Waddesdon Greenway: Link to School Lane

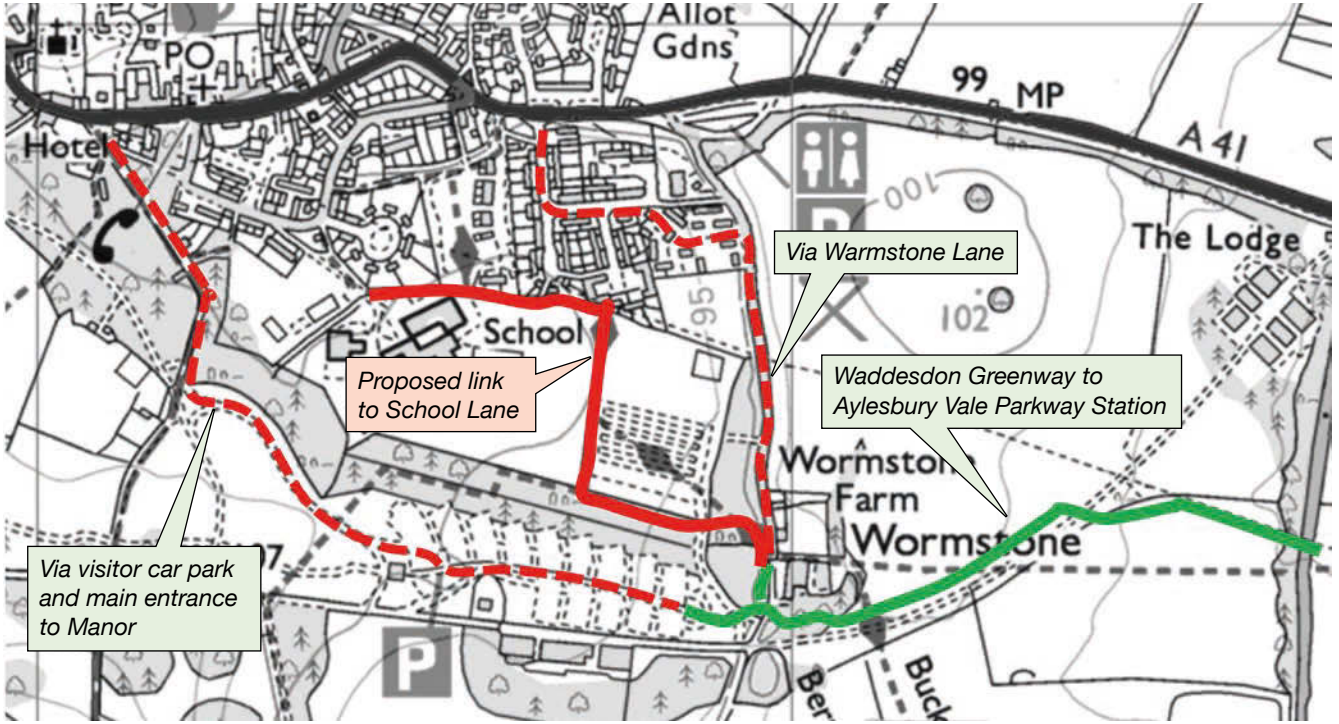
Visitors to the Waddesdon Greenway under construction

Greenways & Cycleroutes
February 2023

Proposal for extending the Waddesdon Greenway to School Lane to provide a connection for the Village and the School

1 Summary of proposed link to School Lane, Waddesdon

The Waddesdon Greenway from Aylesbury Vale Parkway Station was opened in July 2018 and has proved to be very popular with local people who have made over 150,000 trips along it in the last year. In 2020 the route was extended through the Roman Park Community area just south of the station, then in August 2020 the Haydon Hill link opened across the River Thame. This connects to the existing cycling routes to the Town Centre which have been uprated and redesigned as the Platinum Way. Then most recently a new path has been constructed linking Berryfields with Buckingham Park, linking yet more communities to the Waddesdon Greenway.



Proposed Waddesdon School Link compared with existing links to Waddesdon

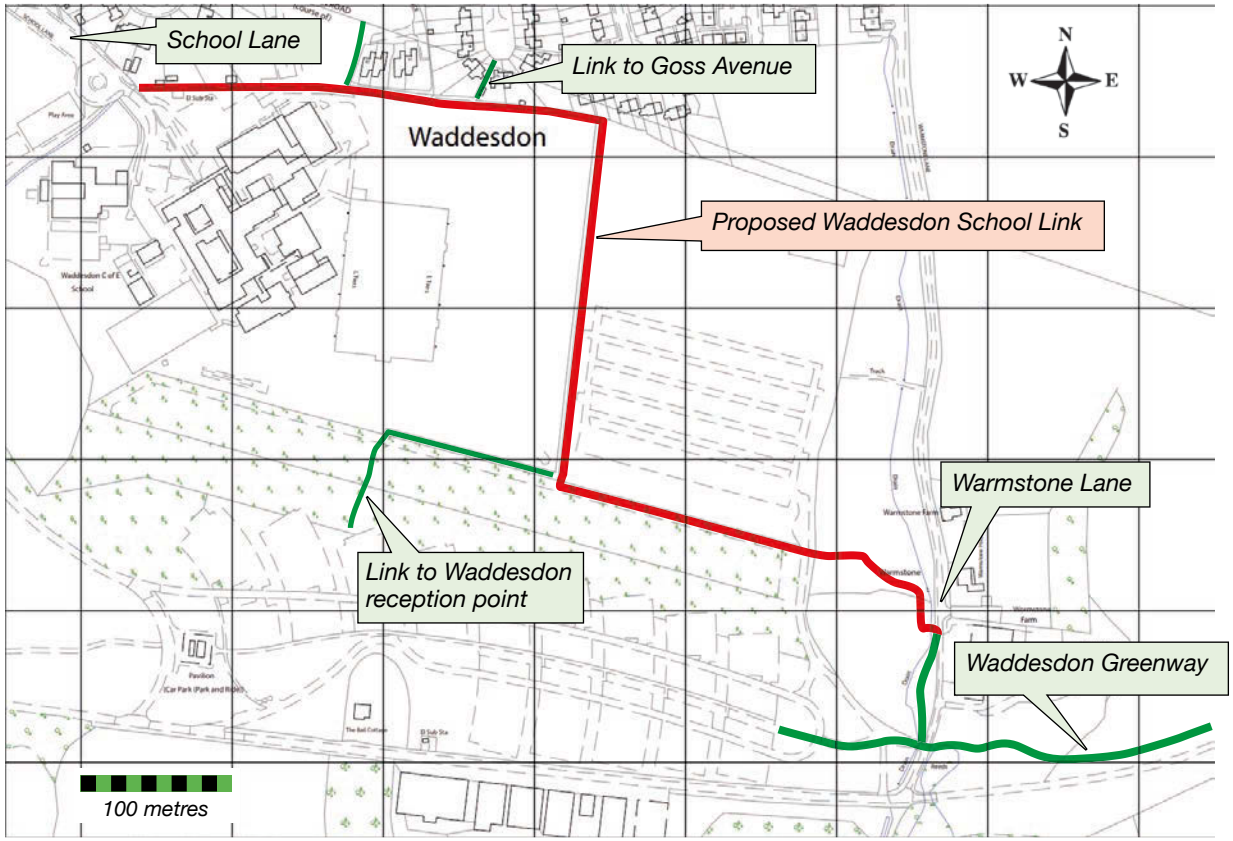
Haydon Hill Bridge

Buckingham Park Path

2 General Description of proposed School Link – 800m long

This path will be similar in nature to the existing Waddesdon Greenway. It will be 3m wide, except at pinch points, finished with a sealed surface and set in a generous landscape of trees and hedges. It links with and connects to a number of existing paths, including of course the Waddesdon Greenway. The path will not be lit but the way will be illuminated with a string of centrally placed photovoltaic lights. The path will be signed at each end.

Along the north side of the school the new path will create a much more spacious atmosphere than the current restricted route. On the east side of the school, advantage will be taken of the wider space to plant a community orchard. At the south of the car park the path moves to an alignment behind the hedge to follow a corridor along the edge of the pine wood. Finally, the new path will link through Wormstone Wood to join the Waddesdon Greenway.



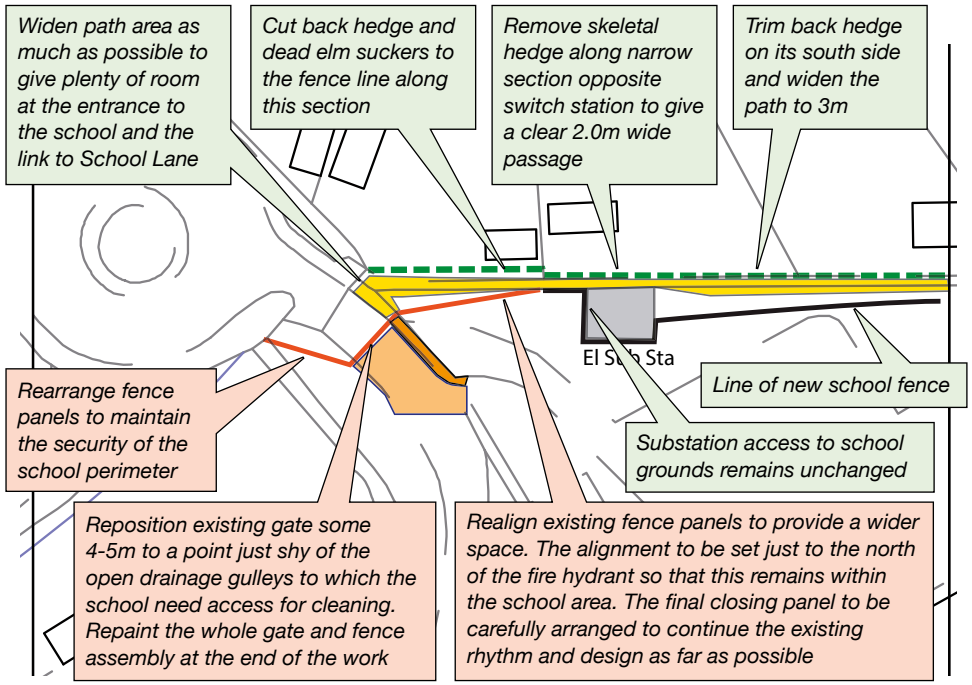
Location plan of proposed Waddesdon School Link

3 Details of the proposed route

The route is described with maps, notes, sketches, and photographs. The notes are arranged on the page opposite the maps, and the document is designed to be read as a double-sided work.

1 School Lane leads to the centre of Waddesdon.

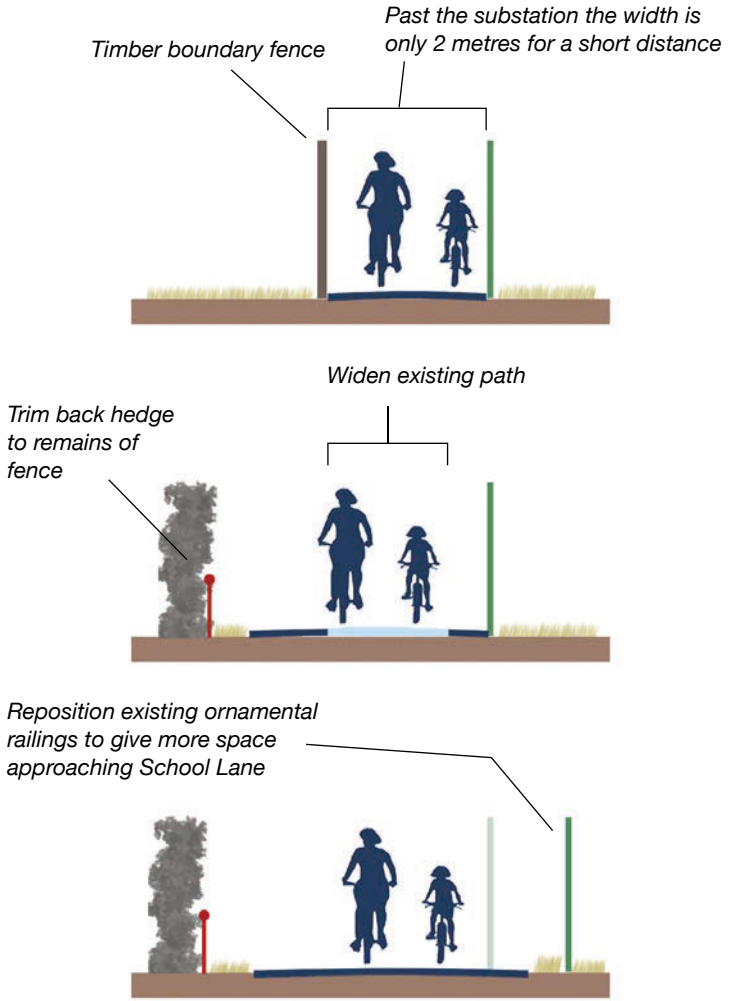
2 The arrangement of the egress of the path needs to be carefully detailed as it comes close to the school entrance which is busy at peak times. Most of the path users will be coming to school from nearby residential areas. To create more space in this area the School has agreed that the project moves the existing school gates back by some 4m and that the existing ornamental fencing is also repositioned so as to expand this constricted area. The proposed arrangement shown on the plan is somewhat governed by the services in the ground.



