The Waddesdon Greenway Project

Construction Details December 2017

Waddesdon to Aylesbury Vale Parkway Station following the course of Akeman Street

Greenways and Cycleroutes Limited
The Wool Hall
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This is a Greenways and Cycleroutes Limited Project. The Project Engineer is John Grimshaw – John@johngrimshaw.co.uk. Tenders will be administered and contracts let by Buckinghamshire County Council – Jack Mayhew- jamayhew@buckscc.gov.uk.

Start date on site March 1st 2018 ground conditions permitting. Completion May 2018. Note that advance works by others will include clearance of all vegetation before mid-February, and excavation to be supervised by archaeologist by end of February. Note that seats, pavilions, marker posts and other aesthetic details will be constructed by a volunteer work camp in May 2018. The exact date of the formal opening is June will depend upon the Minister’s diary.
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.

We propose an 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.

This document is based upon the planning application document, but contains detailed cross sections, arrangements of crossings and proposals for seating. These last are of particular importance given that the walk from the station to National Trust Car Park and bus is 2½ miles, and with Stoke Mandeville not far away a larger than usual number of people in wheelchairs and other access bikes may be expected on this route.

The separate elements of the route are as follows:

1. Drive to Waddesdon Manor
2. Existing and planned links to the village in order that the Greenway 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 Vale Parkway Station, and the Ruby Way Cycle Route to the town centre itself.
Examples from proposed Leamington & Kenilworth Link

1. Target standard of promenade
   - Plant avenue trees
   - Main road or adjacent development

4. Chainage 780m: Section opposite Hill Wooton Road junction where there is a wide bank of Highway Land
   - Excellent mature trees
   - Path to be constructed on "no-guard" mesh or similar under mature trees

    - Reposition existing boundary fence

Stoke Mandeville Hospital is the national centre for the recovery from spinal injuries. Providing wheelchairs, handcycles and other specialised "bicycles" is a vital part of the rehabilitation programme to provide an independence of travel and means of maintaining fitness for patients. Currently the Stoke Mandeville Arena is the principal traffic free opportunity although trips are arranged to the Phoenix Trail at Thame and elsewhere.

The Access for All routes shown here will vastly extend the resource of the National Spinal Injuries Unit and will enhance the position of the Unit and Aylesbury in this field, not only in Britain, but world-wide.

The construction of the HS2 Railway, with its attendant provisions, coupled with the considerable amount of new development planned for the area provides the Spinal Injuries Unit with a not to be missed opportunity. The circuit shown here could create an 11 mile route starting and ending at the Arena, and an 8 mile greenway to the National Trust car park for Waddesdon Park and Manor.

The sketches here show the standard which these Access for All routes aspire to. In particular, sections developed as part of new roads should be well set back from the highway to allow for an attractive and stress free experience; the path should be 3.5m wide through the urban areas to allow for comfortable shared use; the surface should be machine laid asphalt for smoothness set with a central camber to cater for wheelchairs and trikes; there should be complete continuity and priority at all junctions; gradients should never exceed 1:20 and preferably less in this generally level area; and there should be a complete absence of barriers which could hinder the patients' progress.
1. Pedestrian spine path serving carpark leads to the proposed route to Aylesbury Parkway Station.

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

3. Construct a 2.5m wide board walk over the pond here as a continuation of the spine walkway. Design to be confirmed - see Appendix 1.

4. Provide a zebra or raised pavement crossing of the carpark road or similar (road crossing R1), and cut a defile through the low bank to reach the start of the Greenway - see section 1. this defile will be curved in plan in order to give a smooth approach to the bridge over the pond and National Trust path. The depth of cut is 1m at the pond end and 2m at the estate track end.

5. The path to follow around the eaves of the wood either beside, or on the carpark standby track. Consider concrete crossing (R2).

6. Construct a short section of new path through the edge of the wood, in order to bypass the farmyard area. This link path to be 2.0m wide.

7. Cross the ditch on the existing culverted former field access track, cross the farm road (R3) and select a suitable alignment for the path to give a good view of the pond.

8. 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.

9. Clear up pond and make seat S1 overlooking pond. Emerge from the wood to follow the wide grass swathe on the north side of the Grand Drive. This area was part of the original deer park and any planting should be sympathetic. Note that there are a number of landscape designs which could be included in the overall concept of the Greenway including, formal avenue tree planting, copses 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 Waddesdon Greenway matures into its surroundings. The arrangement of planting to be agreed at a later date.

