

National Cycleway in association with HS2: Preliminary Feasibility Study

Wakefield and Bolsover: Annex B09a



Route maps and notes December 2016

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National Cycleway in association with HS2: Background and Summary of Preliminary Feasibility Study

Following the publication of the final HS2 routing in November 2016, it was necessary to look again at the whole route from Bolsover to Wakefield. The maps in this annex 9A cover this revision. However the introductory text below remains as for the earlier route documents completed in 2015.

Background to the First Stage

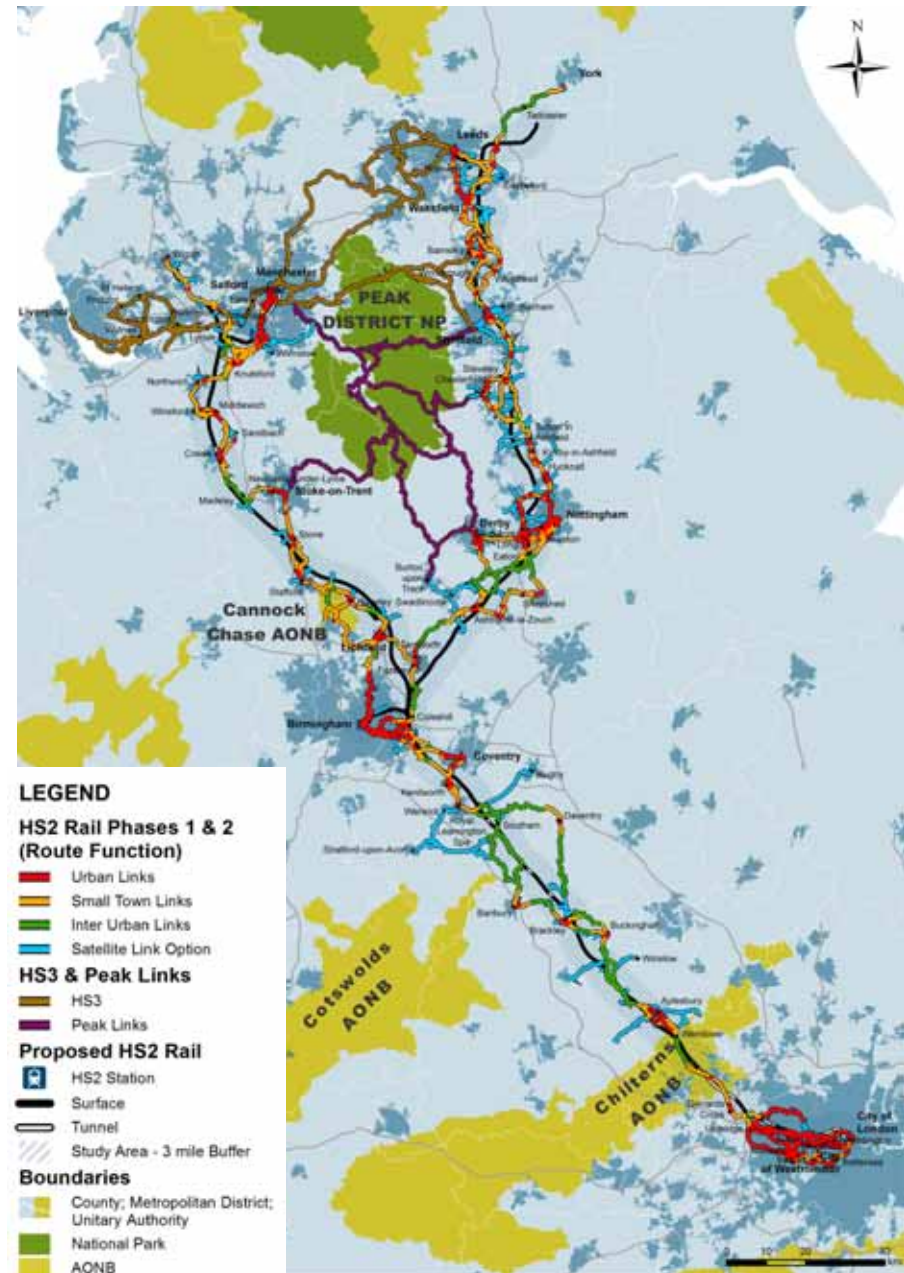
In January 2014, the Department for Transport (DfT) commissioned consultants, Royal HaskoningDHV, to carry out a Feasibility Study into creating a series of world class cycling routes from London to Birmingham, Manchester and Leeds. The project considers a study area that is generally three miles either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

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

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

The report of this first phase of work was completed in December 2014. It included a total of 19 detailed appendices, of which this is one, each of which described a section of the preliminary route options in some detail. The routes themselves were derived from discussions with local authorities and other interested bodies, backed up by cycling the routes as far as this was possible.

In order to avoid too much repetition in the text and explanation of details, a selection of photographs of appropriate arrangements and details from both the UK and the Netherlands is included here to indicate the sort of quality of route the HS2 Cycleway aspires to realise.



Second Stage

The second stage of the study was carried out during 2015. It comprised meeting with the local Highway Authorities and with the principal institutional landowners, such as Network Rail and the Canal & River Trust. Following on from these meetings, and any necessary further fieldwork, the route proposals were revised, and a series of “workbooks” prepared covering the details of how the proposed cycleway would interact with Network Rail, HS2 and others.

The original HS2 routing ran quite close to the course of the well established Trans Pennine Trail from Chesterfield to Wakefield and Leeds, and so the proposals for that section largely focussed on bringing that project up to the standard of a National Route in continuity, connectivity and standards of surface and environs.

The new alignment is well away to the east and opens out a whole series of opportunities in an area with scarcely any cycling provision or usage. These notes report on this, but one should be mindful that upgrading the Trans Pennine Trail remains a most valuable task.

Frequently Asked Questions

How will it be funded?

As the project is still in the feasibility stage, no specific funding commitments have been made; part of this study is to determine the likely costs. However, should the project be commissioned, it is envisaged that it would be funded by DfT separately to current funding packages.

How will it be delivered, practically and politically?

Part of this feasibility study is to identify potential delivery models; and we would very much appreciate your views on the most appropriate solution for your area. Should it be delivered completely from a central body or should it be delivered locally with support from a central body?

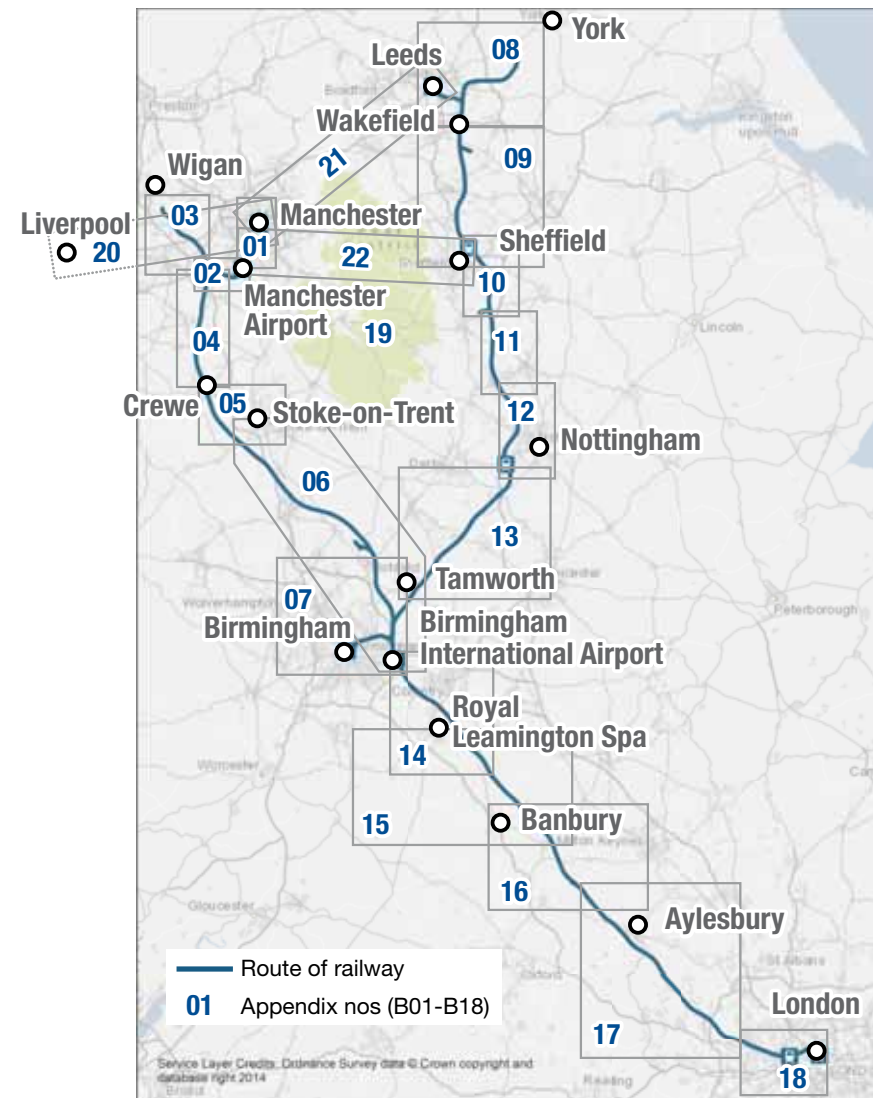
How will it affect current funding streams?