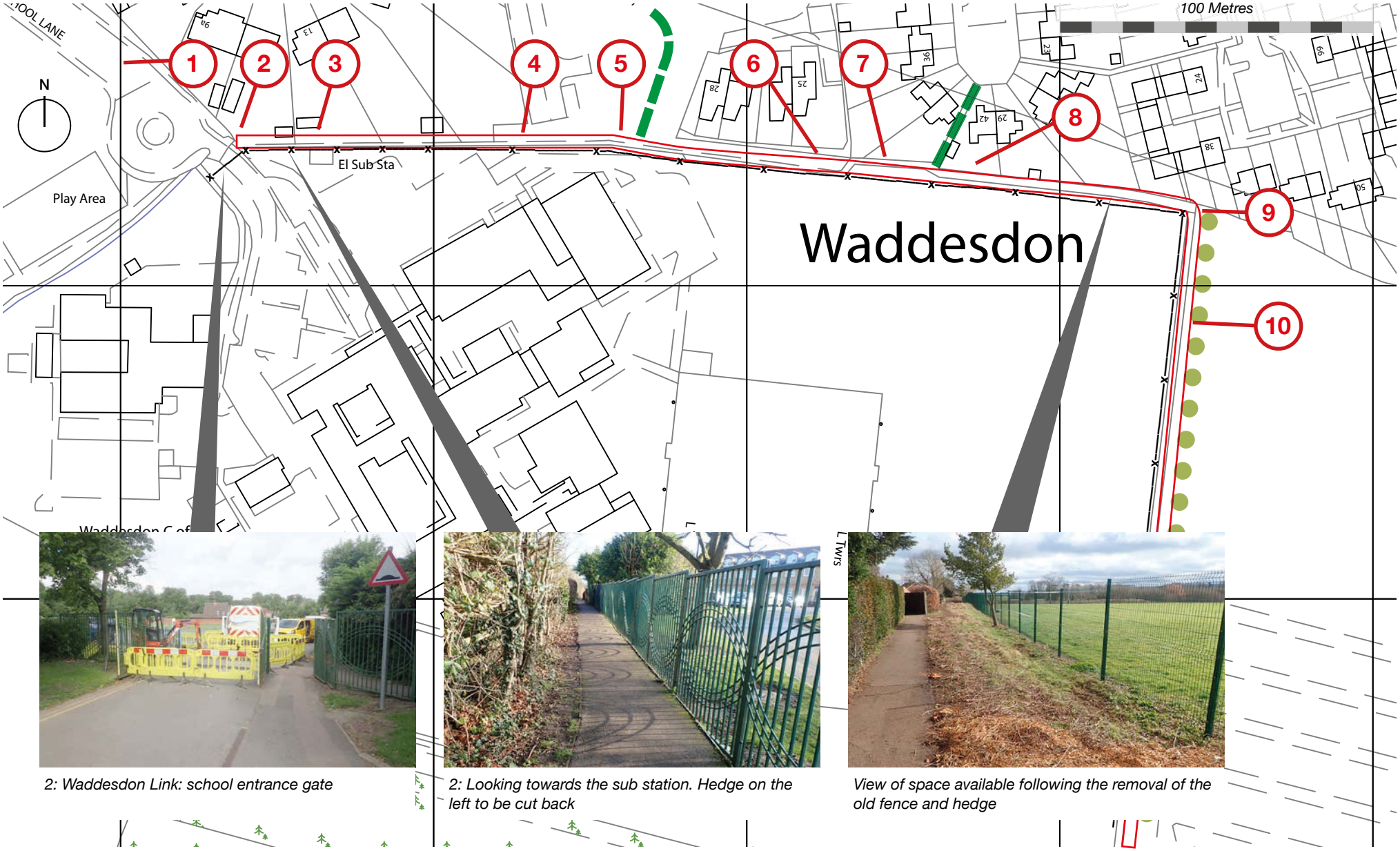
Detail plan at the approach to School Lane showing revised arrangement of school gates and fencing

3 Garden plots have been extended hard up to the path in varying degree – the worst leaving just 2.0m between fences. Short of relocating the fence back to its original line the path will have a short narrow section past the substation where there is no scope for widening into the school lands. However, if the thin hedge is removed there will be adequate space at this point as visibility is good.

Three sections between substation and School Lane



Map 1 of 2: Details of the proposed link to School Lane, Waddesdon



2: Waddesdon Link: school entrance gate

2: Looking towards the sub station. Hedge on the left to be cut back

View of space available following the removal of the old fence and hedge

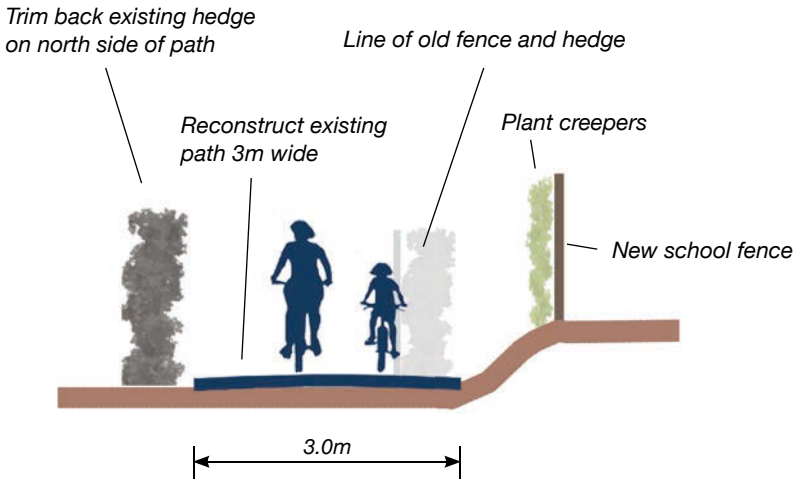
Map 1 of 2: Details of the proposed link to School Lane, Waddesdon

4 The School has recently installed a new fence all along its northern boundary along a line to provide a greater width for the path. The old hedge has been removed as well as the remains of the original fence, and new planting will be put along the new fence.

5 The new Golden Mede development has put detailed landscaping in this area which will allow the path to have a more open aspect.

6 The remains of the old hedge backing onto the new housing allow for a slightly wider area here.

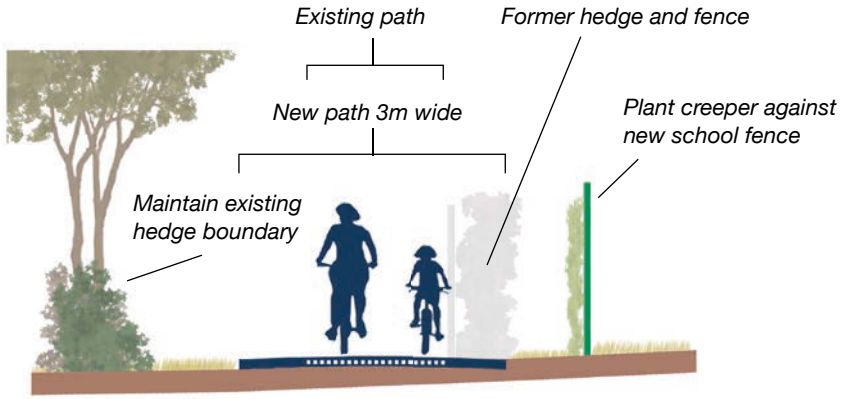
Sketch through new path opposite School car park



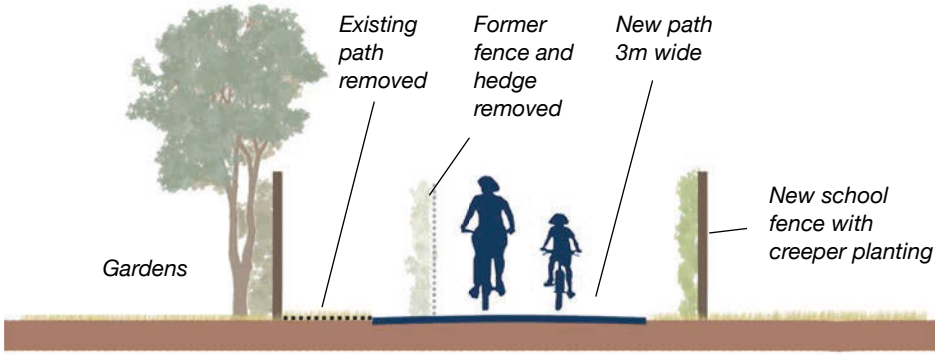
7 The last section of the existing 1.5m wide tarmac path doglegs back to link through to Goss Avenue. The resulting kink in the school boundary made something of an unusable space. The new school fence has been set back which has considerably enhanced the space for the path and will improve its security with a through view along its length.

8 This section of the old path was narrowed even further by an attractive beech hedge planted at the end of Sharps Close The set back of the new school fence allows this to remain.

Sketch through new path opposite new housing



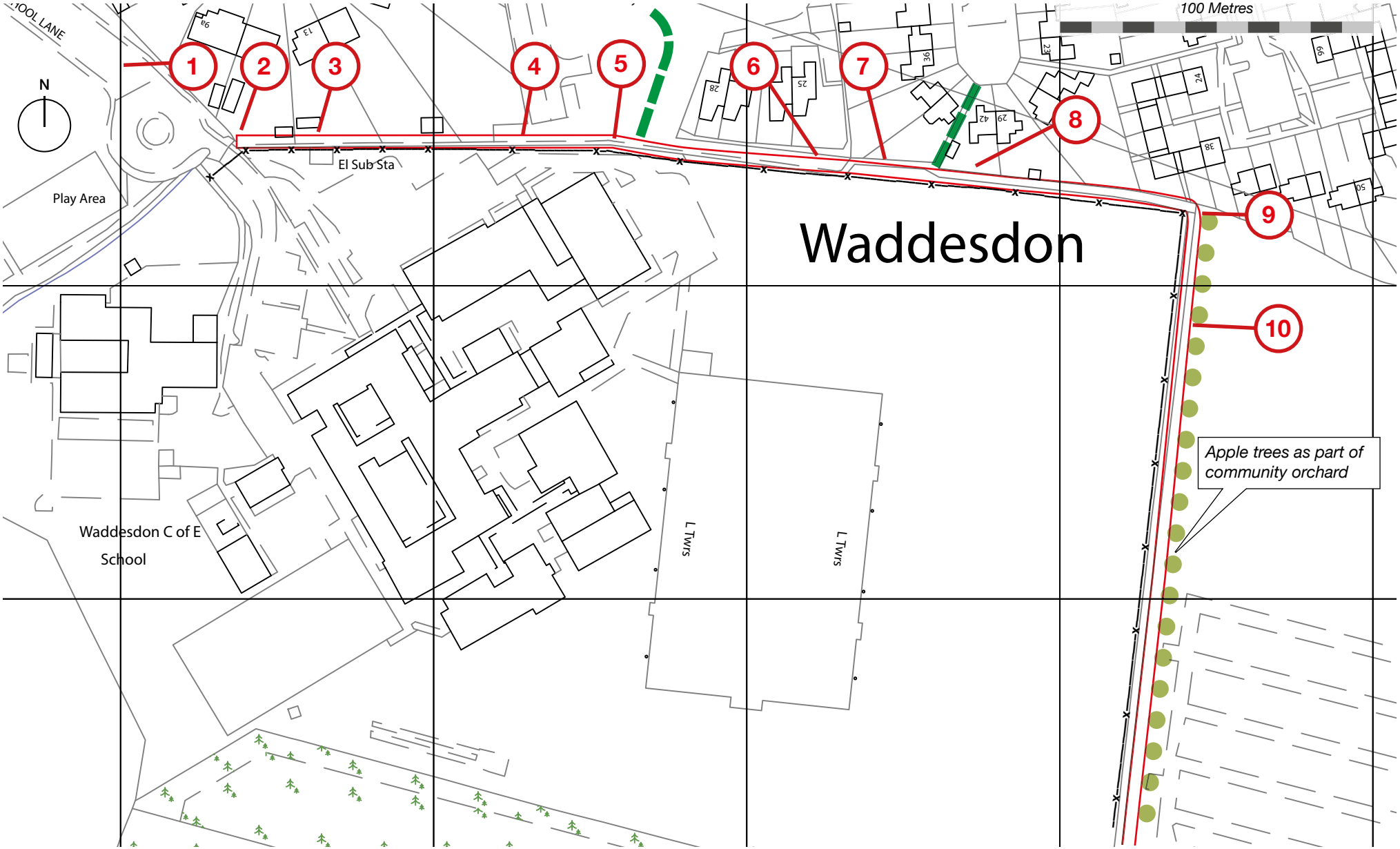
Sketch opposite indent showing path moved away from garden fences into the open space created by the new school fence



9 The school fence has left ample space at this corner.

10 This leg of the existing public footpath feels a bit mean as it is passes across this wide space but between fences only 2m apart. The bleak and empty overflow car park does not help either. There is space to plant a 250 metre long avenue of trees without any loss of car parking capacity. This, along with a new hedge of mixed species, will form an attractive boundary to the school playing fields. It is proposed to work with the Parish Council and plant apple trees as part of a community orchard.

