

Sustrans Design & Delivery Report

Wharfedale Greenway Phase 2: Otley to Pool-In-Wharfedale

July 2018



Menston



About Sustrans

Sustrans is the charity making it easier for people to walk and cycle.

We are engineers and educators, experts and advocates. We connect people and places, create liveable neighbourhoods, transform the school run and deliver a happier, healthier commute.

Sustrans works in partnership, bringing people together to find the right solutions. We make the case for walking and cycling by using robust evidence and showing what can be done.

We are grounded in communities and believe that grassroots support combined with political leadership drives real change, fast.

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Our vision



How we work



We make the case for walking and cycling by using robust evidence and showing what can be done.



We provide solutions. We capture imaginations with bold ideas that we can help make happen.



We're grounded in communities, involving local people in the design, delivery and maintenance of solutions.

What we do



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Figure 1. Wharfedale Greenway phases

1. Introduction

1.1 The Wharfedale Greenway is an ambitious project to provide a largely traffic-free cycling and walking route within the Wharfe Valley.

1.2 The first three phases of the route intend to utilise the disused railway line between Pool, Otley and Burley in Wharfedale, with the potential to link to Menston. A feasibility study of a further phase to the west (Burley to Ilkley and Addingham) is currently underway. A route to the east of Pool is also being explored for potential extension options.

1.3 An initial feasibility study for the route was undertaken by Sustrans in 2010, for Otley Town Council and in 2013 a steering group was formed to carry the proposed route forward. This group comprises:

- Otley Town Council
- Burley-in-Wharfedale Parish Council
- Menston Parish Council
- Pool-in-Wharfedale Parish Council
- Bradford Metropolitan District Council
- Leeds City Council
- Sustrans

1.4 This resulted in a refresh of the feasibility report in 2014 and public consultation demonstrated considerable support for the project.

1.5 Sustrans were subsequently commissioned in 2016 to undertake a Design and Delivery Report for the first phase of the project between Otley and Burley-in-Wharfedale. This aimed to find solutions to difficulties and issues raised within the original feasibility study, and to bring the project as close to deliverability as practically possible, so that a robust case can be made should any funding opportunities arise.

1.6 This work was completed in March 2017 and funding is being actively pursued to implement its construction through development funding, and Government bodies at all levels.

1.7 To maintain the momentum of the overall project, in June 2017 Sustrans were commissioned to carry out a Design and Delivery report concerning the 2nd Phase of the Greenway between Otley and Pool and that is the subject of this report.

1.8 A Memorandum of Understanding has been signed by the Town and Parish Councils, forming the steering groups which reinforces their commitment to developing the route further.

1.9 The Wharfedale Greenway has also been recognised within council strategies and has been included in potential funding programmes.

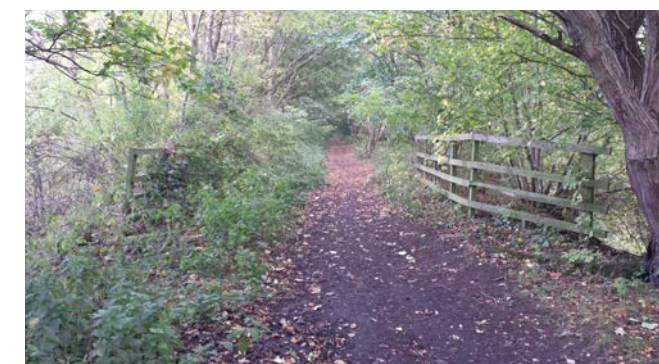


Figure 2. Typical Section of disused railway



Figure 3. Some bridges require replacement



Figure 4. A typical completed greenway

2. Context

2.1 Otley is a market town sitting on the banks of the river Wharfe. The oldest parts of the town sit on the gently sloping valley floor, but the land rises steeply to both the north and south.

2.2 The streets within the older parts of town are narrow, and the dominant terrace housing means that there is much on street parking. These factors and the significant amount of through traffic in the town mean that scope for cycle facilities is limited.

2.3 A series of studies undertaken, by Leeds City Council, identified a number of useful potential facilities, but showed opportunities for continuous linear cycle routes to be limited.

2.4 There is demand for such routes, however. Otley has a growing cycling culture, based mainly around road cycling and racing, but public requests and consultations have highlighted a desire for more family orientated facilities that can provide leisure opportunities and links to schools and facilities suitable for even novice cyclists.