It is not expected that this project would affect current funding streams, so that this project would be in addition to existing cycle infrastructure investment. It would, though, be advantageous to badge current schemes as part of the National Cycle Route

When will it be delivered?

This feasibility study will identify a potential delivery programme based on the dialogue with local authorities. Should the project be commissioned, we expect certain sections will be able to be delivered relatively quickly whilst others may take longer. Alternatively, funding arrangements could dictate that certain sections are delivered in a particular order. The findings of the feasibility study will help inform these decisions.

Area covered by Feasibility Study Route Appendices



Design Standards - Summary

A set of design standards was developed as part of the first stage of the feasibility study. These are available as a separate document. The design standards strongly emphasise the need for continuity and integration of cycle infrastructure, and that facilities should be appealing to the end user and also consider the needs of non-users. The design standards are a working document, and will be reviewed throughout this stage of the feasibility study in order to best take into account differing local contexts.

The design standards are consistent with the project's overall aim of the National Cycleway being a domestic exemplar of what high-quality integrated modern cycling infrastructure looks like: safe, direct, coherent, comfortable and attractive. The design standards also emphasise that adaptability will be important as the UK grows its cycling mode-share.

A strong focus is on the best practice seen in places with high levels of utility cycling like the Netherlands and Denmark. Attention is also paid to inclusivity, which not only covers all potential types of cyclists – including those with mobility impairment – but accessibility for all types of other users who will interact with the infrastructure. Benefits to the wider community should also be encouraged: even if individuals do not directly use the route for transport or leisure purposes, the design should take the opportunity for place-making along the route to improve the attractiveness of town centres or other areas through which the route passes.

The default position of the design standards is that cyclists should be afforded their own dedicated space with physical separation from other users. This is an effort to move away from infrastructure strategies that default to a shared use path, or on-carriageway facilities with limited protection from motor vehicles on busy roads. The design standards, however, do allow for sharing with motor traffic, pedestrians or equestrians in certain circumstances – normally where volumes are low. Steps may nevertheless be required to engineer these conditions where they are not currently present. It is likely that many extant greenways through open space or in the countryside which are shared with pedestrians and equestrians would already be suitable for use by the National Cycleway with few changes necessary. In more built-up environments, however, the design standards promote the implementation of dedicated infrastructure for cyclists, consistent with the best practice found elsewhere in the world where cycling for everyday journeys is commonplace.

The design standards acknowledge the varied contexts of the areas through which the route is likely to pass. Quality of infrastructure should be highest where potential for the route to be used is greatest, which is in urban areas or between sizeable settlements in rural areas. However, designs should not be put forward that prevent further expansion as usage grows or new journey possibilities are created that stimulate demand for movement.



Single stage toucan crossing of dual carriageway in Aylesbury

HS2 Cycleway: A visual checklist of proposed standards

Throughout the section of HS2 Cycleway route described in these notes, it is intended that the overall route is created to the highest standards of design, of surface, of continuity and attractiveness all based on current best practice guidelines, including the Dutch CROW manual. The following examples drawn from England and Holland indicate what

is intended, even though the brief descriptive notes attached to the route section maps may not explicitly say so. The photographs are loosely arranged to run from the town to the countryside ending up with the all-important junction and crossings details. These are required at each and every intersection with trafficked roads.



0 The HS2 Cycle route will start in the traffic calmed core of the town where cyclists share the road space on equal terms with motor vehicles. (Massluis)



3 Closure of main street to traffic. (Rotterdam)



6 Where space is limited the removal of the central white line and introduction of advisory cycle provision emphasises the presence of cyclists. (Gouda)



1 Almost without exception cyclists will be permitted 2 way down one way streets in order to maximise their direct networks. (Gouda)



4 Typical English town with "pedestrianised" town centre already paved to delineate cyclists. (Stafford)



7 One lane of the road made into a two way cycling track (Redcliffe Bridge, Bristol)



2 Sympathetic treatment of main street in typical small town



5 The Embankment, London, showing the space created for the Cycle Superhighway



8 Reallocation of road space through residential development to create 2 way cycle route. (Breda)



9 Cycle track set well back from main road and separated by avenue trees. (Rotterdam)



10 Wide promenade in urban park. (Tamworth)



11 New cycle track in Warwick University grounds with lighting



12 Typical railway path, 2.5m wide rural areas, 3.0m minimum urban areas. (Derby, Melbourne)



13 Wide towpath on Calder navigation



14 Narrow 2m wide towpath on Erewash Canal; note sealed surface with appropriate coloured gravel



15 Typical National Route in rural areas on lightly trafficked road. (Boxtel to Eindhoven)



16 Typical measures to show traffic on lightly trafficked rural roads on routes advertised for cyclists



17 Quiet lane approaching Lichfield – 20mph



18 Typical minor cul-de-sac in Holland, links to ongoing path for cyclists. No motor vehicles permitted except farm vehicles