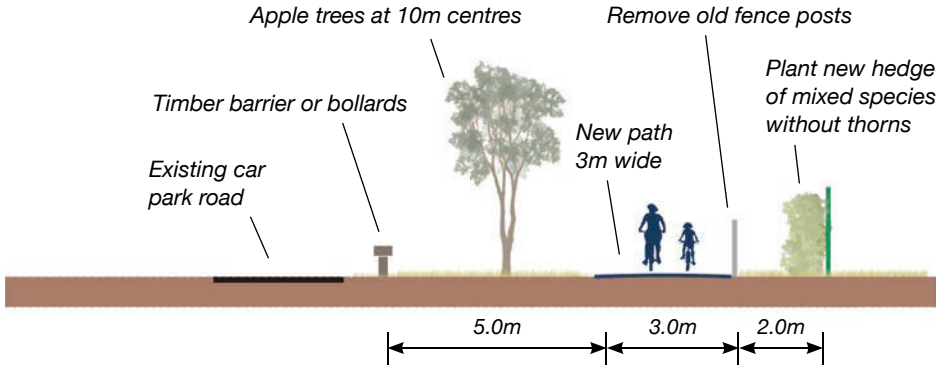
Map 1 of 2: Details of the proposed link to School Lane, Waddesdon



Map 2 of 2: Details of the proposed link to School Lane, Waddesdon

10 This leg of the existing public footpath feels a bit mean as it is passes across this wide space between fences only 2m apart. The bleak and empty overflow car park does not help either. There is space to plant a 250 metre long avenue of trees without any loss of car parking capacity. This, along with a new hedge of mixed species, will form an attractive boundary to the school playing fields. We are working with the Parish Council to plant apple trees as part of their community orchard.

Sketch through section along eastern side of school playing fields

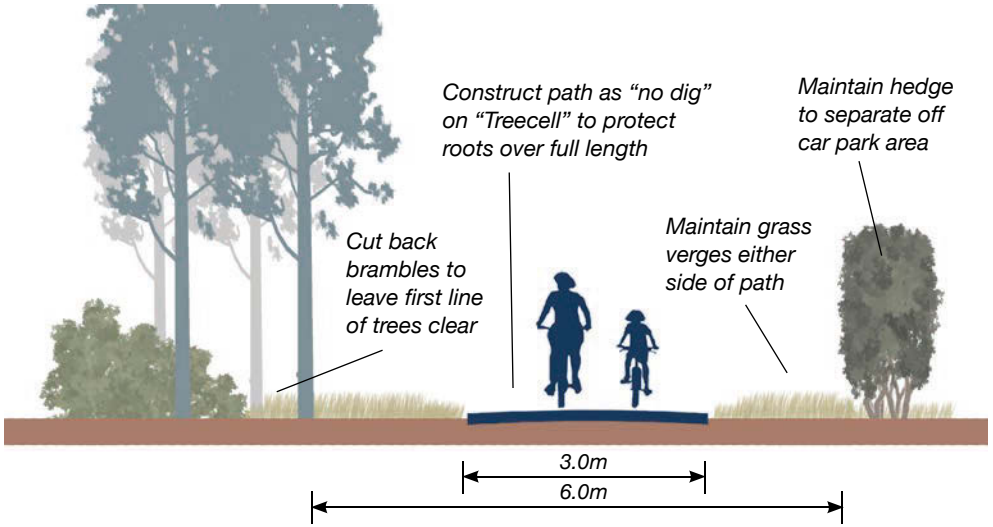


Looking south with new school fence on right and NT car park on left

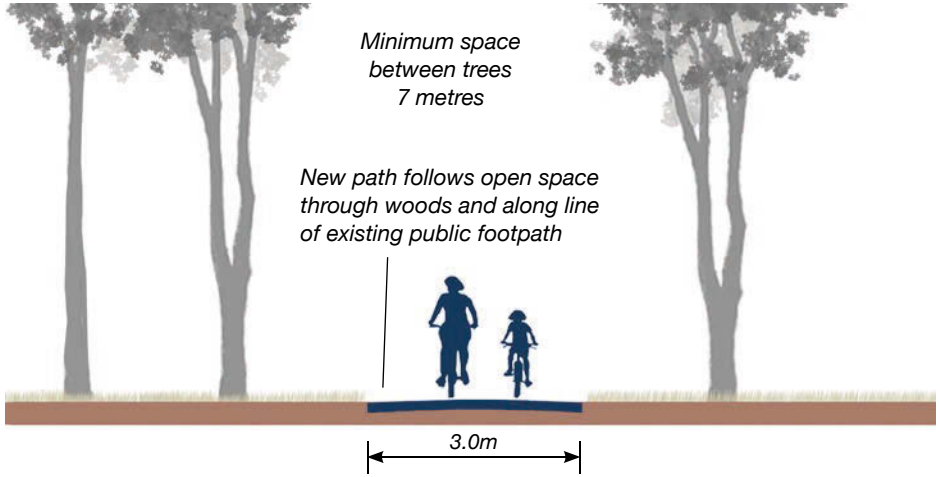
11 At the corner of the car park make a careful connection to the ongoing path for Waddesdon Manor visitors, with a feature in the edge of the wood.

12 Rather than continue along the bleak edge of the overflow car park run down the space between the hedge and the first line of pines. Construct the path on 'tree-cell' for root protection over the whole length.

Looking back from access road along the strip between the woodland and the hedge



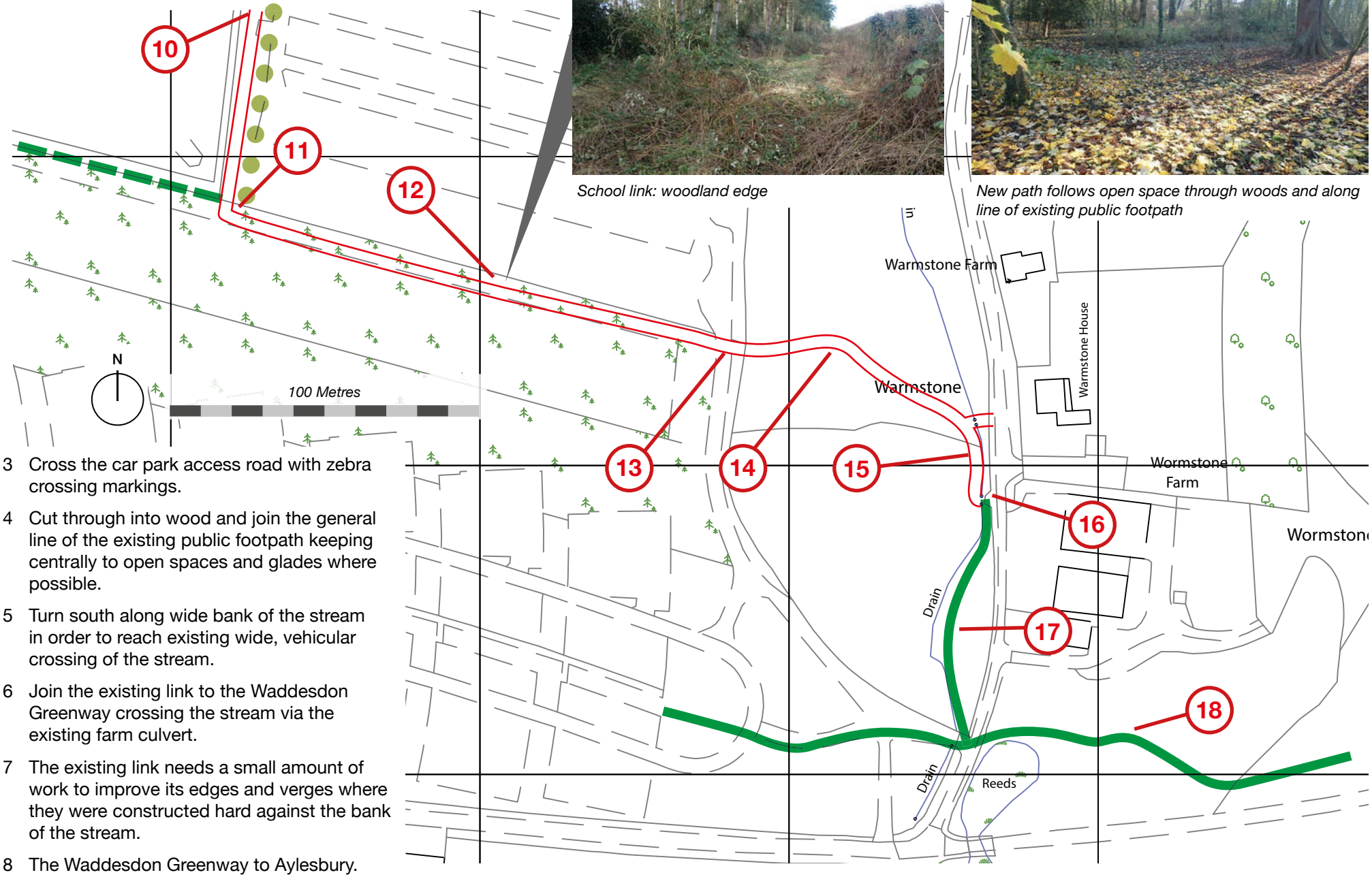
View through Wormstone Wood towards Wormstone Farm and the completed link to the Waddesdon Greenway



Map 2 of 2: Details of the proposed link to School Lane, Waddesdon

School link: woodland edge

New path follows open space through woods and along line of existing public footpath



13 Cross the car park access road with zebra crossing markings.

14 Cut through into wood and join the general line of the existing public footpath keeping centrally to open spaces and glades where possible.

15 Turn south along wide bank of the stream in order to reach existing wide, vehicular crossing of the stream.

16 Join the existing link to the Waddesdon Greenway crossing the stream via the existing farm culvert.

17 The existing link needs a small amount of work to improve its edges and verges where they were constructed hard against the bank of the stream.

18 The Waddesdon Greenway to Aylesbury.

Access points

a School Lane entrance beyond the revised position of the school gates.

b A new path is to be provided in the Golden Mede development. (WAD/18/4).

