.g. Figure 14). At the time of survey, much was freshly tilled.

3.2.14. Amenity grassland (J1.2)

Amenity grassland was noted fronting the houses within Putlowes Cottages.

3.2.15. Ephemeral / short perennial (J1.3)

There are small pockets of ephemeral / short perennial habitat along field, drain and running water margins, however, the most significant area is indicated by TN16 and forms a strip of habitat between an arable field headland and ditch / plantation broadleaved woodland. Species comprise of abundant teasel, cow parsley and hedge parsley (Torilis arvensis), frequent bristly ox-tongue, field bindweed, wild carrot (Daucus carota), yarrow (Achillea millefolium), creeping buttercup, bulbous buttercup (Ranunculus bulbosus), meadow vetchling (Lathyrus pratensis) and rarely common knapweed (Centaurea nigra), burdock (Arctium sp.), ragwort and self-heal.

3.2.16. Intact hedge – native species rich (J2.1.1)

An intact, native species rich hedge refers to those still suitable for stock enclosure including five or more woody species within a 30m length or with diverse herbaceous vegetation. With reference to Appendix 3 hedgerows H2, H3 and H9 are likely to qualify, though a thorough hedgerow survey to Defra guidance15 was not undertaken.

Hedgerows H2 and H3 form a highway / arable boundary divided only due to a junction with another hedgerow. Consequently, they broadly comprise of the same species. The hedgerows contained abundant blackthorn (Prunus spinosa) and hawthorn (Crataegus monogyna) and occasional ash (Fraxinus excelsior), horse chestnut (Aesculus hippocastanum), elder (Sambucus nigra) and rarely oak (Quercus robur) and hazel (Corylus avellana). The main woody component is interspersed frequently with snowberry (Symphoricarpos albus) and occasionally bittersweet (Solanum dulcamara). The herbaceous component contained frequent field horsetail (Equisetum arvense), nettle (Urtica dioica), and occasional cleaver (Galium sp.) and hogweed (Heracleum sphondylium).

Hedgerow H9 formed part of the boundary to an enclosure used for sheep grazing. The hedgerow contained dominant hawthorn, frequent field maple (Acer campestre) and dogwood (Cornus sanguinea), occasional oak and rarely wayfaring tree (Viburnum lantana) and buckthorn (Rhamnus cathartica).

Hedgerow H9a continued the same boundary as H9 and under the current proposal could be removed as one option. Hedgerow H9a comprised predominately hawthorn, abundant blackthorn, occasional bramble and rarely ash, elm, wayfaring tree and hazel. To the western end of H9a has formed a small patch of dense blackthorn scrub to the rear of an agricultural building.

3.2.17. Intact hedge – native species poor (J2.1.2)

An intact, native species poor hedge refers to those still suitable for stock enclosure including less than five woody species within a 30m length or with diverse herbaceous vegetation. With reference to Appendix 3 hedgerows H13 and H14 are likely to qualify, though a thorough hedgerow survey to Defra guidance15 was not undertaken.

Hedgerows H13 is a line of semi-mature trees that constitute a hedgerow by virtue of providing a field boundary and their woody component being less than 5m in width. Hedgerow H13 comprises of abundant blackthorn and hawthorn, Elm (Ulmus sp.) and blackthorn (Crataegus sp.). Hedgerow H14 was a relatively homogenous enclosure hedgerow running adjacent to an access road comprised predominately of hawthorn, with occasional blackthorn and elder.

3.2.18. Defunct hedge – native species poor (J2.2.2)
Hedgerow H1 (Figure 12) comprises of abundant blackthorn and frequent hawthorn, Elm (Ulmus sp.) and rarely oak. The main woody component is interspersed frequently with bramble (Rubus fruiticosus agg.) and dog-rose (Rosa canina). Intact hedge with trees – native species rich (J2.3.1).

Hedgerow H10b forms part of a south-west to north-west boundary to a large arable field which is being managed sympathetically with headlands retained as grassland. The main woody component of hedgerow H10b comprised abundant hawthorn, frequent elder, occasional blackthorn and rarely spindle (Euonymus europaeus). The hedgerow is occasionally interspersed with bramble and rarely hedge bindweed (Calystegia sepium). The herbaceous component, extending into the headland contains abundant nettle, hogweed and cleavers, frequent teasel (Dipsacus sp.) occasional burdock (Arctium sp.), herb Robert (Geranium robertianum), ragwort (Jacobaea vulgaris), dandelion (Taraxacum sp.), greater plantain (Plantago major), field bindweed (Convolvulus arvensis), willowherb, cow parsley (Anthriscus sylvestris), white dead nettle (Lamium album), creeping buttercup (Ranunculus repens), bristly oxtongue (Helmintotheca echioides) and rarely red campion, dock (Rumex sp.) and mallow (Malva sylvestris). The grass species Arhenatherum elatius was also noted.

3.2.19. Intact hedge with trees – native species rich (J2.3.1)
An intact, native species rich hedge with trees refers to those still suitable for stock enclosure including five or more woody species within a 30m length or with diverse herbaceous vegetation. It contains specimen trees under a different management regime to the rest of the hedgerow. With reference to Appendix 3 hedgerows H5, H6, H10, H11 and H12 are likely to qualify, though a thorough hedgerow survey to Defra guidance was not undertaken.