2.5 The village of Pool in Wharfedale is located around 2.5 miles to the east of Otley, further down the Wharfe Valley. It has a population of 2000 but this is likely to increase significantly in the years to come as fields allocated for housing are developed. The residents of Pool use services within Otley and many of the children who live there go to secondary school at Prince Henry's Grammar school on the north side of the Wharfe in Otley. The settlements are connected by A659 Pool Road, which is heavily used by all vehicle types including HGVs.

2.6 The disused Arthington to Burley railway (closed in 1965) that links the Harrogate line at Arthington to Burley in Wharfedale offers a unique opportunity to provide traffic free cycling in the valley. Its alignment offers a valuable leisure opportunity but also:

- Provides an easy link from Pool (avoiding the A695 Pool road), for which Otley is the main centre of services and schools.

- Provides an easy link from Burley-in-Wharfedale to Otley and Pool which would connect both settlements to a railway station.
 - Has the potential to provide a section of a longer greenway route within the Wharfe Valley capable of generating a tangible increase in the local tourism economy.
- 2.7 The route has been broken down into three phases to enable a more realistic delivery:
- Phase 1: Burley-In-Wharfedale to Otley.
 - Phase 2: Otley to Pool-in-Wharfedale.
 - Phase 3: Menston to Burley-In-Wharfedale link.
- 2.8 This report focuses on the Phase 2 section.
- 2.9 Despite the opportunities, delivery of the route will not be straightforward. The 2010 feasibility study highlighted issues related to route design and land ownership that will need to be addressed. This report seeks to resolve those issues as much as is practically possible.

3. Connections

- 3.1 When considering the alignment for Phase 2 it is important to understand how the route connects with the rest of the Greenway and future phases to the east. This would ensure that Phase 2 does not terminate in a location that makes extensions impossible; or that it provides a route of little benefit to the local community. This was not an easy task, given the constraints in the area.
- 3.2 The disused railway has been replaced with the A660 Otley Bypass as it passes the south side of Otley. Phase 1 has proposed a route alongside the A660, followed by a direct link into the centre of Otley along Station Road. (See Phase 1 Design & Delivery Report for further detail.)
- 3.3 **Connection to Phase 1.** It is proposed that the main leg of Phase 2 commences at a point of Phase 1 adjacent to the A660, continuing eastwards in the verge to the roundabout at the south-east corner of Otley. See Figure 8 and drawing 10999-YH-DR-OV-02 in App A. This would enable an almost completely off-road route for users wishing to travel directly between Burley and Pool without entering Otley.
- 3.4 As with the similar section of Phase 1, this does mean the path would be very close to the Otley Southern Bypass. There are wide

verges available alongside it but the speeds are high (National Speed Limit applies) and consultation undertaken on the 2010 feasibility study suggested that people did not want to cycle alongside the road. As this is the most feasible option available, it is proposed to make the new path more amiable by constructing the path close to – or within – the wooded area to the south of the bypass, only running immediately adjacent to the bypass where bridge structures need to be passed.

- 3.5 This will provide an easy connection from Burley-In-Wharfedale to the disused railway at the roundabout of the A660 and Leeds Road.
- 3.6 A route wholly on the south side of the bypass may also enable an equestrian route for horses, due to the footbridges and busy town roads being avoided. Use by horses will be dependent on provision of acceptable equestrian facilities. Key issues will be the need to ride close to the A660 at bridge abutments and at the corner of the roundabout with the A660 and Leeds Road.
- 3.7 **Otley Highway Link.** Additionally it is suggested that a link of Phase 2 runs from the town centre through the town's streets to the east, joining the main proposed route on the dismantled railway line near the roundabout south-east of the town. Although it hasn't been possible to create an off-road route option through the town, it is felt that an on-road signed route linking the east section (towards Pool) as far as possible to Phase 1 and the west would be of benefit to visitors and Otley residents. See later sections and drawing 10999-YH-DR-OV-02 in Appendix A for further detail.
- 3.8 **Link to Menston (Phase 3).** From Phase 2, the Menston Link of Phase 3 is accessed via Phase 1 and is discussed in the Design and Delivery Report of Phase 1.
- 3.9 **Link to Ilkley.** A longer Wharfedale Greenway route has the potential to add to the local tourist economy. This would require extension of the route through Ilkley and Addingham and onwards towards Bolton Abbey and the Dales. A Feasibility Study for an Ilkley Greenway is currently underway and near completion.
- 3.10 **Link to the eastern Wharfe Valley.** The Wharfedale Greenway Phase 2 proposes to terminate on Old Pool Bank (along with a number of other connections to link to the

north side of the village). This would create the potential for a link over the busy A658 Pool Bank New Road to the Swallow Drive Estate. From here there is the potential, although land owner agreement would be needed, to continue on the disused railway as far as the live Harrogate Railway Line. Sustrans and Leeds City Council are currently examining how the route might then continue down the Wharfe Valley. The ultimate goal would be to reach the existing National Cycle Network routes 67 leading to Harrogate and 665 leading to Tadcaster and York.