19 Similar farm access on the way to Waddesdon



22 Field boundary path with cattle grid and wicket gate approaching Kenilworth



25 Cycling zebra at Aylesbury



20 National Cyclerooute (LF) parallel to main road in rural Holland. (LF13 Alphen)



23 Single stage toucan crossing of dual carriageway in Aylesbury



26 Priority crossing of side road at Gouda



21 Stone based cycle route through National Forest near Ashby-de-la-Zouch



24 Dual use crossing of side road in Gouda



27 Path continuing parallel to main road (Gouda). Note the crossing is arranged on the desire line



28 Priority crossing in Rotterdam



31 Direct crossing in York on the desire line



34 Tank Top bridleway bridge over M1



29 Continuity of route on London Cycle Superhighway to Canary Wharf



32 Treatment of approaches to splitter island at roundabout in Aylesbury



35 Major new cycle route attached to railway bridge approaching Nijmegen



30 Direct priority crossing in Lancaster



33 New shared use bridge over railway at Aylesbury Station



36 Wide, on the level, underbridge at Tamworth

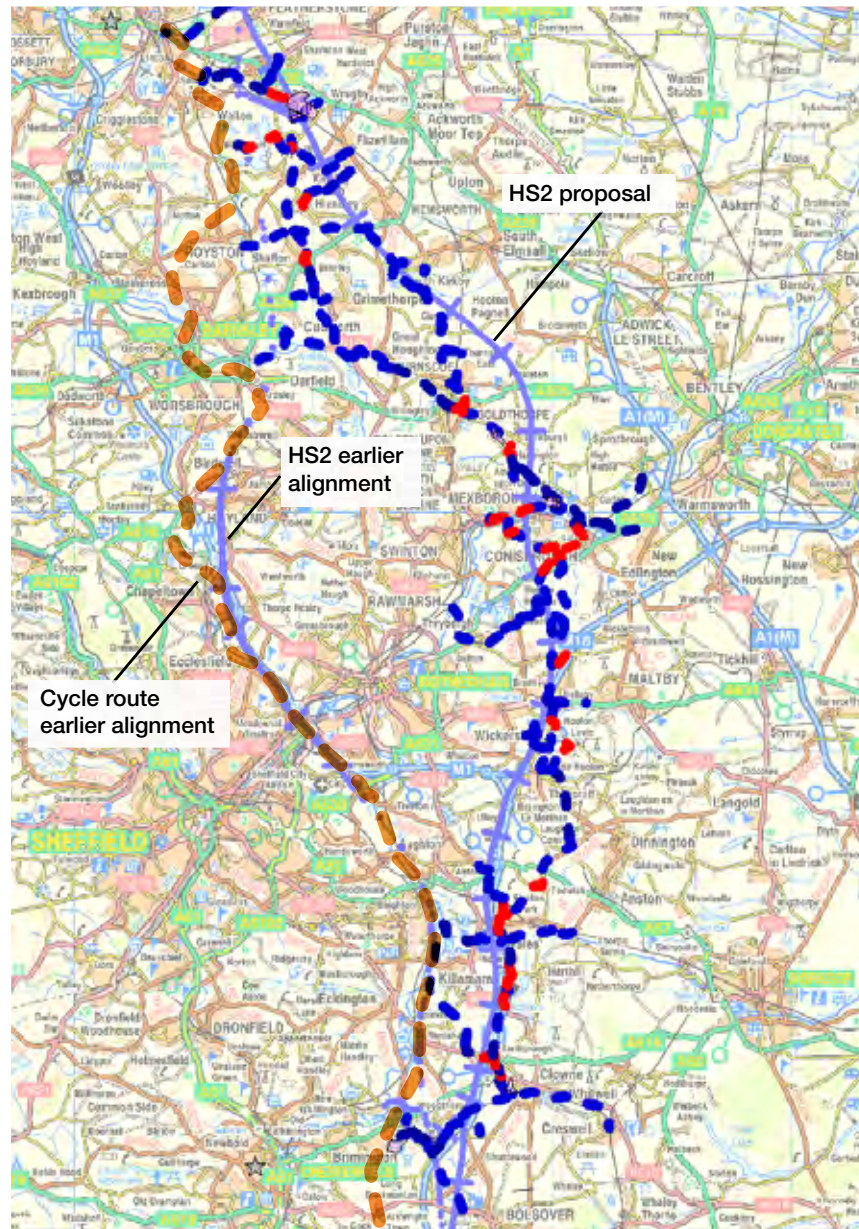
HS2 Cycleway: Summary of cycling route proposed over this section, Wakefield to Bolsover

The revised HS2 alignment offers the most interesting cycling programme, possibly of all the HS2 sections. Whereas the original alignment meant that we could focus on enhancing the existing Trans Pennine Trail, the new alignment offers a whole new territory devoid of cycling provision where we can extend and complement the TPT.

These notes propose a new route all the way which would be almost entirely free of traffic, and running on generally attractive corridors. The route is shown schematically and has just a few distinct sections:

- Wakefield to Conisbrough largely on railway formations
- The climb up to the M1 ridge, through Conisbrough via the Castle, from where a section taking advantage of the HS2 earthworks is required to ease the climb to Bramley.
- A surprisingly easy, high level route following existing paths and links all the way to Clowne
- The descent back to the valley floor at Bolsover via another railway corridor

As well as the main route some 15 cross connections between neighbouring communities are noted, including some which will be otherwise isolated by HS2. Whilst there are 4 sections where HS2 would make valuable enhancements to the overall route, most of it could be constructed over a 10-year period to a very high standard.



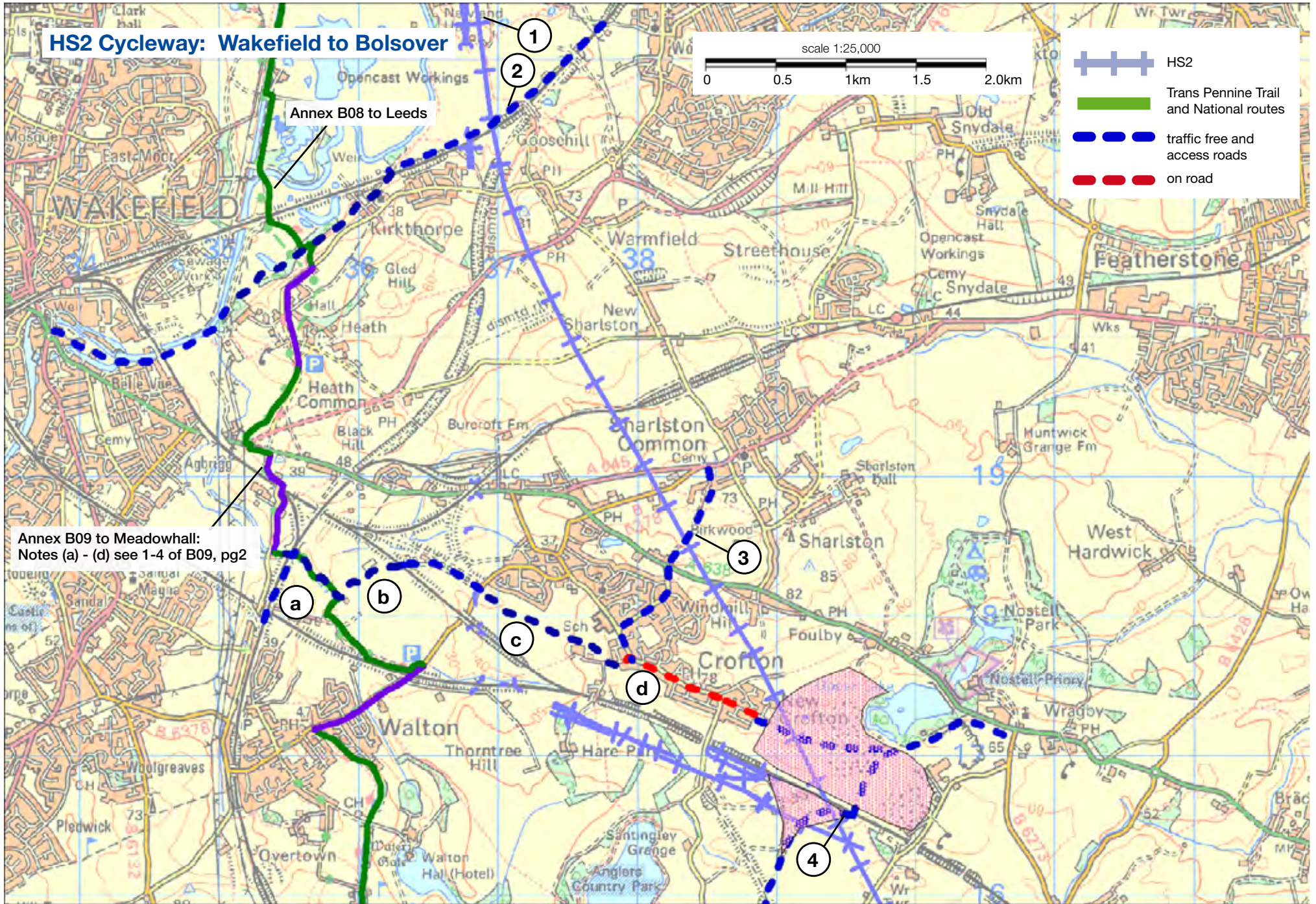
Profile from Wakefield to Bolsover

The notes on the maps refer to the earlier annexes for details of connecting routes.