A0: Preconstruction cross section for archaeology

A: Standard new construction

B: Tree root protection - if required

### Note
- It is not intended to light this path, but photo-voltaic solar studs could be glued to the surface at intervals to define the edges of the path if this was required.

### Excavated material placed on banks either side for use in making the shoulders and verges to the finished path. Note that in certain locations it may be necessary to keep the stockpile to one side of the path only.

### Prior to the construction of the main path, the ground will be stripped off an average of just 100mm to leave a clear level bed for the actual path construction. This will be inspected by the project archaeologist and any visible points of interest recorded before construction commences.

### Path construction to comprise 250mm thick layer of compacted stone, or recycled materials, laid on Tensar TX170 Geogrid, and finished with a machine laid bitmac section 60mm thick, 3m wide.
Proposals for Waddesdon Greenway from Waddesdon to Aylesbury Vale Parkway Station following the course of Akeman Street

Map 1. Waddesdon

Section 1: Car park mound

- Excavate gently sloping ramp from back of National Trust circulation road. Excavation to be 3.5m wide at path level
- Construct path, 3m wide with central camber and gradient not exceeding 1:20
- Grass verges 500mm wide, mown regularly to match regime on paths in carpark
- Material from excavation used to raise the height of the mound either side so as to make this a little more of a feature

Section 2: Through Wormstone Wood

- Wind path through wood as convenient route to be agreed on site. Avoid removing any mature trees, and aim to run at least 1m clear of trunks
- Construction should be minimum dig (100mm) with extra thick stone base (300mm) and extra asphalt (100mm) in order to resist any damage from future root growth
- Path to run centrally between the two lines of existing trees (18m apart)

Section 3: The Grand Avenue

- Path passes close to second mature chestnut, set 1.5m from edge of path
- Path now enters open glade in the centre of the woodland. Clear a few small scraggly bushes and trees (b)

Schedule of small trees to be cleared.
- All diameters at chest height
  - a. Horse chestnut 200mm, sycamore 150, dead sycamore 100, sycamore 150, dead sycamore 200
  - b. Scraggly yews 200 and 250, 2 sycamores 100, and some elders
  - c. Sycamore 100, and 3 fallen elders

Links to Waddesdon
- Retain large chestnut (ref 1105) 900mm diameter. This will be 1.5m to the north of the edge of the path
- Cross concrete farm road by continuing tarmac across existing concrete to give a smooth passage
- Clear small trees (a) in this area, and prune back box shrubs so that they can flourish with more light
- Clear sides of pond and place seat to have good views
- Path to pass through

Schedule of small trees to be cleared.
- 0               10              20

Metroplis Map Production

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Map 2. The Greenway along Akeman Street

The proposed route joins the line of Akeman Street halfway along the Farm Drive. There is no visible sign 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 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 Archaeological Study (appendix 2) provides preliminary assessment of the whole corridor and its recommendations are to be adopted for this project. In particular, any planting will be set back from any suspected historical remains which may be found following trial trenching at intervals under the supervision of an archaeologist. Plans show photographs of trenching to show the soils along the route.

13. **S2** - Position sleeper seat on line of Akeman Street to command the view towards Aylesbury.

14. **C4** - Provide a raised crossing or similar of the main farm road and mark this crossing carefully as it is the point where the Waddesdon Greenway joins the course of Akeman Street.

15. Cut carefully through the existing tree belt to make a gap on the line of Akeman Street. Plant the isolated corner of Thistle Ditch Field as wild flower meadow

At the Upper Winchendon Road end the line follows a convenient gap in the roadside tree belt.

16. Here, and elsewhere along the route, culverts, ditches and field drains will be required to maintain the current arrangements where the path might disturb them. Appendix B sets out the Ecological Study and this project adopts its recommendations.

17. **R5** - The crossing of Upper Winchendon Road has good visibility at this point. Provide a chicane either side to slow down cyclists, and the Highway Authority to install appropriate warning signs on the road. Note that this is the only public road crossing on what is otherwise an almost traffic free route. Provide new culverts at ditches either side of the road.

18. Run along the line of the roman road. It is proposed that existing public footpaths, running along this corridor but not exactly following the line of roman road, are diverted onto the Greenway, but not until the new path is well established and the public used to following it.

19. Provide a concrete farm crossing at a convenient point as the Greenway cuts right across the centre of this field (R6).
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 2. The Parkway Avenue along Akeman Street**

**Section 4: Thistle Ditch Field**

Balance of field (0.3ha) to be treated as a wildflower area with the maximum amount of colour and interest.