3.11 Related Developments.

3.12 **Otley Eastern Bypass.** In 2017, plans were approved for Lichfields' (in conjunction with Persimmon Homes) outlined proposals for a new residential development to the east of Otley. Their proposals include a new eastern bypass as indicated in drawing 10999-YH-DR-OV-03 in Appendix A and Litchfields' details in Appendix J. As can be seen, some provision for cycling have been incorporated. It is anticipated that as the Eastern Bypass scheme develops it will be coordinated with the Wharfedale Greenway project.

3.13 **Other Residential Developments.** Planning applications for two residential developments on land near Pool were recently submitted (although are believed to have been rejected to date). The areas concerned concur with some regions considered in Sustrans' proposals. It is anticipated that any future progress with those or similar planning applications will build in provisions for cyclists. The Steering Group will need to monitor planning carefully to ensure that this occurs.



Figure 5. A good greenway attracts a variety of users

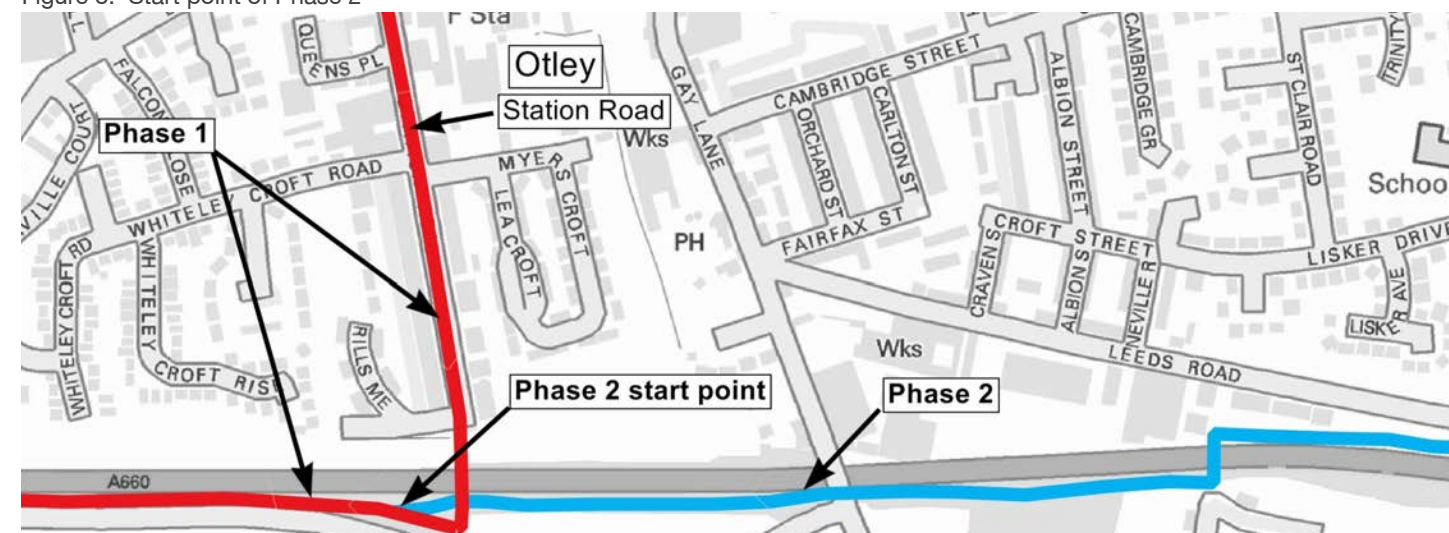


Figure 6. View of bypass facing east from footbridge



Figure 7. Roundabout viewed from A660 bypass

Figure 8. Start point of Phase 2



Wharfedale Greenway Phase 2

Otley to Pool-In-Wharfedale

4. Phase 2 Proposed Route

- 4.1 **Section 1.** See drawings 10999-YH-DR-GA-01 to 06 in Appendix A.
- 4.2 The main proposed Phase 2 route commences south of Otley and is a continuation of Phase 1 in the south verge of the A660 Southern Bypass. This provides the possibility of an equestrian route continuing from Phase 1 to Pool. (The Phase 1 route into Otley centre isn't suitable for horse use due to it requiring crossing of the footbridge over the A660.)
- 4.3 It is proposed to construct a 3m track within the verge to the rear of the existing row of lighting columns and meandering further away from the road if the topography permits. If an equestrian route is to be applied then a 2m soft track will be provided alongside.
- 4.4 Travelling eastwards alongside the A660, on reaching the next footbridge there are two options. See Figure 12 and General Arrangement drawings 05 and 06 in Appendix A.
- 4.5 **Option A** crosses the footbridge (and is unsuitable for equestrian use because the bridge is too narrow and parapets too low) before continuing eastwards in the northern verge of the A660. The footbridge already has both stepped and ramped access but was not constructed with cycle use in mind. It does not meet width requirements and the parapet is 1.2m high rather than the recommended 1.4m for cycle use or 1.8m for equestrian use. Actual risk to cyclists is deemed low however and this report recommends allowing use. Signs asking cyclists to dismount and give way to pedestrians may reduce the risk of conflict if cycles and pedestrians are using the bridge at the same time.
- 4.6 **Option B** runs under the footbridge and stays in the south verge to the Leeds Road / A660 roundabout south-east of Otley.
- 4.7 Option A is preferred due to having a more suitable crossing of the busy Leeds Road, but this would be for cycle and pedestrian use only (not horses). Option B is intended to be pursued only if an equestrian route is also to be provided here.
- 4.8 Note that Option B currently has very limited width at its meeting point with the roundabout and is not suitable for horse use in its existing state. It may be possible

- to improve the highway layout at this point by widening the path into the carriageway, as illustrated in drawing GA-06. (To be discussed with Leeds City Council.)
- 4.9 Given the high costs involved in the pegasus crossing at this location and the extent of works involved at the roundabout when the Eastern Bypass is constructed, a short-term alternative to a pegasus crossing may be to provide a formal crossing point for horses in consultation with Leeds Highways. Cycle route proposals, including equestrian requirements, should be highlighted for inclusion in scoping works of the Eastern Bypass.
- 4.10 An alternative to the equestrian crossing point indicated may be to instead construct a crossing of the Southern bypass at a suitable place west of the roundabout (see photo in