Hedgerow H5 forms one length of the boundary to a once divided field to the west that has been separated by virtue of connecting hedgerows to the east. The length of hedgerow shown partly in Figure 15 (also including H4) becomes progressively more managed and homogenous from south to north. The main woody component comprises abundant hawthorn and field maple, frequent ash, crab apple (Malus sylvestris) and occasional birch (Betula pendula). The hedgerow is interspersed with frequent bramble and dog rose. Specimen trees include crack willow (Salix fragilis), oak and ash. The herbaceous component included abundant cleavers and nettle and occasional colts foot (Tussilago farfara), willowherb (Epilobium sp.), red campion (Silene dioica) and the grass Dactylis glomerata.

The main woody component of hedgerow H6 (Figure 16) comprises of abundant hawthorn and blackthorn, frequent elder and field maple and rarely privet (Lugustrum vulgare) and wych elm (Ulmus glabra). The hedgerow is interspersed with frequent bramble and dog rose. Specimen trees include two pollarded ash and a black poplar (Populus nigra Betulifolia) which is particularly noteworthy (Figure 17). The hedgerow has historically been laid and is actively managed.

Hedgerows H10a and H11 form south-west to north-west boundaries to a large arable field which is being managed sympathetically (e.g H10a shown in Figure 21) with headlands retained as grassland. The main woody component of hedgerows H10a and H11 comprised abundant hawthorn, frequent blackthorn and occasional elder. The hedgerow is occasionally interspersed with bramble and rarely hedge bindweed. The herbaceous component of H10a, extending into the headland was similar to H10b. Both hedgerows contain a number of specimen trees, the most notable of which is an ash within H10a (TN14, Figure 22) which has been historically pollarded and has developed a number of veteran tree like features.

Hedgerow H12 (Figure 28) comprised abundant hawthorn and blackthorn, frequent field maple, dogwood and occasional elm. There was one further tree species which could not be identified. Bramble is interspersed occasionally. The base of the hedgerow indicates historic hedge-laying activity. Specimen trees within the hedgerow included two pollarded ash. The herbaceous component also included self-heal (Prunella vulgaris) and white clover (Trifolium repens).

3.2.20. Intact hedge with trees – native species poor (J2.3.2)
An intact, native species poor hedge with trees refers to those still suitable for stock enclosure including less than five woody species within a 30m length or with diverse herbaceous vegetation. It contains specimen trees under a different management regime to the rest of the hedgerow. With reference to Appendix 3 hedgerows H4, H7 and H8 are likely to qualify, though a thorough hedgerow survey to Defra guidance was not undertaken.

The main woody component of hedgerow H4 comprised abundant hawthorn and blackthorn, frequent field maple and occasional crab apple. Specimen trees include ash and crack willow.

Hedgerow H7 and H8 form part boundaries to sheep grazed fields. Both hedgerows are similar in species composition with the main woody component comprising dominant hawthorn and blackthorn with occasional elm. Bramble is occasionally interspersed throughout the lengths of these hedgerows. A mature ash tree which appears to have historically snapped has fresh regrowth, providing an interesting feature within hedgerow H8 (TN13, Figure 20).

3.2.21. Dry ditch (J2.6)
A number of dry ditches are present throughout the study area, which are typically associated with hedgerows (H4, H5, H10, H11). These may periodically hold water but did not evidence any appreciably different plant community than those already discussed.

3.2.22. Buildings / built up areas (J3.6)
This category includes residential gardens, roads, driveways and buildings that are typically of low ecological value or beyond the scope of the survey. The main areas are associated with farm buildings, Putlowes Cottages and the access road to them as shown in Figure 30 and Figure 31. Sections of hedgerow and tall ruderal vegetation are further associated with this latter road and discussed elsewhere.

3.3. Species

3.3.1. Amphibians (including great crested newt)

There are four recent records (between 2005 and 2013) of great crested newt within the 500m search radius which is a European protected species. Two of these records (2012 and 2013), along with two records of smooth newt (Triturus vulgaris) are associated with pond P3. A third record is near Putlowes Cottages (2013) and the fourth is associated with Berryfields Farm, approximately 450m north of the proposal’s eastern end.

3.3.1.1. HSI assessment

A habitat suitability assessment was undertaken of all ponds using the Habitat Suitability Index (HSI) score which gives an indication of the suitability of a water body to support breeding great crested newts16. A habitat suitability score of 0 indicates unsuitable habitat, 1 represents optimal habitat. The results of the assessment are given in Table 1.

Table 2 HSI assessment of ponds 1 – 3, 5 and 7

<table>
<thead>
<tr>
<th>Factor</th>
<th>Pond 1</th>
<th>Pond 2</th>
<th>Pond 3</th>
<th>Pond 5</th>
<th>Pond 7</th>
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<td>1 (SP74961619)</td>
<td>1 (SP76441603)</td>
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<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Waterfowl</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Fish</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Pond count</td>
<td>0.9 (6)</td>
<td>0.9 (6)</td>
<td>0.9 (6)</td>
<td>0.96 (7)</td>
<td>0.65 (3)</td>
</tr>
<tr>
<td>Terrestrial habitat</td>
<td>0.33 (car park/scrub)</td>
<td>0.67 (deadwood, cracks/crevices)</td>
<td>1.0 (deadwood, cracks/crevices)</td>
<td>0.67 (deadwood, cracks/crevices)</td>
<td>0.67 (deadwood, cracks/crevices)</td>
</tr>
<tr>
<td>Macrophytes</td>
<td>1.0 (80%)</td>
<td>0.4 (10%)</td>
<td>1.0 (75%)</td>
<td>0.3 (0%)</td>
<td>0.3 (0%)</td>
</tr>
<tr>
<td>HSI score:</td>
<td>0.84 (excellent)</td>
<td>0.76 (excellent)</td>
<td>0.87 (excellent)</td>
<td>0.67 (average)</td>
<td>0.59 (below average)</td>
</tr>
</tbody>
</table>

3.3.2. Badger

Four records for badger are available within the search area representing two areas in particular to the east of the Waddesdon Estate near the A41 and for the general wider area (irresolute data).