- 1 The revised HS2 Rail route starts at the bridge over the Aire and Calder Canal where the towpath links to Wakefield in one direction and Castleford in the other. Options and opportunities for cycling routes between Wakefield and Leeds are discussed in Annex 8. There it was proposed a pair of routes, one via the canal with a bridge over the river to join the existing railway path to Methley Junction, and another direct option north from Wakefield and connecting to Leeds via Middleton Park.
- 2 **Normanton to Wakefield Link**
A 1.6km path along the north boundary of the Leeds/Normanton Railway would make a direct link to the existing riverside route to the centre of Wakefield.
- 3 **Sharlston Common to Crofton Link for a route to Wakefield**
The HS2 bridge over the A638 could incorporate a walking and cycling route to make a largely traffic free link. This connects to Wakefield via the Walton Country Park described in Annex 09, points a,b,c&d
- 4 **Crofton to Nostell Priory (NT) link**

Provide for existing route through reclaimed areas. This is also the northern end of a largely railway path route all the way to Conisbrough and running parallel to HS2 but linking the communities of Crofton, Havercroft, Shafton, Grimethorpe, Great Houghton, Thurnscoe, Goldthorpe and Harlington/Barnburgh. This section of cycle route would be seen as a clear benefit for all these communities bypassed by HS2.

The first detail is to accommodate the existing path under the mainline and its attractive route on an elevated embankment overlooking ponds.



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5 Both these bridges have been removed leaving steep descents to the road. In each case a new bridge is required. The surface is only stone and ash and needs renewal throughout.

6 Link to Anglers Country Park and TransPennine Trail

A field edge path (as well as ramp down from the railway) is needed to link to the road to the Visitor Centre and existing excellent Wheels of Wakefield path through Haw Park which leads to the Barnsley Canal towpath. The TPT routes via Barnsley are described in Annex 09.



6 Existing route through Haw Park

7 A crossing of B6428 is required, and also of the South Hendley Road.

8 Between Havercroft and Shafton embankments have been removed and cuttings infilled particularly through Havercroft. The corridor is continuous but work is required to ease gradients. In each case making a cutting up to 3 or 4 metres deep at the top of the infilled area, and filling the bottom of the slope should generally reach our target of 1:20 (for wheelchairs).



8 Cutting 'reclaimed' to field level and path runs on clay surface

9 Fitzwilliam to Havercroft (and link to Fitzwilliam Station)

HS2 should arrange that one of the ROW works makes for a direct route to the station, perhaps along the line shown. Note that here, and elsewhere, there are a number of public rights of way crossing the HS2 route. There will be opportunities for enhancing the most popular routes and for creating new year round connections whilst at the same time abandoning paths which are little used. All along the HS2 route we should be looking to see how we can enhance the public opportunities but at the same time reduce the liabilities of the HS2 project.

10 There are abrupt climbs on fill either end here which preclude even robust cycling. Through under the Felkirk Bridge fill up to 3m from soffit which could result in an almost level path (as the railway is dropping).

11 The embankment here was removed to provide for fill of all the cuttings to the north. Fortunately, the countryside itself grades down evenly. The clay paths here are treacherous and waterlogged so preclude the public using it all through the winter.

12 Link from Hemsworth to Royston

The western part of this could follow the line of the former railway to reach the Barnsley canal and Carlton College. The eastern half could follow the general alignment of the railway and footpath.

13 Over this section where the railway runs in a deep cutting the "path" is beaten out along the top of the bank which does have the advantage of views.



13 Path runs along field edge to avoid deep cutting

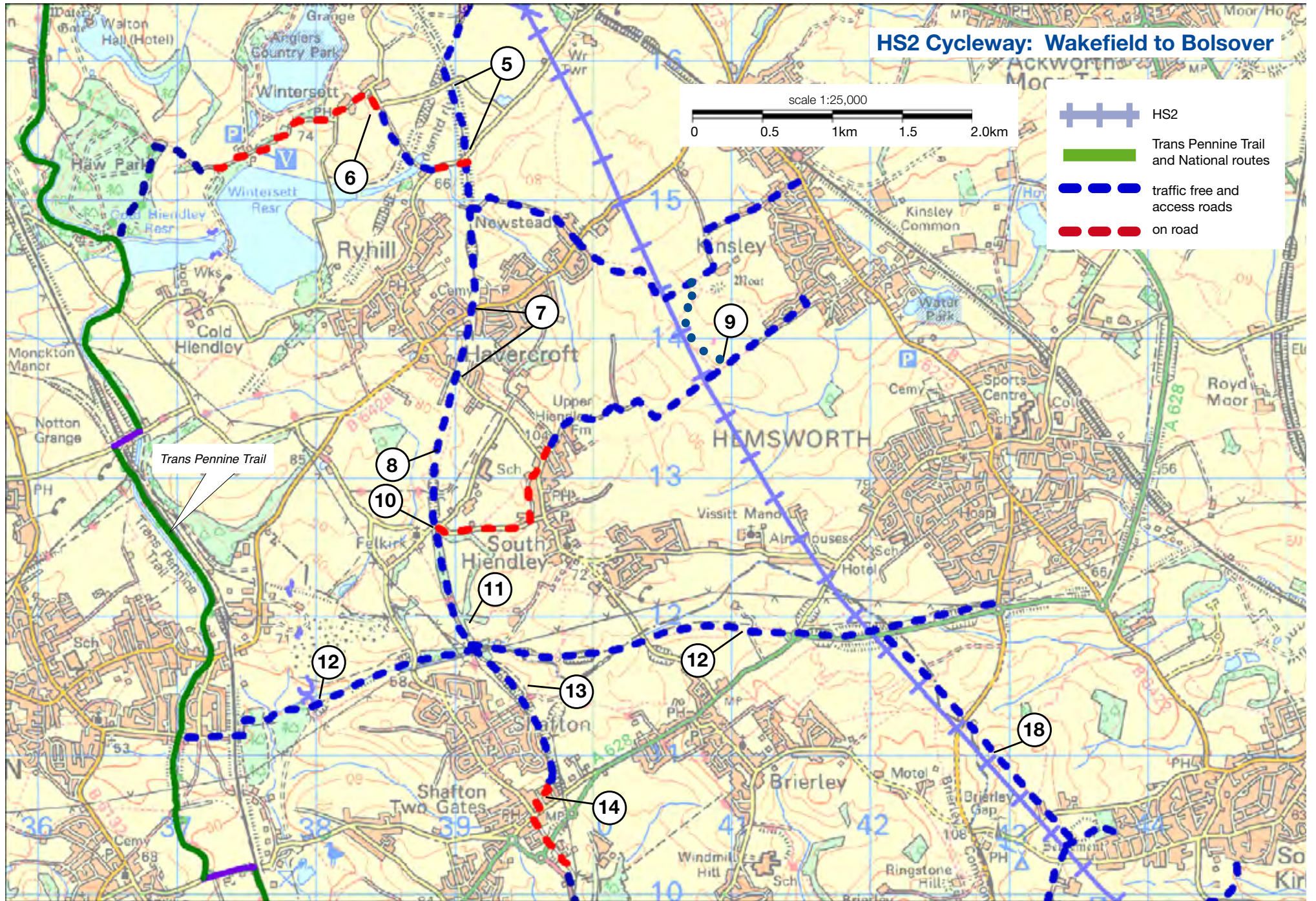
14 Follow Oak Road and then Toll Gate Close/ Engine Lane Close which links over the A628 via a convenient cycling bridge.



14 Existing cycling bridge over main road

18 Whilst we are running along the proposed main path, we should not forget the opportunities for a Hemsworth, South Kirby, Clayton, Thurnscoe and Goldthorpe link most by existing roads and tracks but some key sections need to be delivered in association with HS2. The first section makes a **Hemsworth to South Kirby Link** where it looks as though the best option will be to incorporate a good path in the earthworks of HS2 for a level route through this difficult terrain.