- Path to follow alignment of roman road.
- Standard construction with cambered surface 200mm above general ground level.
- Maintain a 500 wide verge mown, and the remainder of the margin sow with wildflower and grass mix and cut after seed has set.
- Arable Thistle Ditch Field.

**Section 5: Southams Field, which the path crosses on the line of the Roman Road**

- Standard construction finished 200mm above general field level. This will ensure that any peak run off seeps through under the path.
- Mow 500 wide verge.
- Grass margin sown with wildflower and grass mix and mown after seed has set.
- Southams Field.
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. Such an arrangement helps with the informal surveillance and overall security of the route. Install seat S4.

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. Provide field crossing R7.

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. Continue Greenway on line shown in order to minimise the area of the Speeds Grass Field cut off. Provide stockproof fence all along north side.

25. Isolated area to be treated as a new field albeit only 2 acres in size, and perhaps deliberately used for crops of interest to the public – e.g. pumpkins.

26. The precise line of the path across the fields to be agreed with Waddesdon Estate. Note Greenways reserves the right to make detailed revisions to the alignment all through this project, should circumstances of land owners require a deviation from the route shown in this document.

27. Cross these last two fields on the line of the roman road. Provide farm crossings R8 and R9 for each field.

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

**S3: Southams Seat** looking back down the Roman Road

This seat marks the eastern end of the 770m long section of Akeman Street stretching down from the Grand Drive. The land is flat here so the seat needs to be raised on a low (1.5m high) mound to have a commanding view back down the path. At the same time one could look southwards from this seat along the bridleway towards Southams Bank.

*Limit of Greenways Leased Land*

*Waddesdon Greenway on line of Roman Road towards Waddesdon*

*Path moves a little to the south to run along the edge of Hillside*

*Path crosses existing ditch with 450m dia culvert with sand-bag head walls*

*Existing bridleway*

*Footpath WAD/7A/3 will remain for the time being*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Limit of Greenways Leased Land 2*

Section 9: Cranwell Speeds

Here the path continues to follow the line of the Roman road.

*Standard path 200 above general ground level*

*Great Speeds Field to be affected by HS2*

*Area of Great Speeds Field to be affected by HS2*

*2m wide grass margins*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Existing bridleway*

*Footpath WAD/7A/3 will remain for the time being*

*Limit of Greenways Leased Land 2*

*Waddesdon Greenway on line of Roman Road towards Waddesdon*

*Path moves a little to the south to run along the edge of Hillside*

*Path crosses existing ditch with 450m dia culvert with sand-bag head walls*

*Existing bridleway*

*Footpath WAD/7A/3 will remain for the time being*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Limit of Greenways Leased Land 2*

Section 9: Cranwell Speeds

Here the path continues to follow the line of the Roman road.

*Standard path 200 above general ground level*

*Great Speeds Field to be affected by HS2*

*Area of Great Speeds Field to be affected by HS2*

*2m wide grass margins*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Existing bridleway*

*Footpath WAD/7A/3 will remain for the time being*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Limit of Greenways Leased Land 2*

Section 9: Cranwell Speeds

Here the path continues to follow the line of the Roman road.

*Standard path 200 above general ground level*

*Great Speeds Field to be affected by HS2*

*Area of Great Speeds Field to be affected by HS2*

*2m wide grass margins*

*Shallow ramp constructed from surplus material leading up to small platform 1.5m above ground. Path to be 1m wide ending in front of the sleeper seat all in gravel*

*Existing bridleway*

*Footpath WAD/7A/3 will remain for the time being*
Over this section the Greenway will follow the line of the existing bridleway as it crosses HS2 lands. Once the new railway is built this bridleway is to be diverted via a new bridge some 400metres to the north. The Greenway will divert to this new route alignment, all as shown on the plan.

Whilst the bridleway on the northeast side of the new bridge follows the direct desire line towards Aylesbury Vale Parkway Station, the ramp on the south west does not. The plan shows an additional ramp aiming for Waddesdon which we hope will come to be built at the time of the construction of the HS2 line. For this reason this ramp is shown as part of the planning application and our agreements with the landowners have included for this ramp.

Section 10: West approach ramp to Waddesdon Bridge over HS2

Over this section the Greenway will follow the line of the existing bridleway as it crosses HS2 lands. Once the new railway is built this bridleway is to be diverted via a new bridge some 400metres to the north. The Greenway will divert to this new route alignment, all as shown on the plan.