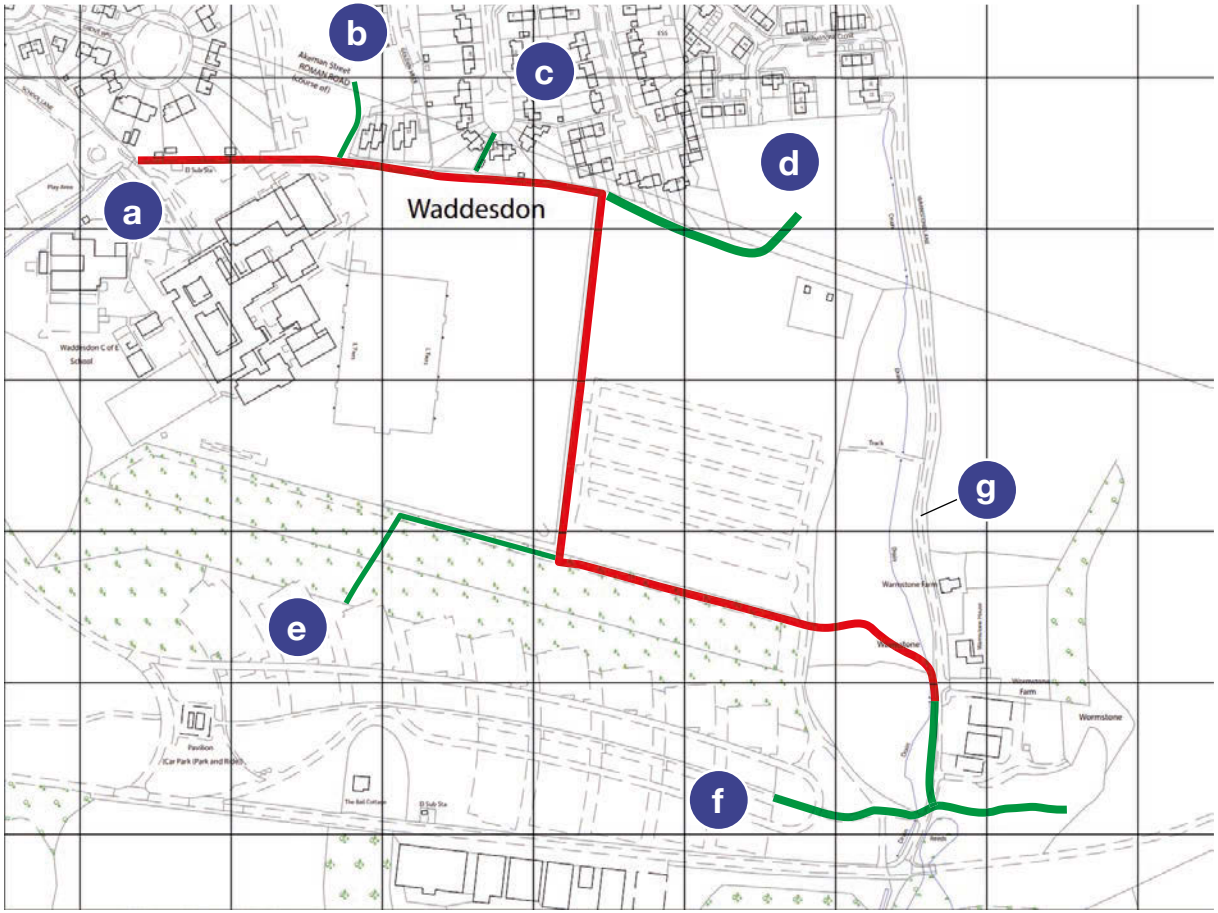
c Existing path to Goss Avenue links through to Sharps Close. This is narrow for shared use but as flows will be low the occasional cyclist can be tolerated.

d A linking path for the new housing development is planned.

e Existing bark-covered path leads along the edge of the School playing fields and then turns through the woods to make a route from the overflow car park to the Waddesdon Visitor Centre.

f Existing path runs down the spine of the main car park.

g Wormstone Lane provides a quiet route for the east end of the village.



Location plan of proposed Waddesdon School Link

This section of the report deals with various ecological, landscape, technical and procedural matters

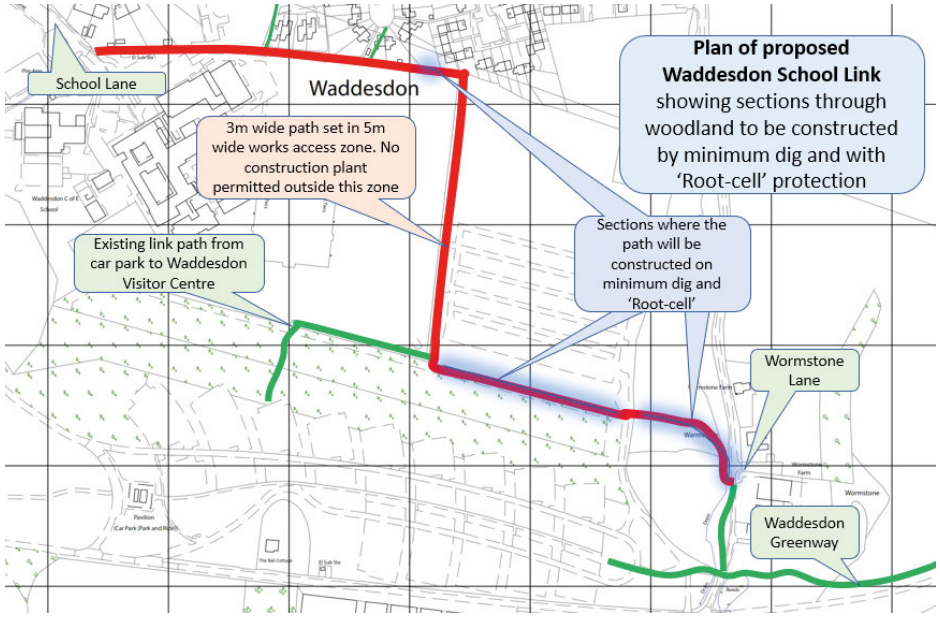
1 Ecological Appraisal

A Preliminary Ecological Appraisal was carried out by Bernwood Ecology in February 2022. This appraisal covered not only the link to Waddesdon School, but a possible link to Westcott. Annex 1 is an abstract covering the Waddesdon School length, while Annex 4 shows the whole Bernwood Ecology report for reference.

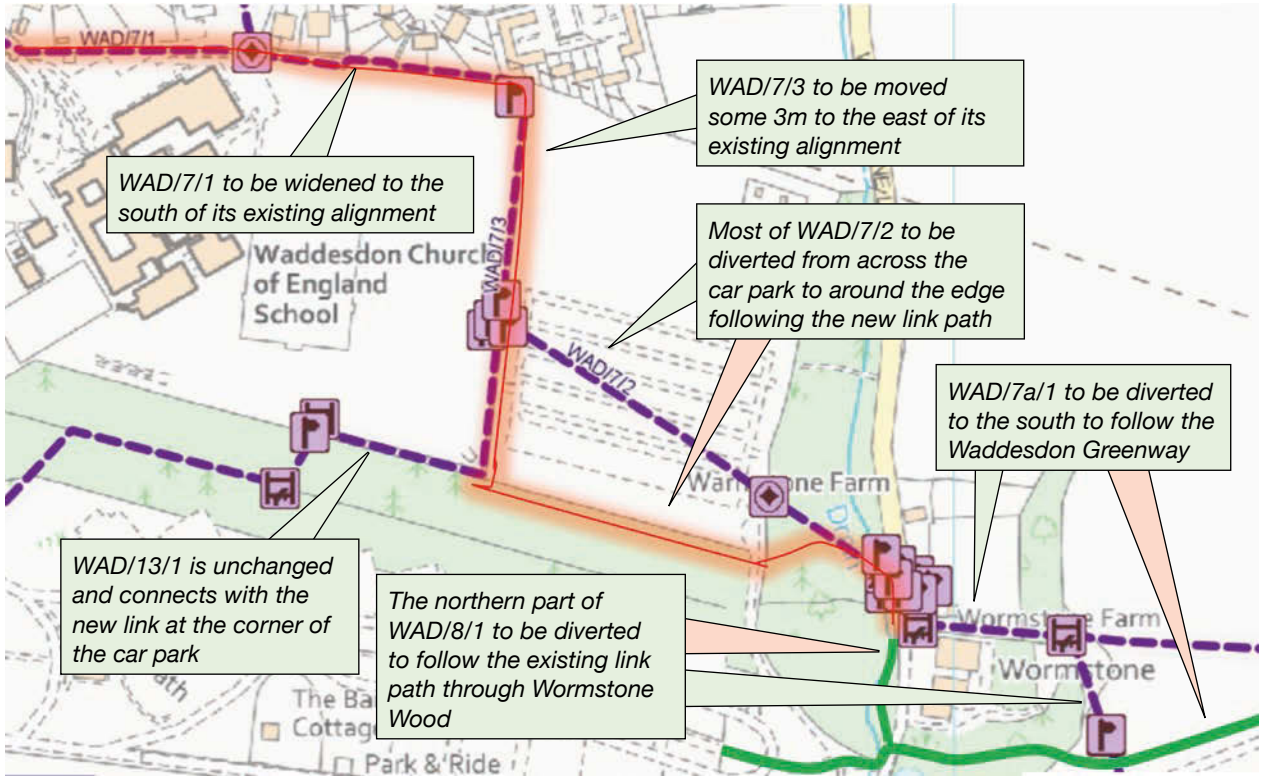
The principal matters for the works to attend to are:

i The need for a District Newt Licence. Greenways and Cycleroutes has developed a method that enables construction to proceed through Great Crested Newt Red Zones without preliminary trapping. This was agreed with Naturespace Limited, who are responsible for the administration of Great Crested Newt Licences. A note detailing the proposed method of construction is at Annex 2.

ii The need for the appropriate tree protection measures over those sections where the path runs under the canopy of trees. An Arboricultural Method and Tree Protection Plan are at Annex 3. The project will use a minimum dig and 'Rootcell' honeycomb over all the areas where the path runs below the tree canopy.



2 Proposed footpath diversions



Proposed rearrangement of public footpaths, all to now follow wide shared-use paths with all-weather surfaces

This link to School Lane will be an opportunity to improve some aspects of footpath WAD/7. Past the School and the Golden Glebe development the existing footpath is rather narrow and hemmed in by hedges considering that it is such a popular route to school. The project has arranged to widen this out and to make it much more spacious. Cyclists will use this route on a permissive basis by agreement with the landowners, whilst the existing statutory footpath will remain for pedestrians.

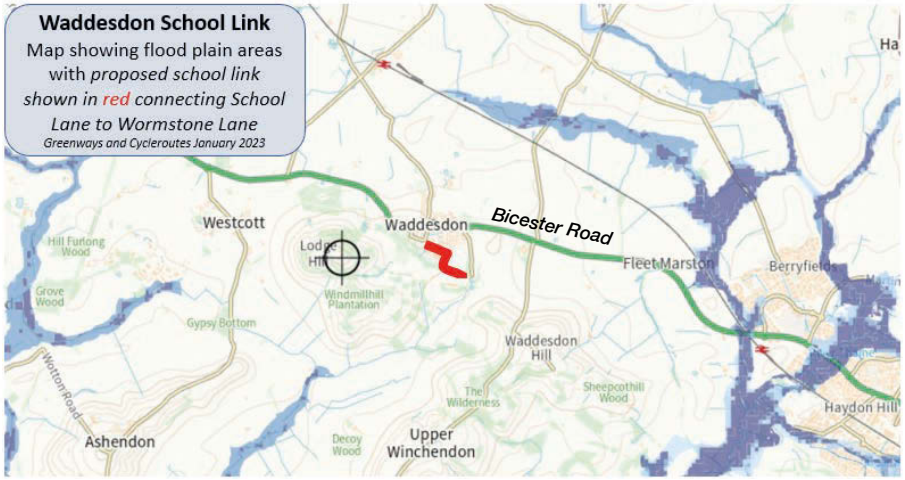
Then around the east side of the playing fields the current footpath crosses the overflow parking on an unmarked line. It is proposed that this section of the footpath is diverted to coincide with the school link. This will be a much more attractive route, with a dry all- weather surface, and will be separate from the car park area.

Finally, through Wormstone Woods the new path will again join the line of the existing footpath but make its surface up to a good standard. The footpath link to Wormstone Lane will remain but as this crosses the ditch on a narrow-culverted path, the school link will continue beside the ditch for a little way to cross on the existing wide farm access culvert.

View of path beside playing field following the erection of the new school fence, 2022

View of narrow path before the removal of the old fence

3 Flood Risk Assessment



Map showing Flood Zone areas in the vicinity of Waddesdon with the proposed path in red

The proposed path is outside any flood risk area.