HS2 Cycleway: Wakefield to Bolsover



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Barnsley to the south

- 15 Use the existing roadside path (which is 3m wide) as the railway is lost. At the infilled bridge provide a crossing to reach the railway formation again (the road side oath continues but is of varying quality and it is unpleasant adjacent to the road so the path is little used).
- 16 Over the next 2kms the line of the railway is largely lost to industrial sites or proposed ones. There is though ample space to run a good route through.
- 17 Grimethorpe to Belle Green link should be made up to a good standing.
- 18 Whilst we are running along the proposed main path, we should not forget the opportunities for a Hemsworth, South Kirby, Clayton, Thurnscoe and Goldthorpe link most by existing roads and tracks but some key sections need to be delivered in association with HS2. The first section makes a **Hemsworth to South Kirby Link** where it looks as though the best option will be to incorporate a good path in the earthworks of HS2 for a level route through this difficult terrain.
- 19 **Link South Kirby** residential areas to Howell Wood Country Park
- 20 Follow the stream boundary of the Country Park for an even gradient and then a short section with HS2 again to make the bridleway/green lane **connection** between South Kirkby and Clayton for Thurnscoe.
- 21 A new field edge path to Thurnscoe would be a great improvement, from where a path just east of the railway would lead through to the station and Phoenix Park.
- 22 Back on the main route it may be more attractive to run around the south side of the lake. There is a tarmac cycle track to the north of the main road but it is not an attractive place to be, although it makes a link to Grimethorpe. It does though suffer from having two unexpectedly steep sections.
- 23 **A Thurnscoe/Goldthorpe Link to Barnsley** via the remaining railway to Cudworth would be most advantageous.
- 24 Cross the main road on the existing cycling bridge.
- 25 The 1.5km section to Great Haughton is not well defined on the ground and as far as possible a level route should be followed.
- 26 Provide a crossing of Rotherham Road.
- 27 From Great Haughton to Goldthorpe there is an excellent path on the railway finished with smooth tarmac surface.
- 28 Connection to Thurnscoe.
- 29 Provide a crossing of Nicholas Lane to reach existing cycle path link to bridge over railway. Make up route all through to the Town Centre.



27



29 Crossing Nicholas Lane

- 30 Through the main street create space for cyclists, possibly by road narrowing.
- 31 Link to Phoenix Park, and route to South Kirby.
- 32 Make new ramp down to railway at filled in bridge. The formation is then continuous to Barnburgh. Make links to adjacent housing.



32 Bridge remaining over Barnburgh Lane

- 33 The railway is in a deep cutting past an extensive network of paths on this reclaimed site. Make a good ramped link off the road so as to give local residents a direct route to the shops at Goldthorpe.
- 34 Route through Harlington uses short sections of road and then joins the Trans Pennine Trail at the riverside for a good section of path on the top of the flood bank.



34 Riverside path TPT near Harlington

- 35 The TPT runs on a good length of railway path BUT extensive tree felling is required to provide interesting views along the route.

- 36 From the Mexbrough Road the path has a very good surface all through to Conisbrough Station.



36 TPT bridge over River Dearne



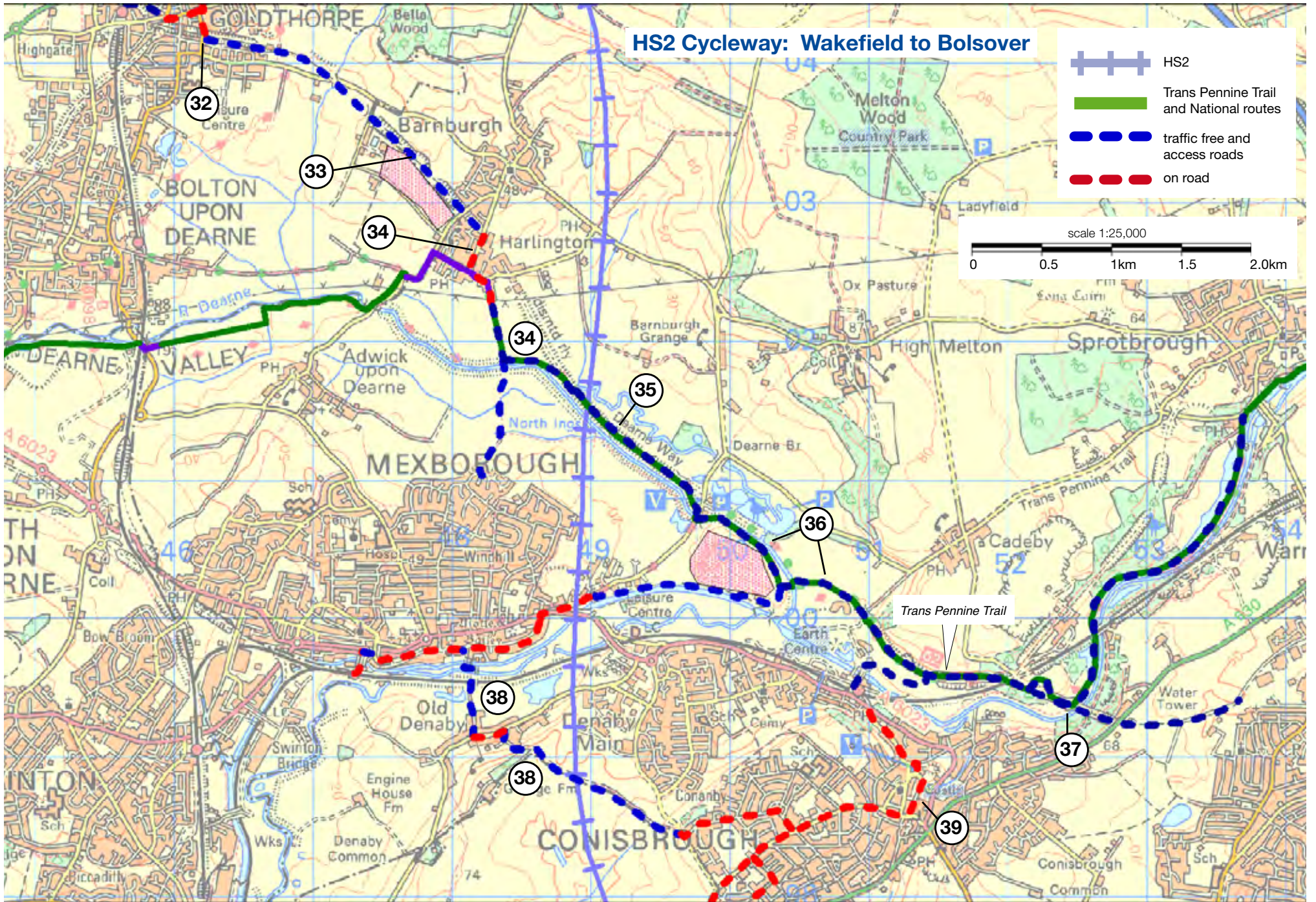
36 TPT passing Conisbrough

- 37 Conisbrough Viaduct is a notable feature and provides a cycling route towards Doncaster.



37 Conisbrough Viaduct viewed from Castle

- 38 Possible crossing of the Don in association with HS2 might follow the old main road past the Castle and church to cross the river and the railway to Old Denaby. But there is no avoiding the climb up the edge of the escarpment unless the HS2 earthworks can provide for easy gradients.



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- 39 The southern section of this route all the way from Conisbrough to Clowne runs largely along the same level ridge which HS2 and the motorway follows.

This is a real boon in an otherwise difficult terrain. But it does mean climbing up from the station at river level to the top of the hill. The advantage of following the streets through Conisbrough is that one passes the CASTLE and the shops. Some work could be done particularly on the very wide Old Road where the north side footway could be widened by 2-3 metres to make a safe route to the School.



39 Conisbrough Castle



39 House in Conisbrough

- 40 Include a central island on the ghost lines to help cross the A630.

- 41 The Firsby Hall Farm through to Ravenfield Grange is a lovely route even if it dips a bit down into the valley. Unfortunately it does not reach through to the ridge except as a footpath and it may be better to follow the Conisbrough Lodge route in the first instance.



41 Firsby Hall drive at point of planned HS2 crossing

- 42 When HS2 comes along, its earthworks should accommodate the cycle route to ease the climb to Bramley. The cycleway should be provided for in the HS2 works all the way through to Brambley as there seem to be no other opportunities for making this connection safely.

- 43 The Ravensfield Railway path is intact and offers a high quality route off the plateau down to the Don. It would make an invaluable resource for Thrybergh, and in time could provide a link to any riverside path. It would be best if the existing footpath was diverted to the field edge so as to make the link to its start.