Section 11: Along the edge of Great Speeds Field

For the time being the Waddesdon Greenway will run along the field edge for some 400 metres. The line shown here will be just outside the boundary of the future HS2 works. Once the Greenway is diverted over the new Waddesdon Bridge, then the path shown here will remain as the route of the public bridleway.

1m wide verge to be kept mown whilst route functions as Waddesdon Greenway

3m wide path constructed of compacted stone and finished with fine stone dust on account of its interim nature

Existing field boundary fence, hedgerow and trees

Clear out existing ditch

2m

The approach ramp will have a gradient not exceeding 1:20 to a height of nearly 10m about field level. In this sketch the side slopes are shown at 1:2

Temporary fence erected by HS2 contractors prior to the start of their construction of the approach ramp to the Rail Bridge

3m wide path

During its time as the Greenway route to Aylesbury Vale Parkway Station these verges will be kept mown for a metre width either side. Later when this path becomes the bridleway route the verge on this side will be managed as part of the Estate’s set aside margins for wildlife

Andable crops in Great Speeds Field

Waddesdon Greenway to be constructed Spring 2018

Proposals for a Waddesdon Greenway from Waddesdon to Aylesbury Vale Parkway Station following the course of Akeman Street

30. This arrangement of a ramp route provides the direct route to Waddesdon and Waddesdon House.

30a This path and ramp is not required as the footpath is to be diverted (see diversion box).

31. HS2 has provided for the existing bridleway to be diverted via these two ramps (A-B). These routes are shown as being 200 long from the bridge abutments which would be sufficient to achieve the 1:20 required for cyclists and wheelchair users from Stoke Mandeville.

32. The HS2 bridleway bridge will be suitable for cyclists.

33. The interim route of the Greenway will follow this alignment and will be finished to a stone dust surface (rather than asphalt) in anticipation of its eventual rerouting via the new bridge.

33a This section will be abandoned once the railway is constructed.

33b runs just outside the line of the HS2 works. The permanent rerouting of Bridleway WA/B3 is to be just a few metres to the east of this and it may be possible to construct this section of the Greenway’s interim route on this final alignment which would save the necessity of HS2 doing any further work here.

34. This section of the field edge bridleway is on the permanent alignment of the Greenway route and will be constructed to the full standard from the start. Depending upon the future plans of the neighbouring landowner it may be possible to eventually put this section on the line of the roman road.

35. At this point the route joins the now abandoned section of the old main road where no construction work is required. Install seat S7 here.

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Map 4. Details at the intersection with the line of HS2 at Waddesdon Bridleway FMA/1/1

Note: this planning application includes the proposed HS2 accommodation bridge and its approach ramps which should be designed to be suitable for cyclists and those in wheelchairs with a 1:21 gradient and a smooth sealed surface 3m wide.
Map 5.

As the final section of the Roman Road cuts across fields and passes through residential gardens it would 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.

37. Once past the last house in Putlowes Drive, cut across the wide verge, culvert the ditch and move into New College's field.

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 12m would be sufficient as the downstream culverts under the main road are not large. Note that the level of the bridge should be the same as the adjacent road, and the path should approach on low causeways to ensure that it is dry and above possible flood water - see pages 16 and 17 for details. The bridge will be seated on low concrete abutments each founded on a triangle of three piles.

40. Turn the Greenway 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 Vale Parkway Station. Although it is not large, it is sufficient, and its floor could 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 Greenway, through future development to reach the Thame Valley.

A: Cross section either side of the river bridge where the path is built up to the level of the adjacent road

B: Cross section through path away from the flood plain showing the excavated area to provide flood plain compensation

The Waddesdon Parkway Avenue avoids the A41 completely

View of typical small bridge

Double field fence planted with a central hedge. This arrangement is required so as to ensure that the field boundary is doubly secure against livestock straying into the main road

Low causeway constructed from local materials won from flood plain compensation area. Finished off with mixture of wild grasses and flower seed

Existing fence removed, and the ditch cleaned out and widened

Existing ditch

Plant up the wide verge to create a dense noise barrier against the traffic as possible.

Excavate beside the path to provide compensation, level for level, by volume and by area, for the Zone 2 and Zone 3 part of the flood plain taken up by the low causeways either side of the river bridge. The floor of the compensation areas could be planted as a wet or damp area with appropriate plants.
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Detail arrangement of the Aylesbury Vale Station area and link to the existing cycling routes

1. Network Rail have a very basic works access to their tracks at this point. It would create more space for making a good piece of work to the subway if this track was shifted a little to the north of the subway along the line, if this is possible.