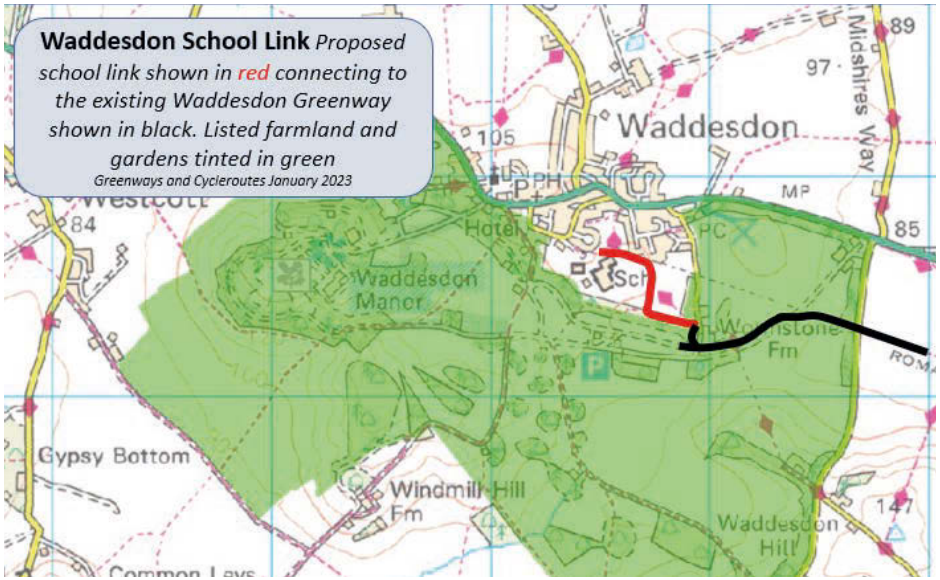
Through the woodland approaching the existing stream, the path will be constructed at a slightly higher level than the ground on account of building through on “Rootcell” with no dig so as to protect tree roots.

Picture showing section of existing public footpath flooded and iced over January 2023. Across this section the path will run on a low causeway so as to be above water level at all times.

The path crosses the stream on an existing farm access culverted crossing. No change is required here.

There are no drainage or run off consequences of the proposed path as it will be constructed with a central camber throughout resulting in any precipitation running off into the ground only a very few metres from where it would have done so anyway.

4 Listed Garden and Estate and Archaeological considerations



Map showing the Listed area with the path marked in red.

Most of the proposed path lies outside the Listed Waddesdon grounds.

The County Archaeologist has been consulted about the appropriate measures and considers that given the minimal excavation involved no report or watching brief is required. A shallow ditch was dug during the construction of the car park and nothing of interest was found.

Historic England have been consulted and have confirmed that they have no issue with the scheme.

5 Design and Access Statement

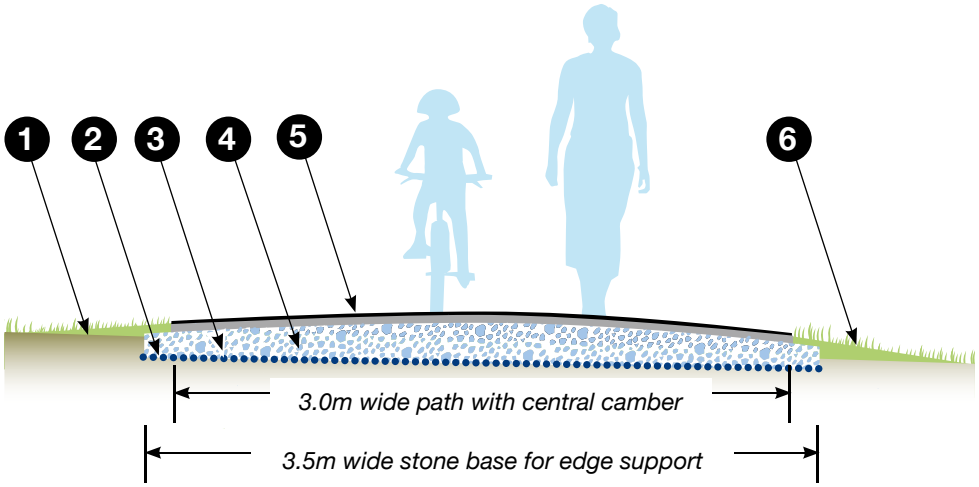
The design of this path will be similar to that of the nearby Waddesdon Greenway. The cross section detail is shown here and the arrangement to be adopted in the woodland area is discussed in the Arboriculture section.

Picture of Greenway

Picture of path through Wormstone Wood

The new path will link to all existing paths at intervals. There are no new fences, gates or barriers to be provided for in the scheme, although the existing school entrance gates and adjacent fence will be rearranged. The only connection to a public road is adjacent to the school gates at the point where the existing public footpath joins the end of School Lane.

No street lighting will be installed but a line of solar studs will be provided set at 5m intervals along the centreline of the path. These will link up to the existing similar lighting through Wormstone Woods.



Cross section through 3m wide sealed path

1 *The path surface level is to be approximately 150mm above existing ground level so as to ensure positive drainage at all times.*

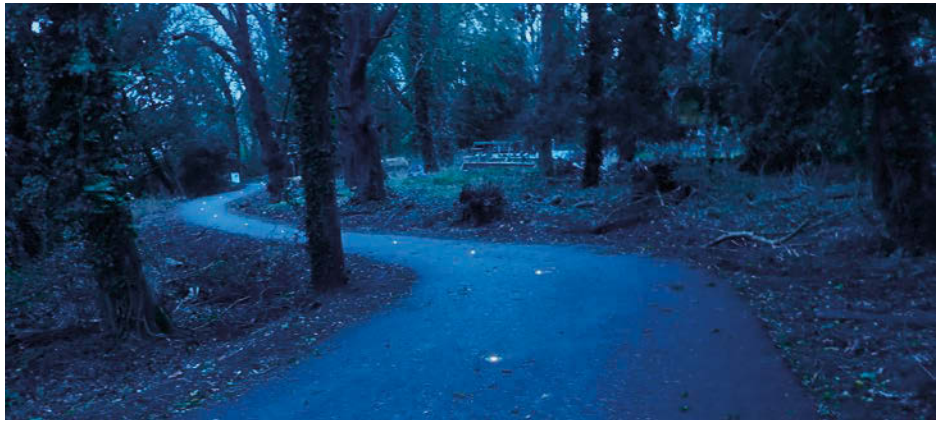
2 *A shallow clearance and levelling of ground. This should be just sufficient to provide the material required for the shoulders (6).*

3 *Polypropylene filter fabric*

4 *Base, compacted stone or approved recycled material 200mm thick, laid with a central camber and a finished top width of 3.5m minimum.*

5 *Machine laid dense bitumen macadam, 20mm aggregate size, laid 60mm thick, 3m wide with a central camber.*

6 *Shoulders built up of available solid from the site. The final arrangement to have a level ground area, at least 500mm wide either side of DBM.*



Existing lighting through Wormstone Woods

6 Landscape Design Strategy

New hedge and tree planting will be included along the overflow car park section and the recently erected school boundary fence will be softened with creepers.

No seats are envisaged on this short section of route.

The extension of the Waddesdon Greenway is designed to provide a direct, traffic free and attractive path for walkers and cyclists connecting the Greenway to School Lane.

The landscaping and planting proposals are designed to enhance the attractiveness of the route and make the journey memorable, and also to enhance the habitat.

The views from the Greenway, the views along the Greenway, its immediate surroundings, the location of seating, the proportion of sunshine and shade and the welcome at each end – these all contribute to the overall experience whether at a conscious level or not.

The objective of the project is to increase substantially the number of walking and cycling trips made in the area to the public's benefit, fitness and health, and to reduce the need for motorised transport all the while enhancing the habitat.

The construction site is long and narrow: just 5m wide. The final path will be 3 metres wide, with the verges returned to habitat. This narrow corridor, and restricted access, allow little scope for additional works.

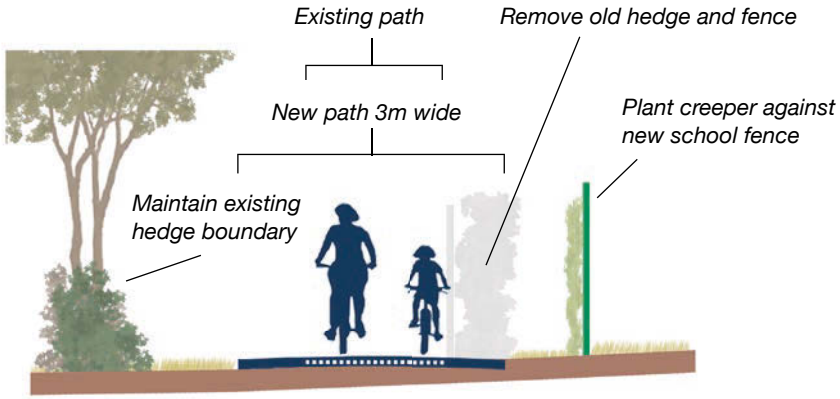
Experience of similar routes demonstrates that users are extremely unlikely to walk or ride away from this strip. They will however look out over the land on either side and because they will be travelling slowly they will be able to appreciate their surroundings. We will manage the vegetation to maintain and enhance these views.

The management of the route, particular the method of maintenance of the route edges, is designed to maximise habitat, consistent with the safety of the general public using the route – who require path width to be maintained and not to be hit by branches.

This project has four distinct sections.

The first runs close to the school fence where the recently installed mesh fencing will be softened with creepers such as honeysuckle. There is very little scope for views here but we hope that the Golden Mede landscaped area will provide an attraction along the way

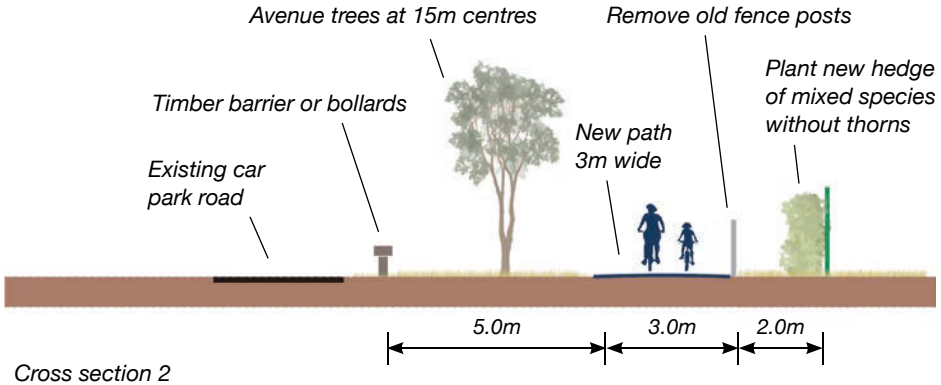
Sketch through new path opposite new housing



Cross section 1

The second section runs along the side of the overflow car park and here there is space to replant the hedge taken down by the school fence installation, as well as make an avenue of shade trees to demark the edge of the rather barren car park. These will provide an interesting foreground without obscuring the longer view to Wormstone Wood. The hedge has no function as a livestock or security barrier but is to ameliorate the harshness of the new mesh fence and reduce overlooking of the playing fields. Creepers and climbers of various species will provide an attractive boundary to the path.

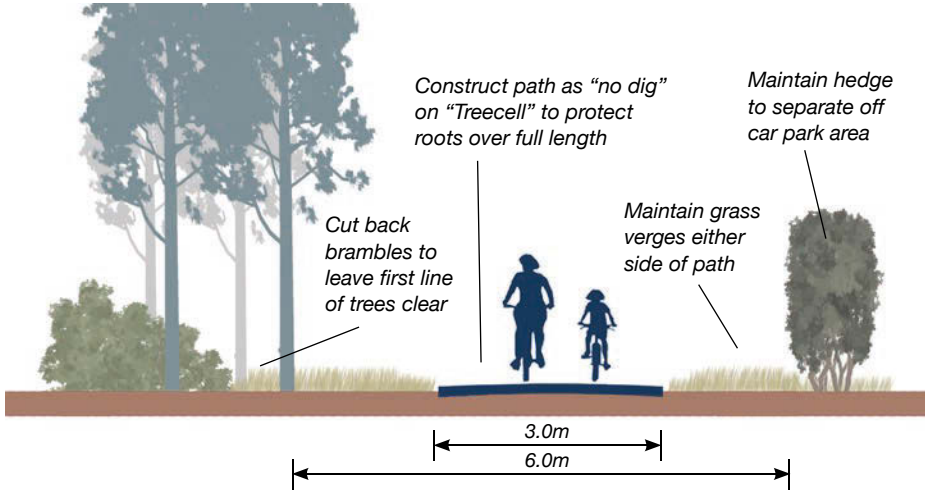
Sketch through section along eastern side of school playing fields



Cross section 2

The third section runs along the fringes of the pine wood where some of the ground cover will be cleared to give a more spacious feel.