During the field survey several push-throughs and a latrine were noted at SP7530415947 along a field boundary whilst walking around the field headlands away from the direct line of the proposal. In addition, a number of mammals runs were noted across the route but could not definitively be attributed to badger, deer or other large mammals. Nonetheless, it’s highly likely that badger are commuting and foraging across the entire study area and route of the proposal. However, no setts, latrines or snuffle holes were identified in close proximity to the proposed route.

3.3.3. Bats

Within 500m of the proposed route six different bat species have been historically recorded (see Appendix 4). Table 2 below identifies the location and species of those trees that hold more than a negligible potential to support roosting bats according to the criteria set out in section 2.4. Overall, the linear habitats in close proximity to the line of the proposal are highly likely to be used for foraging and commuting.

Table 3 Trees in close proximity to the proposed route that have greater than negligible potential to support roosting bats

<table>
<thead>
<tr>
<th>TN No.</th>
<th>Grid ref.</th>
<th>Tree species</th>
<th>Features</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>TN14</td>
<td>SP7692915873</td>
<td>Fraxinus excelsior</td>
<td>Deadwood, cracks/crevices (Figure 22)</td>
<td>Low</td>
</tr>
<tr>
<td>TN19</td>
<td>SP7723815787</td>
<td>Quercus robur</td>
<td>Deadwood, cracks/crevices (Figure 24)</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

3.3.4. Birds

The complex of hedgerows, mature trees and a mix of arable and pasture land, along with several wetlands features suggest that the landscape will be used by a wider variety of species. This is somewhat indicated by the presence of Quarrenden Fields BNS which has been identified as an important area for farmland birds and which shares some similar characteristics to this landscape.

Indeed, incidental records in from the field survey highlight the potential value of the landscape for ornithology with three red-listed and two amber listed species identified. A full list of recorded species within a 500m search radius of the proposal is given in Appendix 4.

Table 4: Summary of protected and notable bird species records within 500m of the proposed cycleway (full list in Appendix 4)

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
<th>RSPB status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skylark</td>
<td>Alauda arvensis</td>
<td>Red</td>
</tr>
<tr>
<td>Linnet</td>
<td>Carduelis cannabina</td>
<td>Red</td>
</tr>
<tr>
<td>Hen harrier</td>
<td>Circus cyaneus</td>
<td>Red</td>
</tr>
<tr>
<td>Stock dove</td>
<td>Columba oenas</td>
<td>Amber</td>
</tr>
<tr>
<td>Yellowhammer</td>
<td>Emberiza citrinella</td>
<td>Red</td>
</tr>
<tr>
<td>Hobby</td>
<td>Falco Subbutea</td>
<td>Green</td>
</tr>
<tr>
<td>Swallow</td>
<td>Hirundo rustica</td>
<td>Amber</td>
</tr>
<tr>
<td>Yellow wagtail</td>
<td>Motacilla flava favissima</td>
<td>Red</td>
</tr>
<tr>
<td>European golden plover</td>
<td>Pluvialis apricaria</td>
<td>Amber</td>
</tr>
<tr>
<td>Bullfinch</td>
<td>Pyrrhula pyrrhula</td>
<td>Amber</td>
</tr>
</tbody>
</table>
Table 5: Summary of field observations of bird species within 500m of the proposed cycleway (full list in Appendix 4)

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
<th>RSPB status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodcock</td>
<td>Scolopax rusticola</td>
<td>Amber</td>
</tr>
<tr>
<td>Redwing</td>
<td>Turdus iliacus</td>
<td>Red</td>
</tr>
<tr>
<td>Fieldfare</td>
<td>Turdus pilaris</td>
<td>Red</td>
</tr>
<tr>
<td>Barn owl</td>
<td>Tyto alba</td>
<td>Amber</td>
</tr>
<tr>
<td>Lapwing</td>
<td>Vanellus vanellus</td>
<td>Red</td>
</tr>
</tbody>
</table>

Table 6: Summary of field observations of other fauna

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
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</thead>
<tbody>
<tr>
<td>Chinese water deer (x2)</td>
<td>Hydropotes inermis</td>
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<tr>
<td>Brown hare (x5)</td>
<td>Lepus europaeus</td>
</tr>
<tr>
<td>Rabbit</td>
<td>Oryctolagus cuniculus</td>
</tr>
<tr>
<td>Squirrel</td>
<td>Sciurus carolinensis</td>
</tr>
</tbody>
</table>

4. Recommendations

This section outlines the key recommendations as a result of the Preliminary Ecological Appraisal desk and field study components. The following recommendations are made with respect to protected species legislation e.g. bats, great crested newt and the National Planning Policy Framework in seeking biodiversity net gain. Potentially, there are clear opportunities to ensure biodiversity net-gain which could also provide a more attractive and inviting cycleway. The opportunities listed below are not an exhaustive list, and their selection will depend on the degree of impact which is not yet confirmed.

4.1. Designated sites of nature conservation value

4.1.1. Statutory sites

No statutory sites will be impacted by the proposal.