2. The existing accommodation bridge under the line makes for a convenient start for the route to Waddesdon, and also a possible connection under the tracks to a future platform. For this reason it would be useful to make up the subway works to a standard suitable for this dual use, if this is possible. Fence both sides of the public space to match existing security fencing. See page 16 for details.

3. Possible area for Network Rail works vehicles and access to the track.

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. Remove four existing car parking spaces and keep the way across the works access track clear as at present.

7. Consider possible locations for a small bike hire center as this will be required as the route grows in popularity.

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 cycle route to the centre of Aylesbury.

12. Existing station buildings.
Fleet Marston Causeways

Cross section through path and causeway with volumes of fill by level

Cross section through path and compensation area with volumes of flood compensation by level

- 18m from boundary fence
- 4.0m Path level 72.0m AOD
- 3.0m

- 1.5m
- Invert of culvert to be bedded on sound materials and set a little below ground level in order to ensure the necessary minimum cover over the top of the culvert
- Twin wall PVC culvert set to give a minimum cover of 250mm below top of path surface. Culvert to be 600mm diameter inside and 6 meters long
- Sandbag head walls to grass over
- Edges of sealed surface to be 1.5m from end of culvert and verge grassed
- Ground falls towards river
- Ditch falls from 72.0 - 70.9

- 12m span bridge 2.5m wide truss design with soffit level 72.0m AOD
- 600 dia culverts with sandbag headwalls
- 3m wide path

- 1.5m
- 7.1.2 7.1.4 7.1.6 7.1.8 7.2.0 7.2.2 7.2.4 7.2.6 7.2.8 7.3.0

- Up to 1.0m high causeway 8m wide at base, 7.2m AOD path level
- 600 dia culverts with sandbag headwalls
- 3m wide path

- Flood compensation area

- Path level 72.0m AOD

- Newmarket Road

- Aylesbury Vale Parkway Station

- 700m³

- 71.8 180
- 71.6 180
- 71.4 180
- 71.2 187

- 0 10 20 30 40 50 60 70 80 90 100 scale (m)

- 72.0 71.8 71.6 71.4 71.2 71.0 70.8 70.6 70.4 70.2 70.0

- 72.0 71.8 71.6 71.4 71.2 71.0 70.8 70.6 70.4 70.2 70.0

- 314
- 250
- 200
- 159

- 944m³
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Waddesdon Parkway Scheme

Cross section through proposed Fleet Marston Brook Bridge showing options

Steel beam bridge manufactured by CTS. This type of bridge can be delivered to site in kit form.

Standard Warren Truss steel footbridge 2.5m wide. The soffit level to be set at the 100 year flood level - 72.0m AOD.

Path level at bridge (72.2m) to fall away at 1:20 to the main causeway level of 72.0m AOD and then to continue at this level until higher ground is reached.

The bank profile of the Fleet Marston Brook is very irregular but this profile may be taken as an average in this area.

Alternative bridge abutment to comprise gabions capped with reinforced concrete bearing pad. Alternative bridge abutment to comprise gabions capped with reinforced concrete bearing pad.

Bearings to be concrete plinth on needle pile foundations.

Path level at bridge (72.2m) to fall away at 1:20 to the main causeway level of 72.0m AOD and then to continue at this level until higher ground is reached.

View of steel beam bridge manufactured by CTS

View of Brook looking downstream to the proposed bridge site with the line of the proposed bridge crossing over approximately 1.0m above bank top.

December 2017
Road crossings
Schedule of Provision

R1. National Trust Car Park circulatory road. Paint "zebra" crossing stripes on this private road to indicate the presence of, and priority for, pedestrians and cyclists.

R2. Estate access track made from compacted road planings. Cut out and place concrete slab, 3m wide over width of road (4m).

R3. Existing concrete farm access road. Run bitmac path flush either side and leave rougher concrete surface to remind users that there maybe occasional traffic.

R4. Crossing of Grand Avenue. Install chicanes on path either side to slow cyclists down. Paint "zebra" crossing markers on road to advise farm traffic of public.

R5. Upper Winchendan Road. Bucks County Council to provide details.

R6. Concrete field access crossing 4mx4m.

R7. Farm access crossing, 4m along length of path and 8m wide to existing boundary gate.