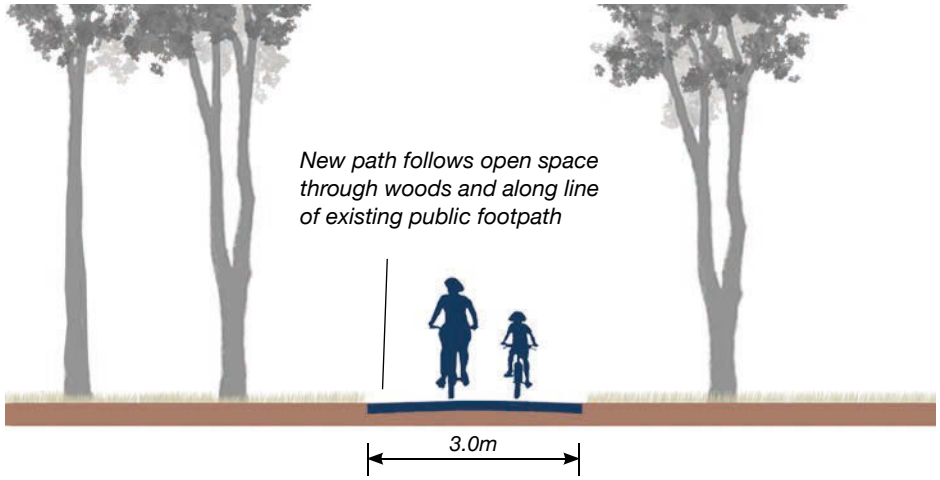
Looking back from access road along the strip between the woodland and the hedge



Cross section 3

The last section runs through open glades in Wormstone Wood with some mature sweet chestnut trees providing scale and maturity.

View through Wormstone Wood towards Wormstone Farm and the completed link to the Waddesdon Greenway



Cross section 4

The path then links to the existing paths first built 4 years ago as part of the Waddesdon Greenway.

View of linking path in Wormstone Wood

Planting details

All planting will be of native species, of local provenance, including orchard trees, except along the school boundary fences where some plants will be selected for their flowering and aromatic qualities.

Trees Saplings will be approx. 1.5m high. These will planted in holes dug to 50cms, watered as conditions require, and heeled in.

The new planting and natural regeneration will be checked monthly by volunteers.

Verges The verges will be sown with a wild flower and wild grass mix from Emorsgate or equivalent suitable for the soil. Once established, the wild-flower area will be mown annually, and the cuttings removed once seeds are set.

The first half metre of the verge will be mown more frequently so a regime of the low flowering plants will flourish. In the wider verges up to three metres from the path the mowing regime will wait until the taller flowers have set seed. Once established, the wild-flower area will be mown annually, and the cuttings removed once seeds are set.

Hedges Mixed hedges will be planted, but without thorned species because of the difficulty of punctures after hedge cutting. Hedging will be planted as soon as practicable, from November at the rate of 5 plants per metre set in a double row. Whips will be planted in slips approximately 20cm deep, or as required by the root balls, watered as conditions require, heeled in.

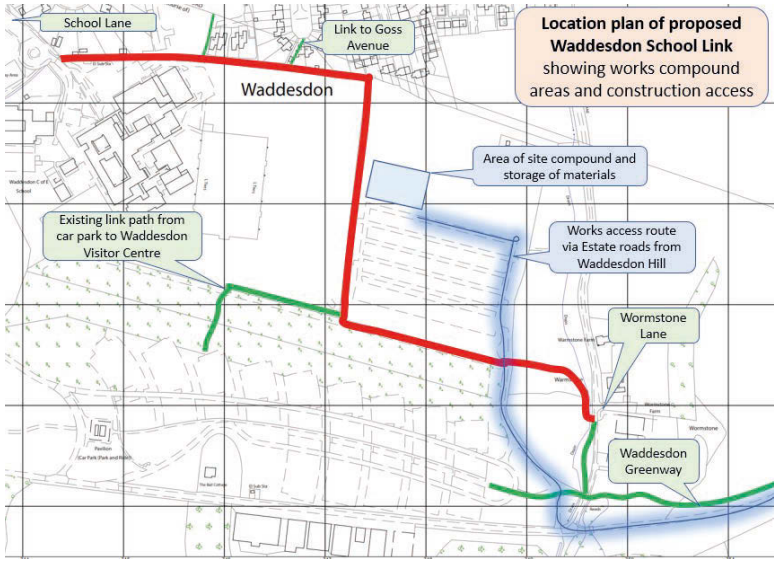
Once established, hedges will be maintained at fence-top height for 20 metres either side of each field crossing to give good visibility of approaching farming vehicles.

Around the school fence perimeter where there are no livestock issues, the planting will be more ornamental in character, designed primarily to soften the impact of the fence and to screen the school playing fields

List of planting along the school boundary fencing
Honeysuckle (*Lonicera periclymenum*), Wayfaring bush (*Viburnum lantana*), Guelder rose (*Viburnum opulus*), Native privet (*Ligustrum vulgare*), Spindle (*Euonymus Europaeus*), Crab apple (*Malus sylvestris*), Mountain ash (*Sorbus aucuparia*).

7 Construction Traffic

Construction traffic will all be via the Waddesdon Estate roads to a temporary works site in the corner of the overflow car park. It is envisaged that this 800 metres long path will be constructed over a period of 4- 5 weeks, outside school term time as far as possible. A total of 1000 tonnes of stone and tarmac will be required. No materials will be removed from site.



Plan showing site compound area and works traffic access

8 Maintenance matters

The main works on this path will be to cut back hedges and mow verges. This work will be incorporated into the Parish Council programme whose maintenance team will also be managing the verges of the Waddesdon Greenway all the way through to Aylesbury Vale Parkway Station. One dog bin near the school entrance to be provided for and maintained by the Parish Council. Volunteers will be encouraged to patrol the path to manage litter and minor works, and to engage with the public.

All maintenance, aftercare and remedial measures will be carried out by the local volunteer group. This group will also maintain the path, ensuring its cleanliness and acting as informal rangers and wardens. Maintenance will be minimal; the immediate verges of the path will be cut back 3 times each year for a width of no more than one metre either side of the path; back brambles and other vegetation will be removed as necessary to keep a clear corridor approximately 4 metres wide and 3m high.

For five years newly planted trees will be monitored carefully and, should they die, be replaced during the next planting season. On the embankment section saplings will be encouraged to grow to increase bat connectivity.

Picture of volunteers planting trees at Buckingham Park

Conclusion

This link to Waddesdon School will resolve the current rather unsatisfactory way from the end of the Waddesdon Greenway to the Village Centre. Existing routes do exist via the Waddesdon Drive, and via Warmstone Lane, but neither of these are completely direct, or serve the local population as well as this does. In addition, this linking route will define an ongoing route to Quainton and Buckingham, so this modest link has a regional role, as well as a local one.

Greenways and Cycleroutes January 2023

Waddesdon Greenway: Link to School Lane

Annex 1: Abstract from full Bernwood Ecology Report

Preliminary Ecological Appraisal

This annex sets out the relevant material from the Full Bernwood Ecology report for ease of reference. The description of habitats relate to the plan below.

Broadleaf Plantation Woodland

BWP1 (Figures 1 & 2): Planted woodland consisting mostly of horse chestnuts *Aesculus hippocastanum* and occasional lime trees *Tilia* sp. A scrub layer is also present consisting mainly of sycamore *Acer pseudoplatanus*, but ash *Fraxinus excelsior*, elder *Sambucus nigra*, box *Buxus sempervirens*, laurel *Prunus laurocerasus* and snowberry *Symphoricarpos albus* can also be observed. The ground vegetation is mostly ivy *Hedera helix* with some nettle *Urtica dioica*, ground elder *Aegopodium podagraria* and ground ivy *Glechoma hederacea* growth. A lot of dead wood features can be observed throughout this woodland both standing and on the ground. One bird box and one bat box can be seen at the northern side of this woodland (TN1). Historical mapping shows this woodland to be continually present since at least the late 1800's

Scrub

There are five main areas of this description throughout the route (northernmost to southernmost labelling: S1: Dense scrub consisting mostly of blackthorn and willow. S2: Dense bramble scrub.

Semi-Improved Grassland (includes field margin)

SPSI1 (Figure 11): Fairly low sward height approximately 10-20cm long and there are signs of semi-regular mowing. The dominant grasses are ryegrass *Lolium* sp. and bent *Agrostis* sp. with frequent cocksfoot *Dactylis glomerata* and occasional bristly oxtongue *Helminthotheca echioides*, clover *Trifolium* sp. and ribwort plantain *Plantago lanceolata*. Some areas (especially east of the school) have some gravel cover.

Amenity Grassland

Regularly maintained (i.e. mown) grassland within the school grounds used primarily for sports, consisting mostly of perennial rye grass (Figure 19).

Bare Ground

Existing footpath north of the school grounds is a combination of bare earth and woodchip (Figure 21).

Ponds

There are 5 ponds within 250m from the site at the north eastern section of the proposed route. P1: Car park pond forming part of SUD system (Figure 23). At the time of the survey there was very little water retained within

Best Practice Measures

2.7 General measures are to be implemented to avoid the risk of harm to wildlife before and during the construction activities:

- During construction, excavations are to be backfilled or covered overnight or created with a shallow sloping side to allow any inadvertently captured wildlife to escape unaided.
- No fires are to be lit on site.
- No food is to be left on site overnight that may attract scavenging wildlife into the working area.
- All litter is to be stored in suitable covered bins or taken home to reduce the likelihood of litter being distributed into the local area by the weather.

2.8 Where protected species are unexpectedly encountered on or near to the site, before or during construction, works are to cease and the advice of a professional ecologist sought to allow a reassessment of impacts and appropriate advice to be given.

2.9 In order to ensure that active nests are not damaged or destroyed during the works, it is advised that hedge, tree and vegetation clearance are started during the autumn (i.e., September-November) when birds are least likely to be nesting, subject to other protected species recommendation (i.e. reptiles and great crested newts). Works undertaken outside of this period will require a nesting bird check to be conducted by a suitably experienced ecologist no more than 24 hours prior to works starting. If active nests are observed, the works within the vicinity must cease and an appropriate safe zone around the nest established until the young have been verified to have fully fledged by the ecologist and the nest is no longer active.

Age of Survey Data

2.10 It is accepted that ecological surveys have a limited period of validity due to changing habitats and the transient behaviours of some UK wildlife species. Delays on the progression of the project beyond 12 months will require the PEA to be repeated (CIEEM, 2019).

3. References and Further Reading

BSI (2012). Trees in relation to design, demolition and construction—Recommendations (BS 5837:2012). British Standards Institution.

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Stone, E. L. (2013). Bats and lighting: Overview of current evidence and mitigation.

the pond. There is a lot of emergent vegetation and dense willow growth around it. P2: Large pond divided into two parts by a narrow strip of a paved path. At the time of the survey both sides of the pond were holding water. A lot of bulrush *Typha latifolia* growth is noted, and ducks were also seen using the pond during the survey. P3: Pond approximately 10-20cm deep (Figure 24). There is dense leaf litter coverage and no emergent vegetation with soft ground surrounding it. P4: Pond approximately 10-15cm deep (Figure 25). Some emergent vegetation is present. It potentially dries out during the warmer months as indicated by the growth of terrestrial plants, such as willowherb *Epilobium* sp., buttercup and nettle, inside the pond. P5: Pond approximately 15-30cm in depth (Figure 26). Dense leaf litter and no emergent vegetation presence is noted.