4.1.2. Non-statutory sites

A small proportion of Waddesdon Park BNS will be directly impacted. However, the features key to this designation e.g. parkland and lichens, will not minimally impacted. Overall, the proposal can contribute to these features if sensitively landscaped within the Waddesdon Estate and placed under an appropriate management regime. In any event, as a BNS, the site is required to be surveyed against Local Wildlife Site criteria which may provide other suitable management recommendations, but is outside of this survey scope.

4.2. Habitats

The habitats identified that are of moderate to high ecological value are discussed below along with recommended mitigation and / or compensation as required. The measures identified can be used to realise biodiversity net-gain in line with the National Planning Policy Framework.

4.2.1. Semi-natural and plantation broadleaved woodland

Both the semi-natural and plantation woodlands are ecologically important in their own right or as connecting features across the landscape.

Recommendation 1 – Tree removal should be kept to a minimal. Where trees are to be removed, these should be replaced as an extension to the impacted woodland on a ratio of approximately two gained for 1 lost.

Recommendation 2 – Every effort should be made to maintain ecological connectivity. This may be achieved by removing as few trees as possible and plotting the route where least impact shall be had to linear features e.g. tree lines.

4.2.2. Semi-improved neutral grassland (with scattered trees)

The current floral diversity within the semi-improved neutral grassland (TN5) and field headlands is low. However, the timing of the survey following a recent cut and being late in the field season may...
underestimate the current diversity. Nonetheless, the proposal represents an opportunity to significantly improve the diversity of the sward in the area marked TNS.

**Recommendation 3** – Employ a sympathetic grassland management regime to the area of semi-improved neutral grassland (TNS) in order to improve the grassland diversity. For guidance see Flora Locale (http://www.floralocale.org/HomePage). An appropriate cutting regime will depend upon the desired end result and the species present. For example:

- Springtime wildflower meadow - Cut from mid-June onwards after spring flowering.
- Summer wildflower meadow - Cut until mid-May then leave to flower
- Full season wildflower meadow - One cut in autumn (September).

**4.2.3. Eutrophic standing water**

Most ponds within the study area i.e. Ponds P3 – P7 are suffering from successional processes; ponds P4 and P6 were dry at the time of survey. However, the presence of great crested newt in the area (see 3.2.11 and 4.3.1) makes this a valuable pond network. The restoration or creation of ponds would accord with local Biodiversity Action Plan targets.

**Recommendation 4** – Ponds 4 and 6 are restored through a sensitive restoration, thereby opening up the canopy cover and dredging. For some guidance on dredging see: http://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Silted-up-ponds-and-dredging.pdf

**Recommendation 5** – Pond 3 is subject to a staggered dredge pending the results of further survey identified below in 4.3.1. A staggered dredge would remove silt and sediment from the pond over a period of several years and will ensure that some of the pond will always remain undisturbed thus allowing freshwater life to persist and recover more rapidly.

**Recommendation 6** – Pond 5 is subject to some canopy removal pending further survey identified below in 4.3.1 in order to allow sunlight to penetrate to the substrate and encourage aquatic vegetation to establish, thus improving its suitability to a range of freshwater life.

**4.2.4. Running water**

Of the two lengths of running water that are crossed by the proposal the River Thame tributary holds 4.2.4.

**Recommendation 7** - Stored materials (if required) are located at least 10m away from the water edge and any potentially harmful materials or contaminants are responsibly controlled during works.

**Recommendation 8** – Buffer zones are reinstated either side of the stream to allow marginal vegetation to develop and reduce the impact of cattle poaching.

**4.2.5. Hedgerows and hedgerow trees**

The hedgerows and the trees they contain collectively represent the most ecologically valuable features across the study site. They are a key foraging resource for a range of taxa from birds, bats to invertebrates – particularly where trees contain deadwood. It is highly likely that a number of small mammals will also use the hedgerows for foraging, commuting and shelter. However, as discussed in sections 3.2.16 to 3.2.20 a number of the hedgerows are relatively species poor or defunct (gappy).

**Recommendation 9** – Any hedgerow removal must be subjected to an assessment under the Hedgerow Regulations 1997. Any length of hedgerow removed must be replaced by infilling defunct hedgerows and/or providing an alternative ecologically beneficial habitat e.g. tree planting or pond restoration / creation.

**Recommendation 10** – Gaps in hedgerows are infilled with native species, representative of the local species mix and are entered into a sympathetic management regime in order to improve their density and vigour.

**Recommendation 11** – Any newly planted hedgerow should comprise of a native species rich composition. For example newly planted hedgerow could comprise hawthorn (Crataegus spp) 25%, blackthorn (Prunus spinosa) 25%, field maple (Acer campestre) 10%, hazel (Corylus avellana) 10%, spindle (Euonymus europaeus) 10%, guelder rose (Viburnum opulus) 10%, dog rose (Rosa canina) 5%, field rose (Rosa arvensis) 5%

**4.3. Protected and notable species**

**4.3.1. Amphibians (including great crested newt)**

Great crested newt and their breeding sites or resting places are protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and Schedule 5 of the Wildlife and Countryside Act 1981.

**Recommendation 12** – Prior to planning (and therefore commencement of development), Ponds 1, 2, 3 and 5 will require survey for great crested newt to ascertain the status of the populations that are likely present and in order to inform suitable avoidance measures and/or licensing agreements. Great crested newt surveys are seasonally constrained. The appropriate period to carry out presence/absence surveys is weather dependent but generally considered being between 1st February and 31st May.