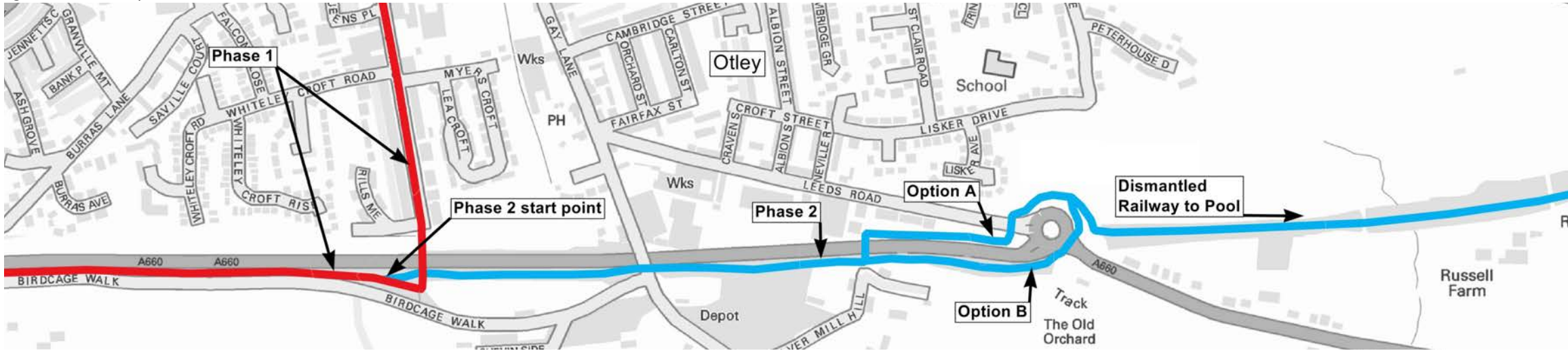


Figure 9. View of southern bypass from roundabout



Figure 10. South-west corner of roundabout

Figure 12. Route options A and B



- Figure 9). This option should similarly receive further consideration at the design stages of the Eastern Bypass.
- 4.11 After crossing Leeds Road, options A and B follow paths down the roundabout-highway embankment and join the path of the dismantled railway.
- 4.12 The route then continues eastwards towards Pool along the dismantled railway.
- 4.13 **Section 2.** See drawings 10999-YH-DR-GA-07 to 21 in Appendix A.
- 4.14 East of the Leeds Road roundabout the route proposes to use the disused railway line. This will require ramped access from the A660 down to the former track bed, which lies around 4m lower. Depending on which Section 1 option is chosen, ramps will be constructed as shown to provide access to the track bed as close to 1:20 as possible.
- 4.15 It is proposed to use flexipave to surface the ramp as it will allow use by horses as well as cycles. See section 6 for more details.
- 4.16 The above may be a temporary arrangement if the East Otley Bypass progresses. In that case, the bypass will add an additional leg to the A660 roundabout. Care will be needed to ensure that any designs for the new road include high quality access for the Wharfedale Greenway.



Figure 11. Embankment next to roundabout

- 4.17 Once the track bed is reached a simple track cross section can be achieved. Careful consideration of drainage will be needed as parts of the track bed lie within a cutting. It is likely that the original drainage for the railway has been damaged beyond repair.
- 4.18 At time of writing, it has not yet been possible to carry out surveys - or to work with the relevant landowners towards specific designs - for the stretch east of point X in figure 13 on page 6. (See further information in the 'Land Ownership' section.) Desk study and Google Earth have been utilised to compile outline designs only for the un-surveyed sections. These are included in the General Arrangement drawings of Appendix A and are labelled accordingly.
- 4.19 Towards the Pool-In-Wharfedale end of the dismantled railway, one proposed route leads northwards to join Church Close. A further proposed route continues eastwards before exiting onto Chapel Hill Road (see figure 13). Landowner issues may be a deciding factor in the selection of route(s), as discussed in a following section.
- 4.20 The link(s) through Pool-In-Wharfedale are yet to be decided. Options considered are shown in Land Ownership drawings 10999-YH-DR-LO-05, 06 and 07 of Appendix L. There is not the opportunity of an entirely off-road route, and narrow roads and footpaths/verges combined with high traffic volumes present difficulties with selecting a suitable on-road option. Ideally, a short on-road route through Pool would connect to a track recommencing along the dismantled railway east from the A658 Pool Bank New Road, or from Swallow Drive. However, resistance from landowner(s) of this region is believed likely to present difficulties with track creation here.