Scattered broadleaf tree

There were five notable scattered trees throughout the route. A mature ash tree is present north of the school grounds (Figure 27). Even though no access points for bats and/or other wildlife could be seen from the ground. However, due to dense ivy coverage those features might have been obscured and therefore this tree is classified as of low suitability of supporting roosting bats.

Hedgerows

HR1 (a and b) (Figures 29 & 30): Hedgerow separated into two by creation of new housing development. 2m high and 1.5m wide species rich defunct hedgerow, consisting mostly of field maple *Acer campestre* with occasional hazel *Corylus avellana*, elder, rose, crab-apple *Malus sylvestris*, blackthorn and hawthorn.
HR2 (Figure 29): 2m tall and 1.5m wide species poor defunct hedgerow, consisting mostly of blackthorn with occasional field maple.
HR3 (Figure 31): 2m tall and 1.5m wide species poor intact hedgerow, consisting of cypress *Cupressus* sp. trees.
HR4 (Figure 32): 2m tall and 1.5m wide species poor intact hedgerow, consisting mostly of blackthorn and occasional elm. HR5 (Figure 11): 2m tall and 1.5m wide species poor intact hedgerow, consisting mostly of blackthorn and hawthorn with occasional rose.

Figure 1. Broad leaved plantation woodland (BWP1).

Figure 2. Broad leaved plantation woodland (BWP1).

Figure 11. SPSI1 and HR5.

Figure 19. Amenity grassland sports pitch.

Figure 20. Tall ruderal vegetation.

Figure 23. P1.

Figure 24. P3.

ure 26. P5.

re 27. Mature ash north of school
nds with low bat potential.

re 29. HR1a (left) and HR2 (right).

Figure 30. HR1b.

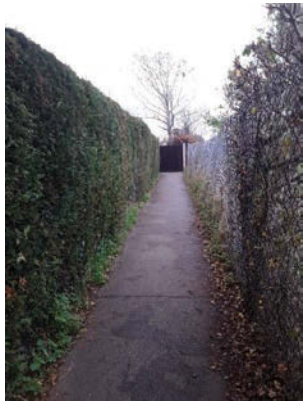

Figure 31. HR3 (left).

Figure 32. HR4.

1. Discussion and Conclusions

Designated Sites

1.1 There are no statutory sites identified within 1km from the proposed route. Two Biological Notification Sites are present with the closest being the Waddesdon Park through which the route is passing through. Three priority habitats have also been identified two of which (woodpasture and parkland and deciduous woodland) the route passes through.

Habitats

1.2 Habitats along the proposed route range from having negligible ecological value (e.g. bare ground, hardstanding, arable) to high ecological value (e.g. broadleaved semi- natural woodland, species-rich hedgerows). The majority of the route will be on either existing hardstanding/ bare ground pathways or on species poor semi-improved grassland (generally field margins). Several hedgerows will be affected by the proposals.

1.3 Any losses in habitat with ecological value must be avoided through design of the proposed route wherever possible and kept to an absolute minimum. The final route has not yet been finalised and must be designed with input from the project ecologist. If habitat losses are unavoidable then the losses must be compensated for through habitat creation/ enhancement to take place elsewhere which will create habitats of equal or greater ecological value.

Invertebrates

1.4 The site is likely to offer moderate-quality invertebrate habitat, especially in the woodland areas and the field margins of the arable field. The redevelopment of the site provides an opportunity to create new habitats (areas of grassland, hedgerows, trees, etc.) which can offer higher quality invertebrate habitat than currently exists on site.

Great Crested Newt

1.5 There are 20 records of great crested newts within the 1km BMERC search area, five of which were within 250m from the route. There are also records for great crested newts from survey licence returns (MAGIC Map), which showed presence of great crested newts in the area as recent as 2017, with the closest pond being approximately 200m north west of the site.

1.6 Most parts of the site are located within the 'Red' and 'Amber' zones on the NatureSpace Partnership District-Level Licensing (DLL) scheme, indicating '*highly suitable habitat – the most important areas for GCN*' and '*suitable habitat – great crested newt likely to be present*' respectively, according to the NatureSpace Partnership evaluation of habitat suitability.

1.7 Five ponds were identified within 250m from the north eastern section of the route during the survey. Pond 1 was retaining very little water at the time of the survey, pond 2 retained a lot of water and it had a lot of emergent and marginal vegetation and the other three ponds were located within the woodland area north east of the route and although they were holding water they were all likely to dry out during the drier months (especially true for pond 4).

1.8 The site offers some opportunities to support this species terrestrially, especially in woodland areas, the scrub areas and the tall ruderal patch north east of the proposed route. Adoption of the local District Level Licensing (DLL) scheme is advised.

Reptiles

1.9 Three records for common lizard and grass snake were returned from the data search. The records are relatively recent (most recent record in 2018) but they are over 800m from the site boundary. Habitats along the proposed route offer good foraging and sheltering opportunities for reptiles, particularly the more tussocky areas of field margin, woodland and scrub areas. Grass snakes are a highly mobile species and are associated with aquatic habitats; the presence of the on-site ponds and stream increases the likelihood of the species being present. At this time, it is not considered necessary to undertake detailed surveys for reptiles as habitat reduction measures can provide a suitable pragmatic option for this site. Restrictions on timings of removal of the habitat, presence of ecologist during vegetation/hedge/tree removal and an unexpected finds protocol are advised.

Terrestrial Mammals

1.10 There are multiple recent badger records returned from the data search with a potential sett being present <1km from the site. In addition, field signs of the species in the form of latrines were observed adjacent to a field fence along the proposed route. Although the site offers suitable areas for badgers to excavate setts, especially within the scrub and woodland areas and within hedgerows, no

setts or mammal holes were observed during the PEA survey. Badgers are a highly mobile species which can quickly excavate new setts at any time of year and so recommendations are made to continue to monitor the site and areas within close proximity to the site boundary in the lead up to any development to ensure that no setts have become established. Best practice measures are advised for the construction period to reduce the risk of harming any transitory terrestrial mammals.

Bats

1.11 Multiple bat records of a variety of species were returned from the data search. The woodland areas on the site can offer roosting opportunities for bats. The ash tree north of the route was identified as having low roosting potential therefore the retention of this tree is advised. If this is not possible further bat surveys will be needed. If removal of other mature trees is required to facilitate the route, further survey for roosting bats will be required.

1.12 It is understood that no artificial lighting is proposed as part of the new cycleway.

Wild Birds

1.13 Multiple species of birds were included within the data search results. The use of the woodland trees, hedgerows, scrub areas and arable land for nesting by Schedule 1 and non-Schedule 1 species is very likely. Therefore, advice on the avoidance of
damage or destruction of active birds' nests is provided.

1.14 Farmland and migratory birds such as redwing, fieldfare and brambling are likely to use the fields and hedgerows surrounding the route. The loss of any sections of hedgerow must be compensated for with new hedgerow planting or hedgerow enhancement.

2. Recommendations

2.1 The ecological mitigation hierarchy must be followed by all elements of the project, from design, to construction, to end use, to ensure there is a net gain to biodiversity on site and the favourable conservation status of protected species is maintained. The mitigation hierarchy follows:

- *Avoid*: avoid impacts on biodiversity as a priority.
- *Minimise*: minimise impacts that cannot be completely avoided, through alternations to design, use, scale, location, timing of phases, etc.
- *Mitigate and compensate*: undertake works which will have an impact by implementing safeguarding measures, such as using an Ecological Clerk of Works (ECoW) where there are risks to wildlife. Provide compensation to replace habitats that have been lost as a consequence of proposals.
- *Enhance*: Provide additional habitats and features for wildlife to ensure biodiversity net gain. Habitat offsetting may be required where net biodiversity gain cannot be secured within the site boundary.

Habitat Retention and Enhancement

2.2 Habitats with high ecological value such as broadleaved semi-natural woodland and species rich hedgerows must be retained with the proposed route being altered to avoid these habitats. Any losses of habitat must be compensated for through habitat creation and enhancement elsewhere within the Waddesdon Estate. Retained trees and hedges are to be protected through Root Protection Areas which are to be implemented in line with the tree in relation to design, demolition and construction (BSI, 2012).

Great Crested Newt

2.3 It is recommended that the site is entered into the District Level Licensing scheme administered by NatureSpace www.naturespaceuk.com. DLL licensing will negate the need for any surveys and can be granted at the point of receiving planning permission. As much of the route lies within a 'Red Zone', there will be a requirement for ecological supervision and mitigation measures as a condition of the license

Reptiles

2.4 To further reduce the risk of harming reptiles during site clearance works, it is advised that the vegetation on site is maintained at a low (<150mm) sward height. An experienced ecologist will be required to provide supervision during any hedge, scrub and any tall grassland vegetation clearance; this must be conducted outside of the winter months to ensure any reptiles are mobile and able to move out of the work areas.

Terrestrial Mammals

2.5 Evidence of badger use of parts of the site were present. Although no setts were observed it is recommended to monitor the site and areas within close proximity to the site boundary in the lead up to any development to ensure that no setts have become established. A walkover by an experienced ecologist of the route must be undertaken no more than two weeks prior to works commencing. Best practice measures are advised for the construction period to reduce the risk of harming any transitory terrestrial mammals.

Bats

2.6 If the retention of the ash tree at the north of the route is not possible a tree climbing survey by a bat licensed ecologist is required to determine if bats are likely to be present; if suitable roosting features or evidence of roosting bats is found then further survey will be required.t Where bat roosts are identified and impacts on the roosts cannot be avoided during the works, a European Protected Species License (EPSL) will be required for works to proceed lawfully.

Best Practice Measures

2.7 General measures are to be implemented to avoid the risk of harm to wildlife before and during the construction activities:

- During construction, excavations are to be backfilled or covered overnight or created with a shallow sloping side to allow any inadvertently captured wildlife to escape unaided.
- No fires are to be lit on site.
- No food is to be left on site overnight that may attract scavenging wildlife into the working area.
- All litter is to be stored in suitable covered bins or taken home to reduce the likelihood of litter being distributed into the local area by the weather.

2.8 Where protected species are unexpectedly encountered on or near to the site, before or during construction, works are to cease and the advice of a professional ecologist sought to allow a reassessment of impacts and appropriate advice to be given.

2.9 In order to ensure that active nests are not damaged or destroyed during the works, it is advised that hedge, tree and vegetation clearance are started during the autumn (i.e., September-November) when birds are least likely to be nesting, subject to other protected species recommendation (i.e. reptiles and great crested newts). Works undertaken outside of this period will require a nesting bird check to be conducted by a suitably experienced ecologist no more than 24 hours prior to works starting. If active nests are observed, the works within the vicinity must cease and an appropriate safe zone around the nest established until the young have been verified to have fully fledged by the ecologist and the nest is no longer active.

Age of Survey Data

2.10 It is accepted that ecological surveys have a limited period of validity due to changing habitats and the transient behaviours of some UK wildlife species. Delays on the progression of the project beyond 12 months will require the PEA to be repeated (CIEEM, 2019).