R8. Concrete farm access road. Cut hedge back for 5m in either direction to improve visibility, add slow down chicanes to the path and paint zebra stripes on road surface.

R9. Field access, 4mx4m concrete slab.

R10. Old main road. Discuss with contractor best way of removing the severe camber over the first section, probably by extending the new road surface for a further 50m.

R11. Give way on path and advance warning signs on road to indicate walkers and cyclists joining.

Note: Public footpath and bridleway crossings. No special provision is required for these as none are cut off by new fencing. It is anticipated that footpaths along the Waddesdon Greenway corridor will fall into disuse and eventually be formally diverted onto the new route.

Field Crossing of Arable Land where no gates are needed
The crossing is hardended off with a reinforced concrete slab laid to careful falls to shed clear mud and slurry.

Concrete crossing 4m long and 5m wide from 200mm thick concrete with steel reinforcing mesh on sound stone base. Surface to be laid to falls either way with a surface finished brushed off transverse to the path direction.

Warning signs
"Farm Vehicles Crossing"

Crossings of trafficked Roads
Chicanes set 3m back (or as appropriate for the situation). Chicanes to be set 3m apart and either side of centre line. Each should be made from a single 75mm dia tube with radiussed bends, 600mm high from the ground and painted bright white

Waddesdon Greenway approach set 200mm above the general ground level

Field crossing on livestock land:
Hillside to Corale
Here a similar concrete slab is to be used, but gates are required. These should be arranged so that they can be closed off across the path if livestock is taken from field to field. The public will need to wait until they are reopened. If livestock are required to graze freely between the fields then a cattle grid and wicket gate will be required on the path either side of the farm crossing.

Concrete slab 4m wide and 6m wide laid

Existing ditch

3.5m wide steel farm gates arranged to swing to close of path for livestock movements
### Schedule of sections of routes and distances

<table>
<thead>
<tr>
<th>Distance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5 0-20</td>
<td>Boardwalk over pond</td>
</tr>
<tr>
<td>C5 20-100</td>
<td>Cross NT road and cut through bank to wood (0.06ha)</td>
</tr>
<tr>
<td>C5 100-210</td>
<td>Wind through Wormstone Wood (0.06ha)</td>
</tr>
<tr>
<td>C5 210-620</td>
<td>Grand Avenue (Mill Hill). Estate to replant trees? (0.17ha)</td>
</tr>
<tr>
<td>C5 620-890</td>
<td>Thistle Ditch on line of Roman road, cross Upper Winchendon Road. Plant corner with trees (0.18ha) [0.2ha land for woodland]</td>
</tr>
<tr>
<td>C5 890-1390</td>
<td>Southams, open avenue, no fences, one field crossing (0.45ha)</td>
</tr>
<tr>
<td>C5 1390-1770</td>
<td>Hillside, ditch and livestock fence, one field crossing (0.30ha)</td>
</tr>
<tr>
<td>C5 1770-1980</td>
<td>Divert away from Roman road to reduce land cut off. Plant Speeds Grass as community orchard for Spinal Injuries Centre [0.6ha land take]. Raise levels of Robin's Ground for viewing seats (0.2ha) [0.1ha land take]</td>
</tr>
<tr>
<td>C5 1980-2260</td>
<td>Cranwell Speeds, open areas, one field crossing (0.25ha)</td>
</tr>
<tr>
<td>C5 2260-2640</td>
<td>Great Speeds, open path, (1.8ha cut off until HS2 then most lost). Abandon cut off triangle in the interim (0.30ha)</td>
</tr>
</tbody>
</table>

- **Length of path**: 2640m
- **Length of fencing**: 590m (no fencing on arable)
- **Length of ditching**: 380m
- **Number of farms**: 3 No
- **Number of road crossings**: 6 No
- **Number of identified seat locations**: 8 No

### Schedule of culverts

- **C1. Existing farm crossing, 900mm.** No works required. However, balustrades needed for headwalls 5m long to match the line of the path.
- **C2. At bottom of Thistle Ditch.** Provide 450 dia, 6m long to drain low area if necessary.
- **C3. Existing ditch east of Upper Winchenden Road.** Provide 600 dia, 6m long. All culverts to be finished with sandbag head walls.
- **C4. Existing boundary ditch.** Provide 600 dia, 6m long.
- **C5. Provide 450 dia culvert, 6m long in new ditch to be cut beside path.** Note farm access concrete slab to be cast over this.
- **C6. 600mm culvert, 6m long in existing field ditch.**
- **C7. 600mm culvert, 6m long in existing field ditch.**
- **C8. 600mm culvert, 6m long in existing field ditch.**

### Schedule of Seats

**Note 1.** This list is provisional.

**Note 2.** Two or three of these seats may be designed as small pavilions to provide shelter.

**S1. Sleeper bench overlooking pond**
- This seat should be set beneath one of the larger trees and looking south over the pond for sunlight and warmth. Provide a narrow stone path from the front of the bench to join the main Parkway Avenue.