**Recommendation 13** – As per recommendations 4, 5 and 6

**4.3.2. Badger**

Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett.
Recommendation 14 – During the construction phase, measures should be installed in order to protect badgers from being trapped overnight in open excavations and/or pipe and culverts. Appropriate measures may comprise either timber planks or earth ramps in order to allow badgers to egress from excavations greater than 0.5m depth. Alternatively all excavations should be backfilled before nightfall.

4.3.3. Bats

All species of bat and their roosts are protected under The Conservation of Habitats and Species Regulations 2010 which make it an offence to undertake activities that may kill, injure or disturb an individual or damage or destroy a breeding site or resting place of that individual.

Recommendation 15 - Where trees with bat potential are to be removed a suitably qualified ecologist should be appointed to assess their potential to support bat roosts following best practice guidance18 and where required, undertake additional activity surveys. During the walkover, only two trees were noted as having potential for roosting bats; however this was not an exhaustive survey. Once trees deemed necessary for removal in order to facilitate development have been identified a further assessment of their potential to support roosting bats should be undertaken by suitably qualified bat ecologist. Similarly, should the route of the proposal change then any newly potentially impacted trees should be freshly assessed.

Recommendation 16 – No new artificial lighting should be introduced. However, if this is unavoidable new or relocated lighting associated with the cycleway should avoid unnecessary overspill onto surrounding vegetation e.g. trees, hedgerows as these are highly likely to be used by foraging and/or commuting bats as well as other nocturnal invertebrates. For guidance see: http://www.bats.org.uk/pages/bats_and_lighting.html

4.3.4. Birds

All species of wild birds, their nests and eggs are protected under Section 1 of The Wildlife and Countryside Act 1981 (as amended) which makes it an offence to undertake activities that may kill, injure, capture or disturb an individual or damage or destroy any eggs, a breeding site or resting place of that individual.

Recommendation 17 - Vegetation should not be removed during the bird nesting season. This is weather dependant but generally extends from 1st March to 31st August (inclusive). If this is not possible, a qualified ecologist shall check the areas concerned immediately prior to vegetation removal to ensure that no nesting or nest-building birds are present. If any nesting or nest-building birds are present, no vegetation shall be removed until the fledglings have left the nest.

4.3.5. Invertebrates

Over 400 species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981 and/or are listed as Section 41 Priority species protected through biodiversity policy. Schedule 5 invertebrates and 541 priority invertebrate species are the protected and priority invertebrates that need to be taken into account in planning decisions.

The Buckinghamshire and Milton Keynes Natural Environment Partnership have recently endorsed the National Pollinator Strategy19. The cycleway provides an excellent opportunity to improve the prospects for invertebrates, specifically pollinators and could help meet one of the five key areas outlined within the strategy is supporting pollinators on farmland. Wildflower flower meadow strips could help to meet this aim (e.g. image below).

Recommendation 18 – The feasibility study indicates a tree-lined avenue for the length of the proposal. For biodiversity, it would be much more desirable if either a) the tree-density was much reduced allowing for greater light penetration, b) a continuous pollinator trail was provided parallel to the cycleway through the provision of a strip of wildflower meadow up to 5m in width.

5. Conclusion

The proposal constitutes a low impact scheme that if sympathetically designed could contribute significantly to local biodiversity by increasing habitat complexity and improving habitats already...


present. A range of recommendations have been made to this end, a number of which are likely to be required prior to determination of planning (12, 15), under the NERC Act (2006) local authority biodiversity ‘duty of care’ (see 1.3.1) and a number which will need to be considered in order to comply with the National Planning Policy Framework and achieving net gains for biodiversity. Moreover, an appropriate package of habitat creation and restoration through long term management will improve the area for wildlife and users of the proposed cycleway alike.

Subject to final design and the likely need to undertake surveys for European protected species (great crested newt) there are no significant ecological constraints to the proposal.

Appendix 1: Site photos

Figure 1: Pond (P1) adjacent to Waddesdon House car parking

Figure 2: Pond (P2) adjacent to Waddesdon House car parking
Figure 3: Semi-natural broadleaved woodland and footpath near Wormstone Farm (TN1)

Figure 4: Running water within ditch within woodland near Wormstone Farm (upstream, TN2)

Figure 5: Running water within ditch within woodland near Wormstone Farm (downstream, TN2)

Figure 6: Pond (P3) northern section from access road
Figure 7: Pond (P3) northern section showing open water

Figure 8: Pond (P3) southern section from access road

Figure 9: Semi-improved neutral grassland with scattered oak trees (TN5)

Figure 10: Recently felled broadleaved woodland (TN4b)
Figure 11: View east from TN6 showing line of proposal and typical landscape

Figure 12: Hedgerow H1

Figure 13: View of plantation broadleaved woodland (TN8)

Figure 14: View across arable field along line of Akeman Street (TN9)
Figure 15: View north along hedgerows H5 to H4

Figure 16: Hedgerow H6 (TN10)

Figure 17: Black poplar at TN11 (Populus nigra ssp. Betulifolia)

Figure 18: Pond P5
Figure 19: View east from TN12

Figure 20: Ash (Fraxinus excelsior) TN13 located within hedgerow H8

Figure 21: Hedgerow H10a in rotational management TN15

Figure 22: Ash specimen with veteran tree features within hedgerow H10a (TN14)
Figure 23: Hedgerow H10a showing notable ash tree (TN14)

Figure 24: Plantation broadleaved woodland (TN18) showing mature oak with bat potential (TN19)

Figure 25: Wet ditch within plantation broadleaved woodland (TN17)

Figure 26: Interior of plantation broadleaved woodland (TN18)
Figure 27: View of eastern aspect of plantation broadleaved woodland (TN18)