43 Remaining bridge over the River Don







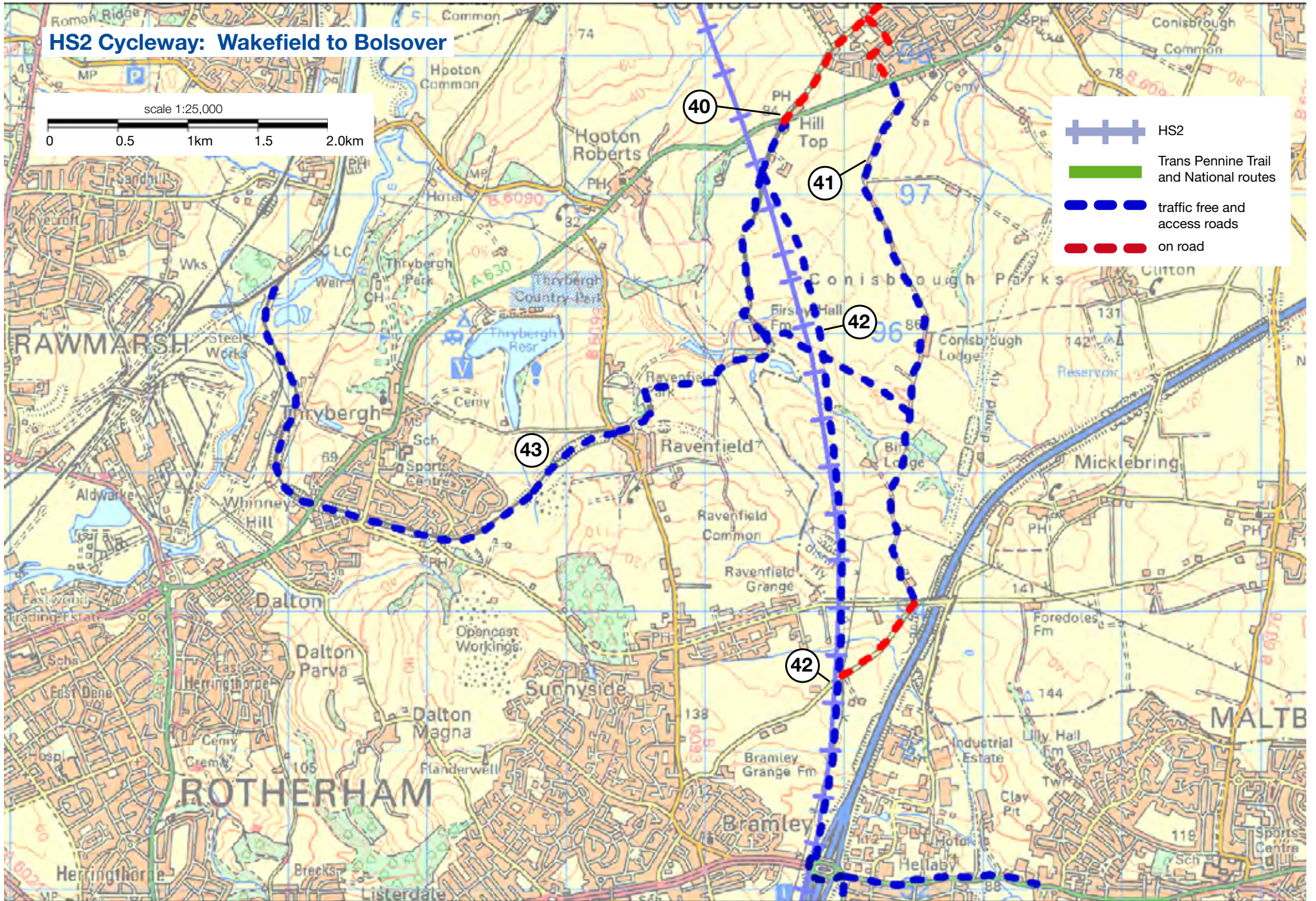
43 Thrybergh Park Lake from railway embankment

HS2 Cycleway: Wakefield to Bolsover

scale 1:25,000

0 0.5 1km 1.5 2.0km

-  HS2
-  Trans Pennine Trail and National routes
-  traffic free and access roads
-  on road



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44 Bramley –Thurscroft Link





There is a good light controlled provision around the M1 junction roads. A field edge path is needed as far as the small road to Carr. From here a new route around the boundaries of the old tip will connect through to the network of old railway tracks and Thurscroft itself. A Bramley link via Slacks Farm will also be very useful.

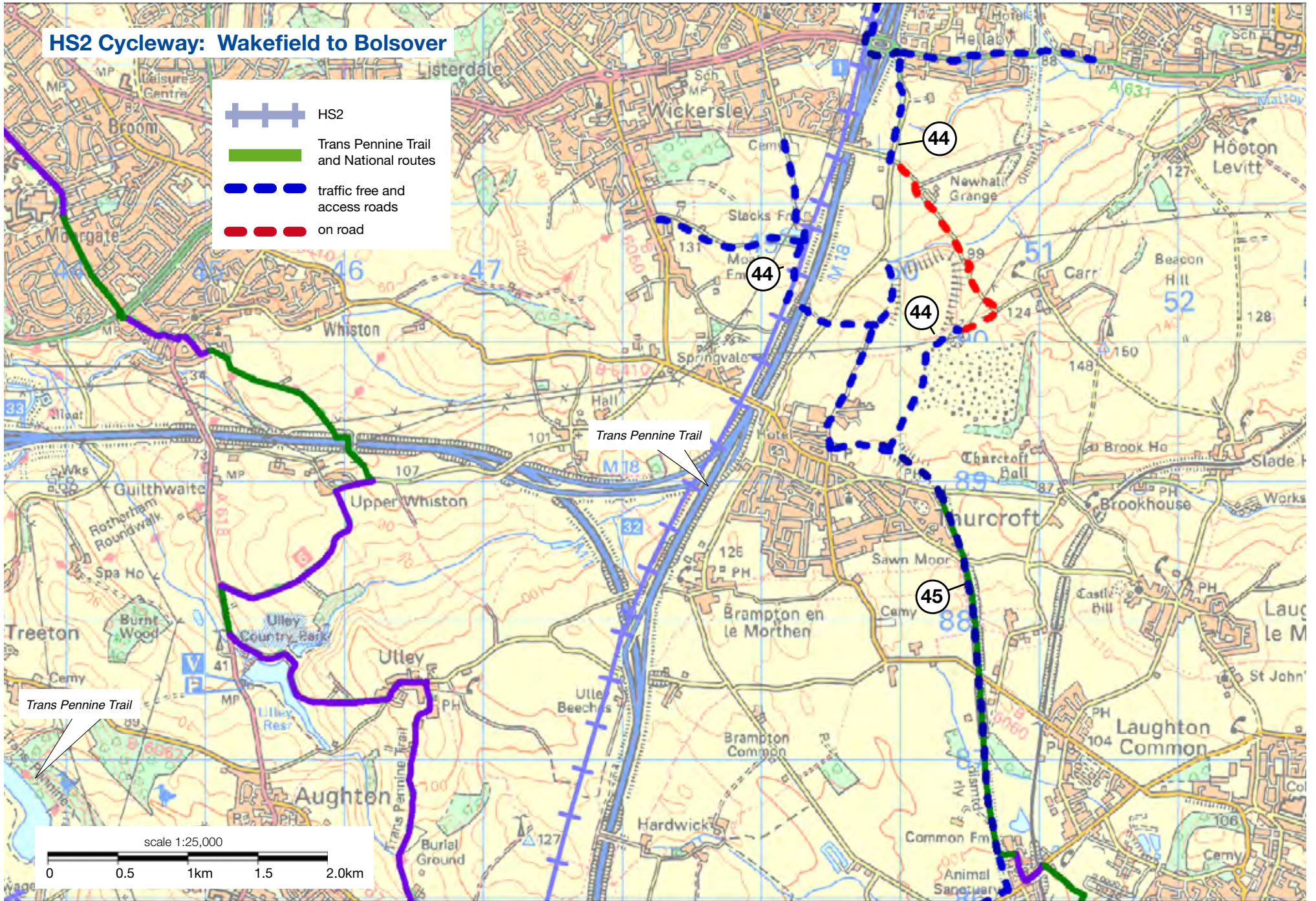


44 Cycling provision at Bramley M18

- 45 This established Thurscroft railway path runs for 4kms and starts with a number of links into the village. Although this veers some three kilometres from the HS2 alignment it would seem that connecting to this existing path would be the more useful and give the path a much greater purpose.