**S2. Mill Hill seat to mark line of Akeman Street**
- This seat should be set back from the path and positioned exactly on the line of the Roman road. At this point the land is slightly raised, so the bench will have a good view of the path stretching away towards Aylesbury.

**S3. Thistle Ditch bench**
- Set north of the path overlooking the pond and the field. This bench should be set between two of the newly planted trees about 2m back from the path.

**S4. Southams Seat looking back down the Roman Road**
- This seat marks the eastern end of the 770m long section of Akeman Street stretching down from the Grand Drive. The land is flat here so the seat needs to be raised on a low (1.5m high) mound to have a commanding view back down the path. At the same time one could look southwards from this seat along the bridleway towards Southams Bank.

**S5. Robin's Ground Seats**
- ...to give views over the countryside and to mark the start of the second section of Akeman Street, 650m long. This southern corner of Robin's Ground will be raised by upto 1m to accommodate any surplus materials from path construction. This will make for a good picnic spot with views to the south, and the location for a sleeper seat looking along the line of the path.

**S6. HS2 bench on line of Akeman Street**
- We will ask HS2 to make a flight if steps on the line of Akeman Street with a bench near the top of the sound bank to give a view back towards Waddesdon.

### 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 Ashwell. 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 Acemanneseceastr (Acemannes apparently being derived from the Roman name Aquea 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.
Proposals for a Waddesdon Greenway from Waddesdon to Aylesbury Vale Parkway Station following the course of Akeman Street | Page 20

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 Waddesdon Greenway, 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 Greenway 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 Greenway 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.

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 Waddesdon Greenway 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

The core component of the construction of the Waddesdon Greenway is building 4kms of path to the best possible standard. The contractor should plan to work within the corridor of the path as no access alongside in adjacent field has been agreed with the landowner. Most of the way in unfenced, except over the two fields where advance works are to be carried out under archaeological supervision. It is anticipated that the works will be divided into 4 components as follows:

1. Advance works by local contractors starting January 2018. These comprise:
   1.1. Clearance of all vegetation and felling of trees prior to the main bird nesting season. Note that the removal of stumps will not be carried out in this contract but by the main path building contract.
   1.2. Excavation under archaeological supervision of the Hillside ditch and the flood compensation area by the Fleet Marsden Brook. This second advance work may be delayed to the start of the main contract if ground conditions do not permit earlier work.

2. All works in Network Rail land including fencing, repointing of brickwork and surfacing through the subway area will be carried out by Network Rail nominated contractors starting early in the New Year to be complete by April 30th. Note Greenway reserves the option for our main path contractor to include the surfacing only in our main works.

3. The path contract will go out to tenders by mid-December 2017 with tenders returned by the end of January 2018. The contract will be awarded by mid-February 2018 to start on site March 5th weather and ground conditions permitting.

This main contract will comprise all the works associated with the path construction including limited earthworks, culverting, path laying, finishing, verges, farm and public road crossings, and whatever fencing and gating has not been carried out in advance works. In the vicinity of the Fleet Marsden Brook, the main contractor will complete the approach ramps started by the archaeological contractor, construct the bridge abutments, take delivery of the bridge components and erect the two beams only. Similarly, at the National Trust Carpark Pond Bridge.

The contract length is 12 weeks and the target date for completion is May 24th before the Spring Bank Holiday.

Should wet weather prevail and the ground condition become unsuitable, the contractors should allow for one period of stoppage agreed with the Engineer until conditions improve, even if this means overlooking the target date for completion of the path.

Prior to the start of the path construction it has been agreed with County Archaeologist that the entire length of the path will be stripped 100mm deep in order to allow an archaeological inspection. The successful contractor should be able to supply a machine to site within one week of award of the contractor in order to carry out these advance works.

Greenways will hold their annual volunteer work camp at Waddesdon in May 2018. They will install, amongst other matters, the bridge decking and parapets, the entrance gateways, seating and shelters and ceremonial marking posts along the line of the Roman Road. The main contractor will be expected to provide a small amount of support where this is appropriate or necessary.
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.