Figure 28: Hedgerow H12 showing willow (TN21)

Figure 29: Example pollarded crack willow (*Salix fragilis*) within hedgerow H12 (TN21)

Figure 30: View east along Putlowes Cottages access road
Figure 31: View west along Putlowes Cottages access road (TN22)

Figure 32: Road verge to A41 with tree line (TN23)

Figure 33: River Thame tributary, culvert beneath railway (TN24)

Figure 34: River Thame tributary, south of A41 (TN25)
Figure 35: View west from TN26 showing River Thame tributary across pasture

Figure 36: View along south railway embankment showing dense / continuous scrub (TN27)
Appendix 2: Annotated Phase 1 habitat map with target notes (TN#)
Appendix 3: Hedgerow map
Appendix 4: Records received from the Buckinghamshire and Milton Keynes Environmental Records Centre (BMERC)

Buckinghamshire & Milton Keynes Environmental Records Centre

County Hall • Walton Street • Aylesbury • HP20 1U
Tel 01296 382431  Fax 01296 387156
http://www.buckinghamshirepartnership.co.uk/partnership/BucksMKERC/bmerc.page

Ian Thornhill
Buckinghamshire County Council
County Hall
Walton Street
Aylesbury
HP20 1UA

Your ref EcoS_005
My ref 15-271
Date 27 October 2015
Contact Claudia Bernardini
Tel 01296 382431
Email c.bernardini@buckscc.gov.uk

Dear Ian Thornhill,

Re: EcoS_005 - National Cycleway Waddesdon to Aylesbury Vale Parkway

Thank you for your letter of 20 October 2015 requesting information on sites and species within 500m of the site above. The information we have is summarised below. A map is provided below showing the locations of sites within the search area, and the relevant species records are detailed below. Please see the ‘Definitions’ section below for an explanation of the terms used to describe sites and species in this report.

STATUTORY SITES

We have no indication of any statutorily designated sites within the search area. This includes Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), National Nature Reserve and Local Nature Reserves (LNR).

NON-STATUTORY SITES

We have no indication of any Local Wildlife Sites (LWS) within the search area.

We have no indication of any Local Geological Sites (LGS) (formerly known as Locally Important Geological and Geomorphological Site (RIGS)) within the search area.

The search area includes the following Biological Notification Sites (BNS):

<table>
<thead>
<tr>
<th>Site Code</th>
<th>Site Code</th>
<th>Broad habitat</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>71Y01</td>
<td>Quarrendon Fields</td>
<td>Farmland either side of Aylesbury to Quainton road, 70% grassland, approx 50% permanent pasture. BTO surveys between 1974 and 1977. Important for wintering and passage birds. Large numbers of Golden Plover, Lapwing, Fieldfare and Redwing in winter.</td>
<td></td>
</tr>
<tr>
<td>7103</td>
<td>Waddesdon Park</td>
<td>Parkland</td>
<td>Once about 56q km parkland with avenues, not ancient; the 65ha slopes around the Victorian Manor are still parkland, the rest is farmed. 38 species of lichen. (Bowen 1988).</td>
</tr>
</tbody>
</table>

PROTECTED AND NOTABLE SPECIES

Records of protected and/or notable species within the search area are shown in the table below.

The area contains additional records of Black Poplar from the Aylesbury Vale survey of this Buckinghamshire Biodiversity Action Plan species; the locations are shown on the species map below.

According to our records, The Buckinghamshire Badger Group (www.bucks-badgers.org.uk) does not have records for this area. Contact information; Bob Simpson, the Buckinghamshire Badger Group Recorder, at 27 Waine Close, Buckingham, MK18 1FF.

According to our records, the area does not overlap an area identified (by BBOWT, the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust) as a Key Area for Water Voles. For further details please contact BBOWT, 01865 775476, web: www.bbowt.org.uk

Please do not hesitate to contact me if you have any questions arising from this report.

Yours sincerely,

Claudia Bernardini
Environmental Records Officer

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- BMERC can only provide information based on the data held by us. In particular, the absence of records for a species does not necessarily indicate that the species itself is absent, merely that we have not received records for it.

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- The data supplied in this report must not be added to a permanent database without prior permission from BMERC.
- The data held by BMERC is updated regularly and will become out-of-date. If you intend to use this data after a period of six months please contact us to confirm that we have no new records.
- Protected species records should be kept out of the public domain.
Proposals for a Waddesdon Parkway Avenue from Waddesdon to Aylesbury Parkway Station following the course of Akeman Street

Local, Non-statutory sites within 500m to National Cycleway Waddesdon to Aylesbury Vale Parkway

Legend
- EcoS_005 buffer
- Biological Notification Sites

Scale: 1:21,830

Date created 27/10/2015

Please note that the layers held by the Environmental Records Centre are compiled from data that has been received from a variety of sources, including volunteers and professionals.
### Protected and notable species records

**Taxon column:**
- * = species recorded as not native (e.g. introduced plants or escaped birds)
- # (against badger Meles meles) = record of sett

**Table sorted by group and taxon**

Only includes records since 1990; contact BMERC if you need records from before this.

Some records may have further details (e.g. information on quantity, sex and stage), contact BMERC if you need this additional detail.

Data supplied by BMERC may include data from the following organisations: Botanical Society of Britain and Ireland; Bucks Amphibian and Reptile Group; Bucks Bird Club; some National Recording Schemes; plus many individual recorders.