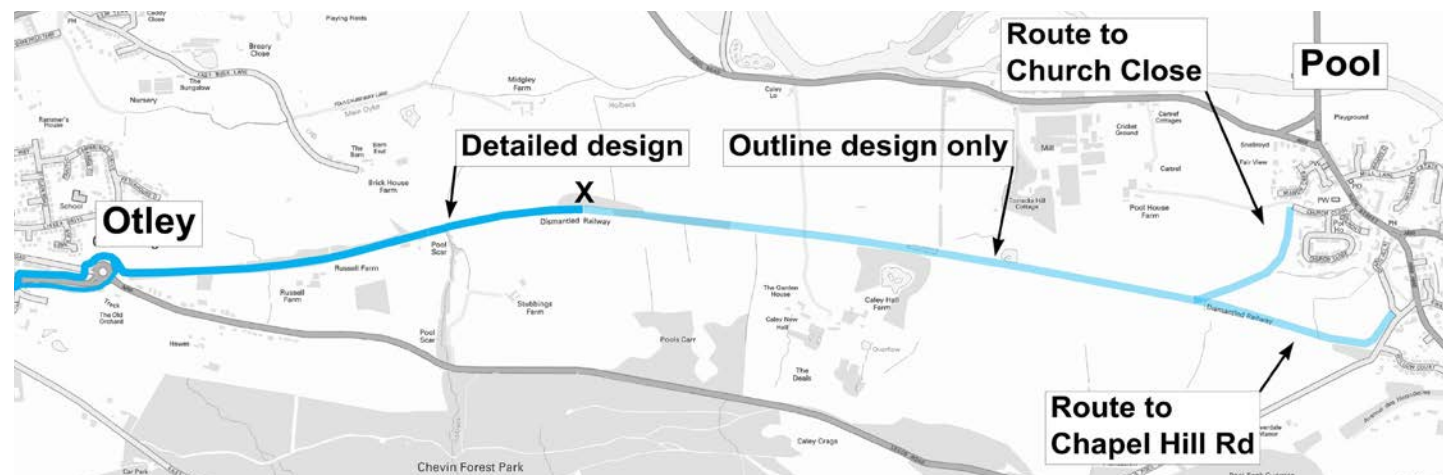


Figure 13. Extent of design

5. Highway Links

5.1 Point references on drawing 10999-YH-DR-OV-02 in Appendix A are referred to.

5.2 **From Otley travelling eastwards:** From the junction of Bondgate with Gay Lane / Wellcroft (photo in figure 14 and point 1 on the above mentioned drawing), travelling east along Wellcroft (which commences as a short stretch of 'no motor vehicles'); turning right onto Tealbeck Approach (point 2); turning left onto Cambridge Way (point 3); right onto St Clair Road (point 4); left onto Cambridge Drive (point 5); then either left onto Peterhouse Drive (point 6) or left onto Lisker Drive (point 7) – both options requiring a path to be constructed to the proposed dismantled railway track leading to Pool.

5.3 The above town route has been selected after weighing up factors including accessibility to the route from within the town, and contact with - and crossing of - busy roads (quieter traffic-free routes preferred).

5.4 **Lisker Drive** provides good connections from the school on Lisker Drive (point 8) and residential streets in the area to the proposed main route, and therefore is also included in the proposals as a 'Highway Link' option. (Figures 15, 16 and 17.)

5.5 Other Options Considered

5.6 Routes marked in purple have been considered as possible route options but decided against, as follows:

5.7 New Market and Bondgate (point 9): this would join Phase 1 to the Phase 2 link described above, creating a continuous route through Otley and connecting Phase 1 to the main track east of Otley. However, Bondgate is a main and very busy road through the

town and therefore is an unsuitable option to develop.

5.8 Route from the footbridge adjacent to Birdcage Walk (point 10); along Birdcage Walk; left onto East Chevin Road (point 11); straight on to Gay Lane (point 12); then right onto either Fairfax Street (point 13) or Cambridge Street (point 14): provides a fairly direct connection between Phase 1 and the east side of Otley without needing to travel alongside the busy A660 bypass. However Leeds Road and Gay Lane are very busy main roads through Otley, making them unsuitable for family cycling.

5.9 The cut-through from Wellcroft through Almscliffe Terrace (point 15) is currently a pedestrian path of limited width along much of it. Some particularly narrow points make it unsuitable for conversion to cycle use.

5.10 Crossing of the A660 directly west of the A660/Leeds Road roundabout (point 16): a less suitable location for a crossing due to restricted visibility being located on a bend. Additionally, incorporating this into the route would result in two main-road crossings instead of the one in current proposals. However, this option would eliminate the issue with lack of space of option B at the roundabout corner and is to be re-visited before ruling out completely.

5.11 Routes labelled 17 and 18 cutting through Sainsburys carpark may be options to pursue and are to be explored.

5.12 Next steps:

5.13 Re-inspect 5.10 above (point 16) to confirm suitability/unsuitability.

5.14 Explore 5.11 above: the two route options cutting through Sainsburys carpark (labelled 17 and 18 on the map).



Figure 14. Otley Bondgate junction with Gay Lane, Otley



Figure 15. Facing east from Lisker Drive



Figure 16. End of Lisker Drive



Figure 17. Lisker Drive

6. Track Surfacing and Equestrian Considerations

6.1 Path surfacing is probably the single most critical element determining the popularity of Greenways. A surface which is smooth, firm and dry throughout the year and throughout its lifetime will generate far higher levels of use than will any sort of informal surface which is prone to damage from water, erosion, horses and maintenance vehicles.

6.2 On this project we recommend laying a dense bitumen macadam (DBM) surface for the walking and cycle route. This should always be machine laid and generally a single 60mm layer is the most appropriate solution. (If a second layer is used then the weight of the construction vehicles laying this second layer may well damage the first layer, especially on soft ground). See SD/08 in Appendix B.

6.3 Recommended design is generally 3m wide sealed surface path, but in this case this may need to reduce to 2.5m (as a minimum) in certain locations to enable an equestrian route and drainage to be accommodated in the narrower spaces. The recommended cross section will need to narrow locally to negotiate fixed structures such as bridges.