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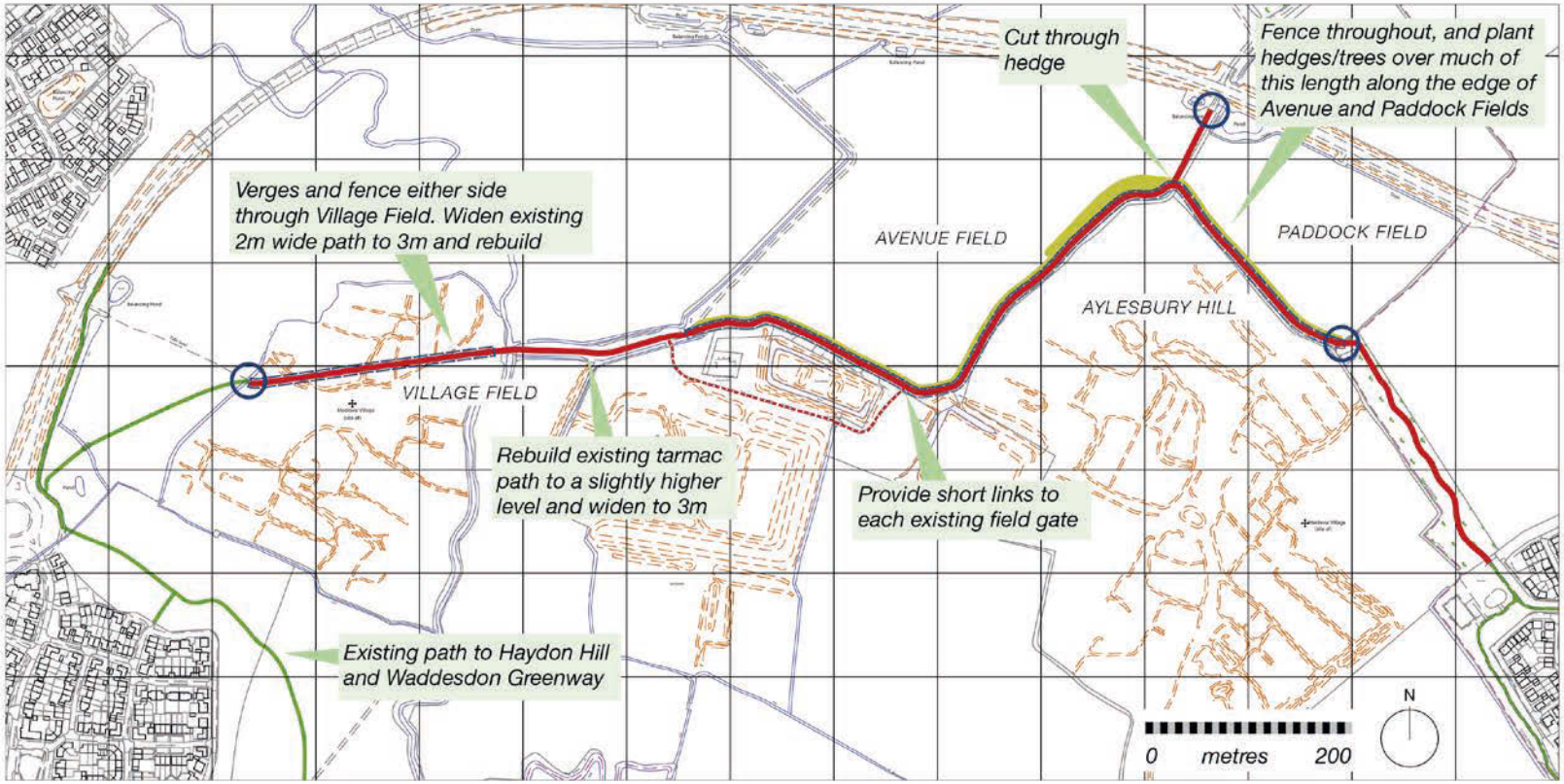
Annex 2: Method of Path Construction in areas where Great Crested Newts may be found

A brief report on construction method used to take account of the possible presence of Great Crested Newts and its relevance for the building of future paths of this kind based upon a path construction near Buckingham Park, Aylesbury in September 2022.

Greenways entered into the first Great Crested Newt Licence for the construction of the Waddesdon Greenway through Wormstone Wood, and it has recently constructed a link to Buckingham Park across a Red Zone under the terms of a further District Newt Licence. The method adopted there in consultation with Nature Space who administer the District Newt Licences and David Kent, the project ecologist, is set out below. We recommend that a similar approach is followed here.



Berryfields and Buckingham Park linking path showing the Aylesbury Gardenway and existing paths

Method of construction in a Great Crested Newt Zone

Greenways and Cycleroutes were asked by Buckinghamshire Council to promote and construct a new path, for pedestrians and cyclists, 1.5kms long. Planning consent 21/03578/FUL was granted 25th August 2022 and construction commenced 30th August so that work was completed before the weather deteriorated.

A District Newt Licence had been granted. At the time of the application the project lay within an amber zone and working methods were formulated accordingly. By the time of the construction the area had been redesignated to a red zone.

The following method of construction was agreed with the ecologist, David Kent of Two Wheels Ecology, and Greenways Engineer John Grimshaw, in discussion with Naturespace, as administrators of the Great Crested Newt Licence.

The main concern was how to prevent Great Crested newts being trapped during construction, and particularly from entering into any exposed areas of stone path base if this was left open overnight. The solution adopted was to lower the whole construction so that at the end of each working day the compacted stone layer was flush with the surrounding ground, or flush with any built-up soil shoulders. The surface itself was rolled so that it did not offer holes for newts to crawl into. Almost the whole length of the route was grassland grazed by sheep with a 200m section through overgrown brambles and scrublands.

i *The ground along a section of path, typically 200m or so, was scarified by a machine with a toothed bucket under the close scrutiny of the ecologist who was looking for any Great Crested newts. None were found, but if they had been they would have been carefully translocated.*

ii *Once the section had been declared clear by the ecologist then the same day the length was carefully dug out (picture 2) and left as a cleaned excavation dug 200mm deep. On this project the exposed ground was then inspected by an archaeologist working under Licence from Historic England.*

iii The next morning the excavated area was checked for Great Crested newts and then filled with compacted stone and rolled off level with the ground

iv This sequence of events was repeated until the whole 1.8kms was constructed to a base stone layer

v The final tarmac surface was then laid over a period of 2 days for the whole 1.5km length

vi To complete the work the shoulders were built up level with the tarmac surface

This procedure allowed the works to be completed, and crucially on these very difficult soils, for the path construction to be finished before the ground became impassable from rain.

Annex 3 Arboriculture Method Statement

1 These notes refer to the Tree Protection Plans. These plans are based on the measured survey and the scale is shown on each of two plans at the end of this section

2 No trees will be felled as part of this project. Woodland management work has been carried out by the Waddesdon Estate over the winter and the proposed path has taken advantage of this work.

3 Loppings, where left over, will be retained on site, and used to make wildlife habitats piles. Greenways and Cycleroutes have local teams of experienced volunteers who are able to carry out this work by hand.

4 Before construction starts, retained and coppiced trees identified in the plans will be protected to prevent damage by construction vehicles. Trunks of trees adjacent to the line of construction specified in the Tree Protection Plan will be protected with loppings as in Figure 1. It will not be practicable to use rigid fencing panels with stabilisers, as these are too rigid to allow for plant to follow the sinuous line of the route.

View of tree protection fascines used on adjacent trees in Ashton Court – Listed Repton Estate.

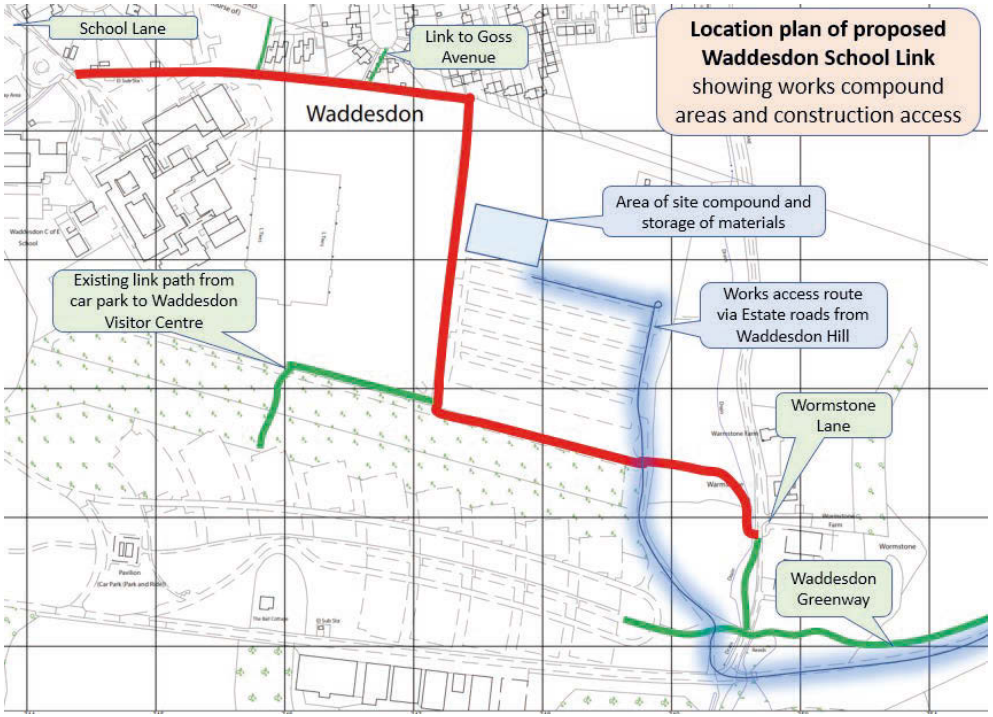
5 The project engineer will be willing to meet the Council's appointed Tree Officer prior to the start of construction: to demonstrate how the required works and tree protection measures will be implemented; to ensure that all retained trees are satisfactorily protected; and will agree with the Tree Officer the frequency of visits considered necessary.

6 There will be no plant or equipment of any sort stored on root protection areas. The contractor and volunteers parking, vehicle storage, material storage, concrete mixing and site compound will be located as shown in the site plan

7 Site Access from Waddesdon Hill via Estate roads is as in site plan

8 Construction site access will be solely along the line of the path.

9 There will be no on-site services or lighting during construction



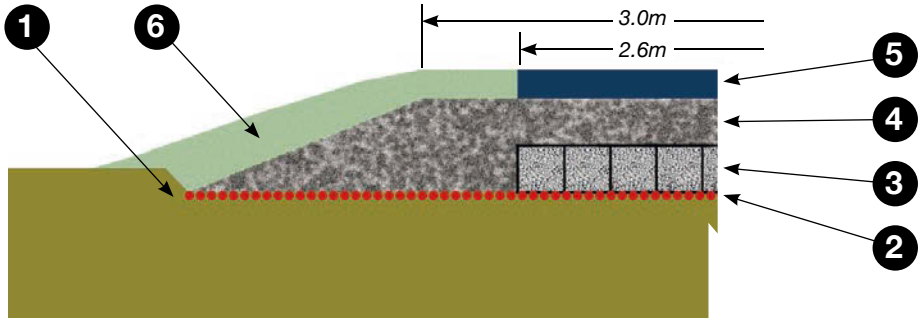
10 Contractors will be briefed by the ecologist before any construction commences.

11 The area to be cleared will be inspected for hedgehogs prior to any construction work.

12 The path will be built out working from the site compound, so that at each stage plant will be working from the already constructed route: once the first section is complete then the machine moves forward on the base layer created.

13 All materials will be stored in the area of the works compound and well away from the woodland areas

14 In the root protection areas construction will take place along a working corridor of 5m width. No plant or materials will operate outside this width, shown on the plan.



Detail of path construction through woodland areas

1 *Minimum clearance of ground just sufficient to remove tree and shrub roots. This no dig arrangement past trees anticipates an average excavation of 50 mm.*

2 *Polypropylene filter fabric 4.0m wide*

3 *'Strataweb' or similar tree protect mattress, 100mm thick, 2.6m wide with all the cells filled with single size stone, 40mm or less.*

4 *Base stone, scalpings, planings or similar 100mm thick and spreading out beyond the mattress to a top width of 3.0m*

5 *Machine laid DBM 60mm thick, 2.6m wide with a 25mm central camber.*

6 *Verge and shoulders built out level with the path using available materials.*

15 The ground will be cleared of vegetative matter, approximate 50mm deep

16 Excavated material will be set to each side of the 3.5m wide base area, for final use in constructing path shoulders. Our ecologist will be present as required.

17 Tree stumps will be carefully dug around, lateral roots sawn off and then the ball of the stump lifted away all with a view to causing minimum damage to roots of nearby trees.

Photographs showing construction through Ashton Court woods, Bristol – listed landscape

18 The construction of the path in the root protection zone is shown in the detail adopting a design free of kerbs. A section of filter fabric will be rolled out, followed by a panel of "Tree cell" or equivalent, all laid by hand. The cells will then be filled with single sized stone with material being delivered by dumper along the line of the route.

19 Finally, the verges will be brought up level with the path and seeded. If care is taken then an attractive woodland path is created as shown in this example from Ashton Estate woods where the public frequently remark on how much they like the sinuous nature of the way through the wood, whilst at the same time the sense of security that they are not wholly cut off from sight.

Ongoing management of trees should be designed to see that they thrive. Densely planted coppices will need thinning. Coppiced trees will require regular care. And where there is the possibility of views over the adjacent landscape the trees need to be cleared of surrounding vegetation to allow views out between trunks. Individual avenue trees, as for example along the car park, will be watered each summer until they are established.

Tree management plan of the edge of the pine woods and the short crossing of Wormstone wood