Data provided by BMERC (01296 382431) on: 27 October 2015

<table>
<thead>
<tr>
<th>group</th>
<th>species</th>
<th>English name</th>
<th>European legislation</th>
<th>UK legislation</th>
<th>Species of Principal Importance</th>
<th>Rare / Source</th>
<th>local status</th>
<th>site</th>
<th>grid ref</th>
<th>precision</th>
<th>latest record</th>
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<tr>
<td>Amphibians and reptiles</td>
<td>Triturus cristatus</td>
<td>Great Crested Newt</td>
<td>EPS_HabReg2010-Sch2 &amp; HalDe1992-Sch</td>
<td>WACA-Sch5_sect9</td>
<td>England_NERC_Sit &amp; UKBAP-2007</td>
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<td>SP783211592</td>
<td>1</td>
<td>2005</td>
<td></td>
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<td>Great Crested Newt</td>
<td>EPS_HabReg2010-Sch2 &amp; HalDe1992-Sch</td>
<td>WACA-Sch5_sect9</td>
<td>England_NERC_Sit &amp; UKBAP-2007</td>
<td>Fleet Marston, near Putlowes Cottages</td>
<td>SP780155</td>
<td>100</td>
<td>2013</td>
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<td>EPS_HabReg2010-Sch2 &amp; HalDe1992-Sch</td>
<td>WACA-Sch5_sect9</td>
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<td>SP74966169</td>
<td>1</td>
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<td>Amphibians and reptiles</td>
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Proposals for a Waddesdon Parkway Avenue from Waddesdon to Aylesbury Parkway Station following the course of Akeman Street | Page 47

The Buckinghamshire and Milton Keynes Environmental Records Centre is a centre provided by Buckinghamshire County Council and Milton Keynes Council

Definitions

Sites of Importance for wildlife and geology in Buckinghamshire and Milton Keynes

The following statutory designations are used in Buckinghamshire and Milton Keynes:

- **Special Areas of Conservation (SAC)**
- **National Nature Reserves (NNR)**
- **Local Nature Reserves (LNR)**

**Special Areas of Conservation** are sites of international nature conservation importance and are designated under the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive).

**National Nature Reserves** are sites of national importance and are declared under section 19 of the National Parks and Access to the Countryside Act 1949 or section 35 of the Wildlife and Countryside Act 1981.

**Local Nature Reserves** are sites of local importance and are declared under section 21 of the National Parks and Access to the Countryside Act 1949.

**Sites of Special Scientific Interest** (SSSI)

Sites of Special Scientific Interest are sites of national nature conservation or geological importance and are declared under section 28 of the Wildlife and Countryside Act 1981.

**Local Geological Sites** (LGS)

Local Geological Sites are local non-statutory sites that recognise important earth science and landscape features. The Buckinghamshire & Milton Keynes Natural Environment Records Centre (BMKNERC) are a statutory consultant to the Buckinghamshire Earth Heritage Group, in consultation with local authorities, designates the sites. They were previously known as Regionally Important Geological and Geomorphological Sites (RIGS).

**Buckinghamshire & Milton Keynes Notable Species List**

This column includes species listed in Regulations 39 (European protected animal species) and 42 (European protected plant species) of the Conservation (Natural Habitats &c.) (Amendment) Regulations 2007 which have a variety of consequences for the protection of European Protected Species, including the requirement for some projects that were previously allowed to be carried out, which previously covered acts that were the incidental result of an otherwise lawful activity and which could not reasonably have been avoided. For more details see: http://www.natureengland.org.uk/conservation/wildlife-management/licensing/habspregs/remotewaysguidance.

2. W+C Act

This column includes species listed in The Wildlife & Countryside Act 1981 (and later amendments), plus Badger (see below). The Wildlife and Countryside Act consolidates and amends existing national legislation to implement the European Communities Directives on the conservation of natural habitats in the EU Birds Directive in Great Britain. Various amendments have been made to the Act, e.g. in the Countryside and Rights of Way (CROW) Act 2000.

- Schedule 1 (protected birds) – It an offence (with exception to certain species) to intentionally kill, injure, or take any wild bird or the eggs or nests of species listed in Part 1, Part 2 lists birds protected during the closed season.
- Schedule 5 (protection of animals) – It an offence to intentionally kill, injure, or take, or attempt to kill, injure, or take, a protected mammal or bird or the eggs or nests of a protected bird. The intentional or reckless killing, disturbing or selling, of animals listed in Schedule 5 is prohibited, along with the damaging or disturbing of the places used for their shelter or protection. Protection of some species is limited to certain sections:
  - Section 9(1) – Limited to intentional killing, injury or taking.
  - Section 9(2) – Limited to processing and controlling.
  - Section 9(4a) – Limited to damaging, destroying or obstructing access to any structure or place used by the animal for shelter or protection.
- Schedule 8 – Limited to selling, offering for sale, possessing or transporting for sale or advertising for sale of any live or dead animal, part of or derived from. (Not included in list)

On 21 August 2007 an amendment to the Habitats Directive came into force. The Conservation (Natural Habitats etc.) (Amendment) Regulations 2007 have a variety of consequences for the protection of European Protected Species, including the requirement for some projects that were previously allowed to be carried out, which previously covered acts that were the incidental result of an otherwise lawful activity and which could not reasonably have been avoided. For more details see: http://www.natureengland.org.uk/conservation/wildlife-management/licensing/habspregs/remotewaysguidance.

We recommend that you refer to your local Planning Authority for advice on the protection of protected species that may be affected by your development.

The Buckinghamshire and Milton Keynes Notable Species List has been compiled in response to data requests from ecological consultants and developers. Although records of protected species are most commonly requested, national and local BAP species records and records of other notable species are often required.