6.4 The exact amount of sub-base required will need to be determined on site. Its thickness may be reduced (and cost saved) if the original railway ballast is close to the surface and not buried too far beneath the accumulated mud. In many cases, however the path will need to be built so that it stands clear of the surrounding land to allow good drainage. This is particularly the case in several locations along the dismantled railway as indicated on the General Arrangement drawings.

6.5 In addition, a walk through with an Ecologist, prior to construction, will be needed to determine if any sections of track will need to be constructed using an appropriate "no-dig" method. This is used where a new track needs to be built over the roots of trees which lie close to the surface. Many of the existing roots will belong to trees that lie immediately adjacent to the track and will be felled during construction. However some ecologically important trees will need to be protected and it is around these that the "no dig" method will be used. See drawing SD/14 in Appendix B.

- 6.6 The consultation exercise undertaken in 2014 provided a clear steer towards making the route as friendly as possible for horse riders. There are few official bridleways in the areas but it is understood that horses would be able to make their way to the disused railway via informal routes and the quieter roads. The disused railway offers one of the few opportunities to achieve a route for horses of significant length.
- 6.7 Public Rights of Way Officers in Leeds City Council and Bradford Metropolitan District Council recognise the importance of the route for horses and have stated that making proposals horse-friendly is critical to their support for the project.
- 6.8 To accommodate horses within the route it is proposed to provide a 2m soft verge parallel to the walking and cycling track. For most of the route, the equestrian track will lie on the ballast of the disused railway track bed. New sub base should only be needed where the ballast has become too deeply buried in mud, but all saplings, tree roots and general debris will need to be cleared.
- 6.9 Where space becomes too narrow to allow two adjacent paths, an alternative surface that allows use by all users has been requested by PROW officers. They currently favour use of Flexipave, which consists of a rubber crumb, with some aggregate mixed in and bound with a resin (figure 19). This offers an all-weather surface but is flexible enough to be suitable for horse use. Its disadvantage is that long term maintenance requirements are, as yet, uncertain and the rubber has a grip that can slow cyclists and takes more effort for them to use.
- 6.10 Farm vehicle use will be required for a stretch of route running east of Russell Farm (see General Arrangement drawing 10 in Appendix A). Construction should include thicker layers of upper and sub-base to facilitate this usage.
- 6.11 Estimated costs are based on the above surface choices. Other options are currently being examined by Sustrans, and may provide an alternative that is cheaper or can combine cycle and equestrian route within the same surface. Updates will be given when construction becomes imminent.
- 6.12 The access controls and bridges will also have to be provided in a way that enables safe use by horses, and this is discussed in later sections.