HS2 Cycleway: Wakefield to Bolsover

-  HS2
-  Trans Pennine Trail and National routes
-  traffic free and access roads
-  on road



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46 To connect from the Thurcroft railway path a field edge path is needed through to the A57, and traffic calming to Todwick. The route of the existing bridleway provides the basis of a direct Todwick-Wales LINK.

47 Wales to Aston LINK

These two communities are close but separated by main roads and a large topography. Here we suggest a new link parallel with HS2 for 1km and utilising the convenient bridge over the A57, and possibly a shared pavement to complete the route, or a link through the park grounds as shown on the map.

48 Wales and Kiveton Park to Rother Valley Country Park and Halfway Tram Stop LINK

A new path is long overdue to connect from the towpath of the Chesterfield Canal (from Worksop) through under the M1. Careful detailing and routing will be required for the descent of 40m down to the main road. Here incorporation in the HS2 earthworks should be a real opportunity to make a gradual descent here. As far as possible this work should support the aspirations to reopen the canal (and HS2 Rail needs to accommodate this).







48 Bridge under M1 leading down to Rother Valley Park

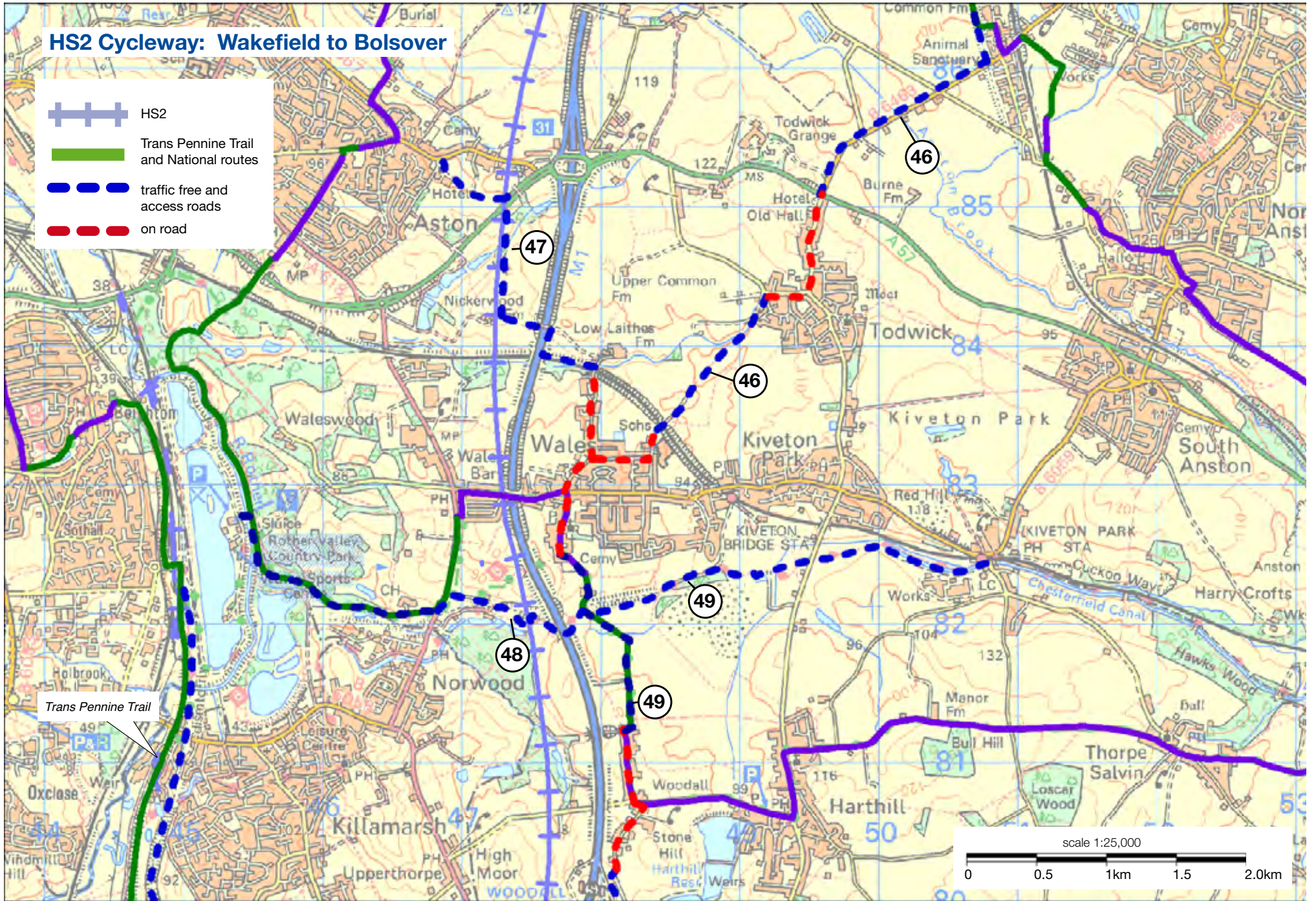
49 Wales to Woodhall is designated NCN 6 and has attractive sections. Past the stabling by the canal tunnel it needs a complete reconstruction, as does the whole section adjacent to the Chesterfield canal alignment as far as Kiveton Park Station and the remaining canal towpath to Worksop.



49 Path towards Worsop Chesterfield Canal cutting to left

HS2 Cycleway: Wakefield to Bolsover

-  HS2
-  Trans Pennine Trail and National routes
-  traffic free and access roads
-  on road



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- 50 Woodall to Service Station is mostly quiet road, but needs a new path along the perimeter boundary of the field in order to keep the level.
- 51 Woodall Service Station to Barlborough runs along an elevated ridge and is mostly the former drive to Barlborough Hall. It starts at the lightly used service road, where a central reservation will be required to cross A618. The drive is partly in woodland and then across open parkland which is rather magnificent, but all now as a footpath only, then the last section from the school to the village is a road with a good stone surface.



51 Barlborough Park looking down line of old drive to the Hall



51 Existing drive past Barlborough Hall Gatehouse

52 Barlborough to Killamarsh and the Tramline for Sheffield Link

The railway is lost in this area but the old main road is relatively lightly trafficked and could be rearranged with cycle lanes and omitting the central white line. A short link connects to the Spinkhill Road which is closed to vehicular traffic at the old railway. This provides a spectacular route down to the valley floor including the Park Hall Tunnel (600m). At the bottom it connects with the Trans Pennine Tail, and the Halfway Tram.



52 M1 at Barlborough

- 53 The existing light controlled crossing and path through Stayley Park makes for a very useful link to the Business Park.

54 Barlborough to Clowne LINK

An extensive Business Park occupies the railway and the golf course landscaping blocks the rest. However, it should be possible to devise a level route around the south of the area to reach the Clowne railway which would make a short and most useful connection bypassing the main road high on the hill. The difficult terrain here and very busy main roads go a long way to explain the very low levels of cycling at present. The proposed new National Cycleway will offer all the communities in this whole area very useful, attractive and safe route joining the communities and their services.