**Buckinghamshire & Milton Keynes Notable Species List**

Records held come from myriad sources including professional consultants’ surveys, volunteer recorders and recording groups, national recording schemes and members of the public. In particular, we hold records from Bucks recorders for Plants, Moths and Mammals and from BirdsAARG and Bucks Bird Club. We also receive records from North Bucks Bat Group although they may hold more up-to-date records for an area.

The Buckinghamshire and Milton Keynes Notable Species List has been compiled in response to data requests from ecological consultants and developers. Although records of protected species are most commonly requested, national and local BAP species records and records of other notable species are often required.

As part of our standard data search we now include records of species defined by the following legislation and criteria.

1. European legislation

This column in our reports includes species listed in Regulations 39 (European protected animal species) and 42 (European protected plant species) of The Conservation (Natural Habitats, &c.) Regulations 1994. These provide protection for key species and habitats and are the UK’s implementation of the EC Habitats Directive and UK Law. The Habitats Directive requires the formation of a network of protected areas and the direct protection of specific species. It is an offence to deliberately capture, kill or disturb a wild bird or any part of or derived from. (Not included in list)

In addition to IUCN criteria, there are older Red Data Book lists use international criteria developed by the World Conservation Union (IUCN), and include these categories:

- **Critically endangered (CR)**
- **Endangered (EN)**
- **Vulnerable (VU)**
- **Near threatened (NT)**
- **Data deficient (DD)**

The CR, EN and VU categories are considered to be threatened categories. Near threatened species are close to qualifying for one of these categories. Data deficient is not a threatened category, but indicates a need for more information in order to determine the appropriate category.

For birds, the following categories apply, taken from Birds of Conservation Concern 2003–2007 (RSPB):

- **Least Concern (LC)**
- **Near Threatened (NT)**
- **Vulnerable (VU)**
- **Endangered (EN)**
- **Critically Endangered (CR)**
- **Extinct (EX)**
- **Extinct in the wild (EW)**

For birds, the following categories apply, taken from Birds of Conservation Concern 2003–2007 (RSPB):

- **Least Concern (LC)**
- **Near Threatened (NT)**
- **Vulnerable (VU)**
- **Endangered (EN)**
- **Critically Endangered (CR)**
- **Extinct (EX)**
- **Extinct in the wild (EW)**

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- **Least Concern (LC)**
- **Near Threatened (NT)**
- **Vulnerable (VU)**
- **Endangered (EN)**
- **Critically Endangered (CR)**
- **Extinct (EX)**
- **Extinct in the wild (EW)**
Nationally rare plants
This column uses distribution data from the Botanical Society of the British Isles to show those plants that have restricted national distributions, i.e. equivalent to the old Red Data Book categories.

5. Local status
This column shows the local statuses that have been applied to plants, butterflies and moths. For the plants the source is the BSBI County Rare Plant list for Bucks, compiled by Roy Maycock in 2007 (NB this is a substantial change from the previous county rare/scarc plant list of the 1980s). The categories are:
- County Rare: generally confined to three or fewer tetrads (2km × 2km squares) in the county
- County Scarce: generally confined to between four and ten tetrads in the county
For butterflies and moths the source is Butterfly Conservation’s Regional Action Plan for the Thames Region (Clarke and Bourn 2000). Species are given a High, Medium or Low priority based on rarity, decline and threat (NB that the “Low Priority” category does include species of conservation importance, but simply those which are considered a lower priority than the others).

• Bird records
Under the EC Birds Directive and the Wildlife and Countryside Act it is an offence to intentionally kill, injure, or take any wild bird or their eggs or nests (with the exception of certain species). Records of wild birds in general are not included in BMERC reports unless they are of species falling into one of the other categories listed here.

A full Notable Species list is available on request.

International and European Obligations
In the UK, species receiving protection under international legislation and agreements are protected through the Wildlife and Countryside Act, so are not shown separately in the BMERC notable species lists. For reference, the relevant categories are shown below:

• Bern Convention on the Conservation of European Wildlife and Natural Habitats
The Bern Convention aims to ensure the conservation of wild flora and fauna species and their habitats.
- Appendix 1 (strictly protected flora) – Plants for which contracting parties will prohibit deliberate picking, collecting, cutting or uprooting.
- Appendix 2 (strictly protected fauna) – Animals for which contracting parties will prohibit deliberate capture, possession, killing, damage to or destruction of breeding or resting sites, disturbance or destruction or taking of eggs.
- Appendix 3 (protected fauna) – Animals for which contracting parties will include closed seasons and regulate their sale, keeping for sale, transport for sale or offering for sale of live and dead wild animals. (Not included in Notable Species List)

• Bonn Convention on Migratory Species
The Bonn Convention aims to conserve terrestrial, marine and avian migratory species throughout their range.
- Appendix 1 (migratory species threatened with extinction) – Species for which contracting parties will strictly protect and endeavour to conserve or restore the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them.
- Appendix 2 (migratory species that need or would benefit from international co-operation) – Species for which contracting parties will be encouraged to conclude global or regional agreements for the conservation and management of individual species or, more often, of a group of species. (Not included in Notable Species List)

• The EC Council Directive on the Conservation of Wild Birds
The Birds Directive provides a framework for the conservation and management of all wild birds in Europe. As well as designating important sites for birds as Special Protection Areas, birds are generally protected from deliberate killing or capture and destruction of or damage to their nests or eggs, and deliberate disturbance. Allowances are made for game birds.