- **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.
The planned Waddesdon Parkway route for walkers and cyclist's links directly to Aylesbury Vale Parkway Station via the remaining cattle arch, bridge No. 174.

The proposed works comprise new palisade security fences running from the face of the bridge to the boundary fence on both sides, lowering the existing dirt floor by between 120 and 200mm to provide a concrete slab deck at this level for the public to use, and a certain amount of repair work to the generally sound brickwork by way of repointing as required by Networks Rail's engineers.

Fig.1 Extract from project report showing the approach of the path from Waddesdon to the bridge.
Fig 2. Original details of Bridge 174
Plan of approach to station

To Waddesdon

3.0m

The proposed fencing works are shown here.

Fig 3 the security fencing. This will be steel palisade fencing, 2.0m high, finished in dark green. We would have liked to continue the existing railway mesh fencing but this is more difficult to manage up the slope of the wing walls.

The fencing will tie into the carpark end as shown in the plan with a 3.0m wide opening. This should be centred on the barrel of the arch of the bridge so that the public can see straight through for security. At the face of the bridge the fencing can be bolted to the ends of the parapet.

Above the parapet it is suggested that we infill the space between the handrail and the top of the brickwork with a panel naming the station on the one side and the Waddesdon route on the other.

Works access gate

It is proposed to reposition the existing 4.5m wide works access gate 3m to the north (away from the station) as there is much more room on this side to make a ramp up to the formation level and to position storage cabins and other gear as maybe required by the railways.

1.80m Palisade fencing

Fig 3. Security fencing and Approach Ramps
Services
The only services we are aware of is the storm water drain from the platform which runs through to the sump marked on the plan, from where it is piped away to a soakaway further north. As we will not be materially altering the ground levels above this soakaway pipe we will not be affecting it.

Programme
It is proposed to erect all the security fencing before any works start on the path through the bridge or on repairs to the bridge itself because once the fencing is in place these works can be undertaken safely.

The way under the bridge
Fig 4 shows the dimensions and details of the proposed concrete slab for the public path. The site visit on 21st June (Joshua Yap, Laura Gilmore and John Grimshaw) established that the dimensions shown in the drawings are correct, and that the footings were at the levels shown here.

The average clearance from the generally level dirt floor to the crown of the arch is 1.94m. Below the dirt is a shallow layer of rounded cobbles on a sandy material, then clay sub base. We propose to take the path through the length of the arch with the minimum of disturbance to the existing ground. The loose detritus and gravel will be cleared away to a level of 2050mm from the soffit of the arch at the station end and 2150mm at the field end. The remaining gravel to be carefully levelled and compacted. A single course of permeable asphalt 50mm thick to then be laid through on this compacted surface, to give a finished headroom at the station end of 2000mm. This asphalt will need to be accurate laid to give a 1:100 longitudinal fall over the length of the tunnel. The surface should be level from side to side.

Once these levels are established the approaches either side can be put in place. The existing material between the wing walls and to the boundary fences is to be excavated to allow for a subbase of compacted stone 150mm thick finished off with permeable asphalt 50mm thick laid carefully to an even fall. On the carpark side the finished level is to be 10mm above the car park tarmac at the start of the ramp and then to run down at an even level to a point 1 metre before the cattle Arch at which point it should reach the 1:100 surface through the tunnel.

On the field side the fall will be approximately 1:50 to reach the level of the main Waddesdon Greenway. Any rainfall and run off from this small area will run into the adjacent pasture.

It is not intended to light the Waddesdon Greenway although photovoltaic studs maybe used to illuminate the centre line of the path. These will not extend through the tunnel which will have some overspill light from the station carpark.

The approach ramps
These will be constructed of compacted stone finished with asphalt as far as the beginning of the wing walls. Between the wing walls themselves the surface will be a 100mm thick concrete slab. On each side this will be taken back flush to the brickwork of the wing-walls. On the station side it will slope up at a gradient of 1:16 to the station carpark, with grass banks either side to the palisade fencing. On the field side the path will slope away at 1:50.

Notices and advice
The public will be advised of this low bridge by a pictogram on either face. There will be no other signs or attachments to the walls or face of the subway.

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**Fig 4. Cross section through accommodation bridge**

Picture showing station side viewed from the end of the platform. The existing works gates to the car park are to the left of the picture. The pile of ballast blocking the way to the cattle bridge will need to be excavated to make an even slope down to the floor at the portal.