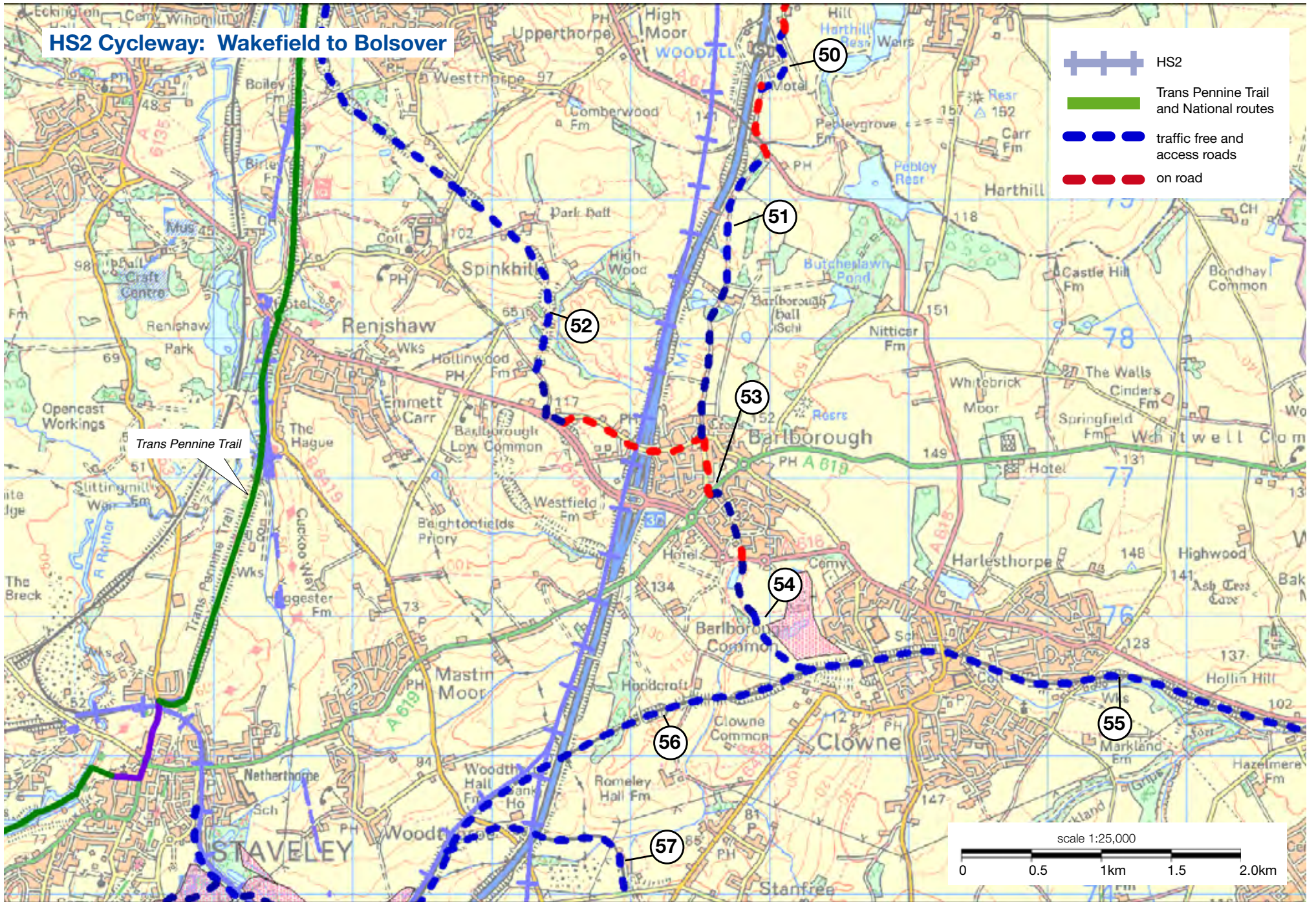
- 55 The railway formation is intact all through Clowne to Cresswell which could be constructed as a direct link to the Robin Hood Line.
- 56 This section dropping down through difficult country shows just how valuable the old railway is for cyclists. The M1 bridge will not be required by HS2 itself, but just beyond provision is needed to cross HS2 and then to run alongside its link back to the existing Network Rail Line at Staveley.



56 Clowne railway path

- 57 The branch to Stanfree is all intact with a short tunnel under the B road. If a route could be extended to the centre of the village it will offer a good loop via the Oxcroft Road to Bolsover.

HS2 Cycleway: Wakefield to Bolsover



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- 58 Over this section of single track formation, the path may need to run along the field edge. The B6419 bridge has 3 arches so the path can use a side arch.
- 59 The new industrial road has cut away the embankment, but the cyclist route could follow the landscaped track down to cross the road at grade.



59 New link road to Woodthorpe



59 Newly reclaimed lands

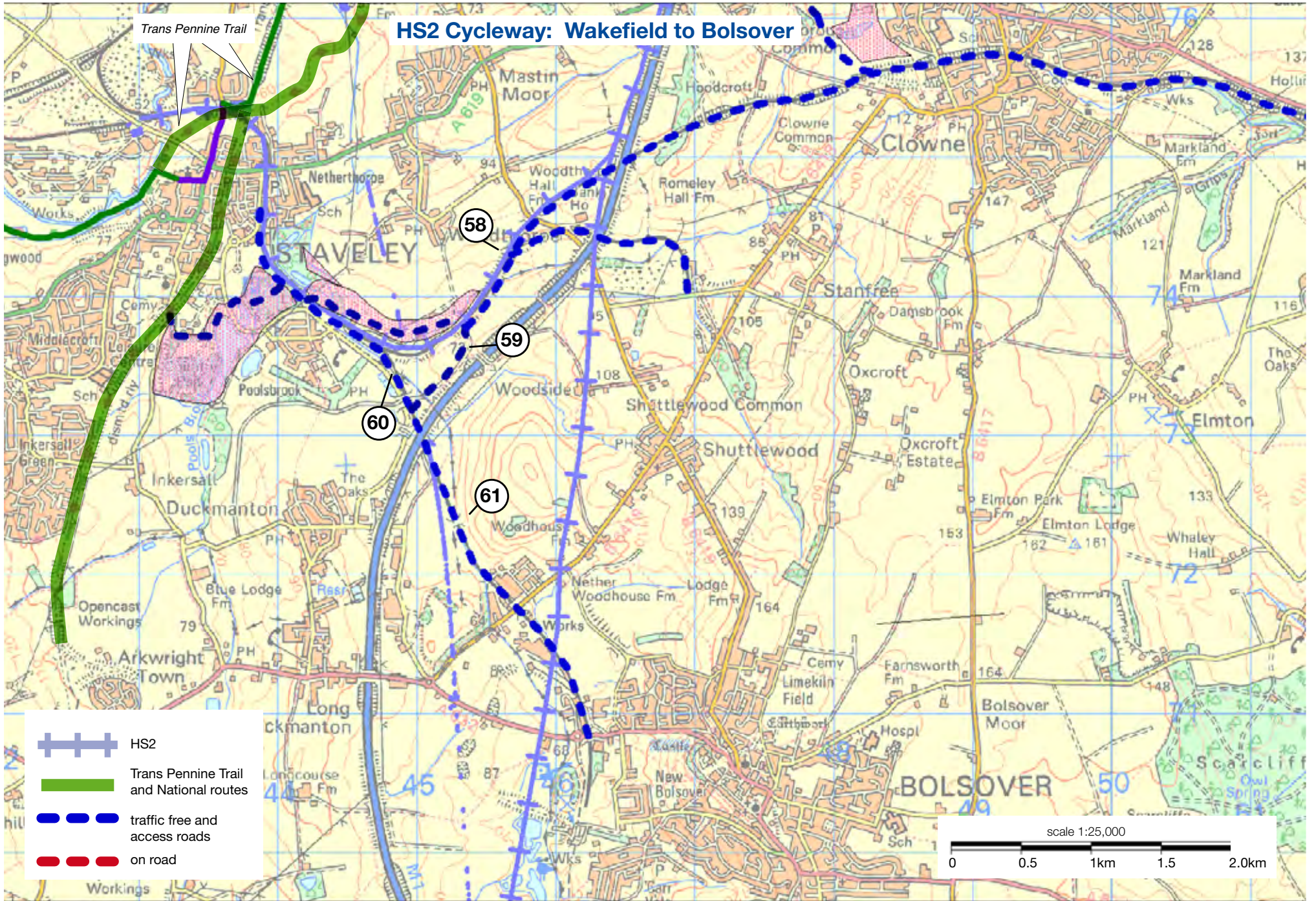


59 View showing ample space of old railway to be used for HS2 link to Staveley

- 60 Appendix 10 suggested following the now abandoned railway but under the current HS2 proposals this will be utilised for a link line. There are a number of options including running parallel with the HS2 link as there is ample spare land, picking up the cycle ways alongside the new

industrial roads, or running through the new landscaping and Poolsbrook Country Park to reach the railway path from Arkwright Town for the canal towpath to Chesterfield.

- 61 The HS2 cycle route links into the planned railway path to Bolsover and Hardwick Hall all as detailed in Appendix 10.



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