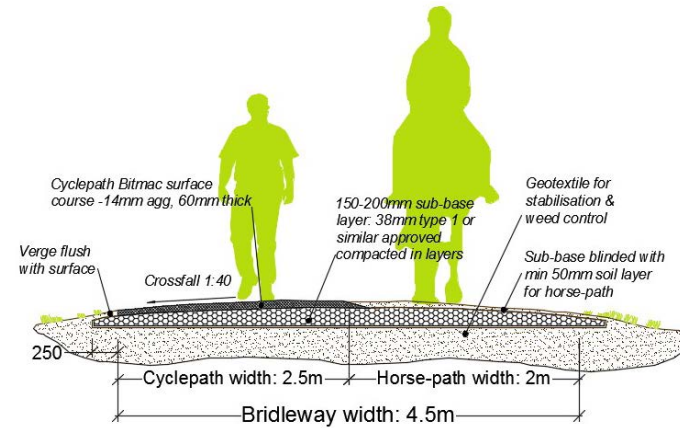


Figure 18. Cross section - track plus horse track



Figure 19. close up of FlexiPave

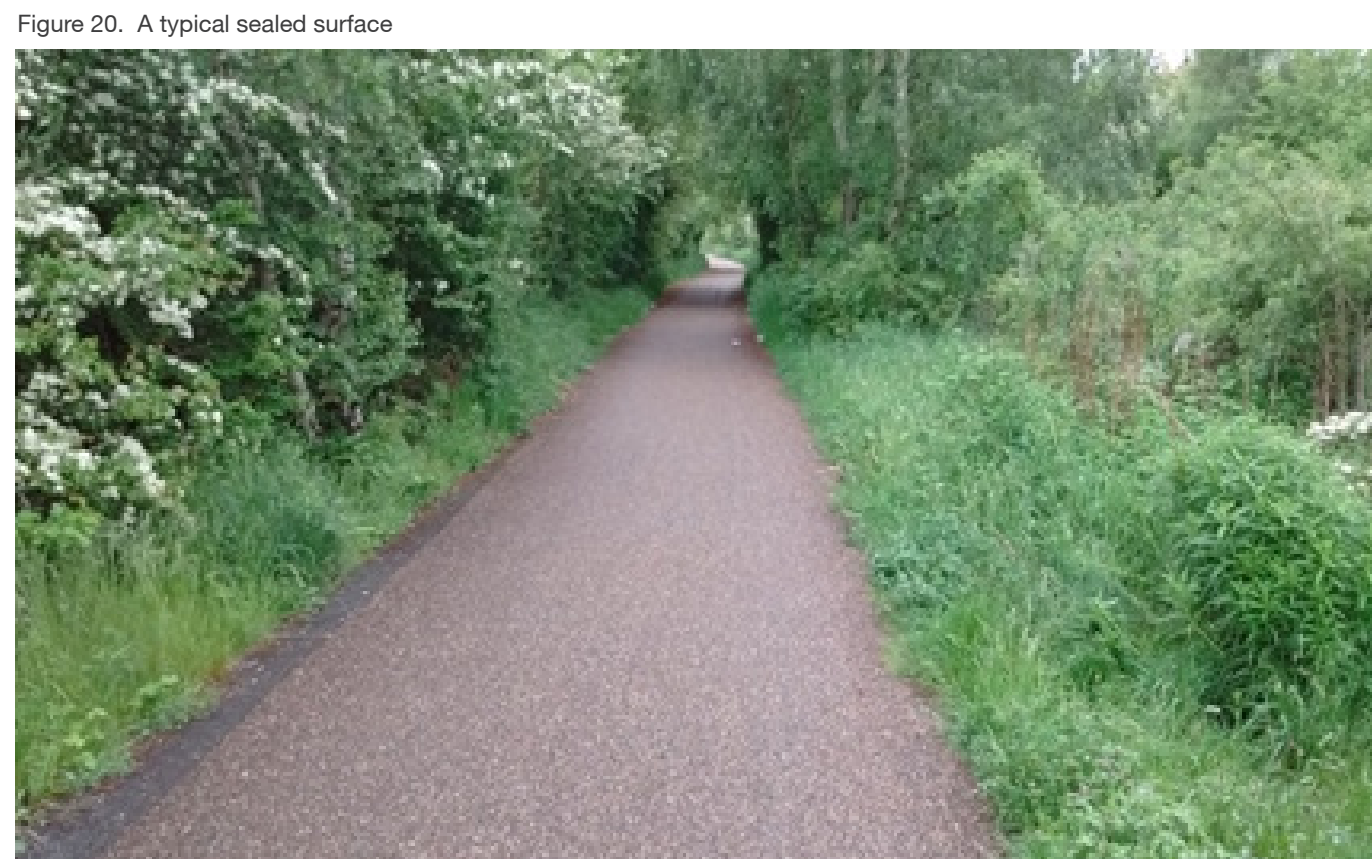


Figure 20. A typical sealed surface

7. Access control considerations

- 7.1 It is important that the route can be used by as many groups as possible - entrance points to the paths need to allow for access by pushchairs, wheelchair and mobility scooter users, and equestrians on the majority of this particular route.
- 7.2 Antisocial behaviour and unlawful access by vehicles, particularly motor bikes, can sometimes become a problem. To some extent this can be addressed by installing access controls such as bollards, 'A'-frames or lockable gates. As some of these types of physical barriers can be too restrictive for the above user groups, Sustrans' standard practice is to avoid their installation wherever possible.
- 7.3 It is therefore recommended at the current time that physical access barriers (apart from a minimum number of bollards, as discussed below) should be avoided.
- 7.4 At the planning application stage, there may well be pressure to provide some sort of access control that more robustly prevents motorcycle use and A-frames may be suggested. This must be resisted if possible. A-frames can blight the scheme for many users, and almost all legitimate users will be

inconvenienced by them. Even pedestrians will have to shuffle through the barriers and some mobility impaired pedestrians might be excluded altogether.

- 7.5 Other alternatives are available and the full range can be seen in Sustrans' "Guide to Controlling Access on Paths" included in Appendix O. Examples of arrangements used successfully are included in figures 26 to 28 below. These include:
- Single bollard
 - Staggered bollards
 - Chicanes
 - Adjustable A-Frames
- 7.6 It must also be remembered that, in many cases, access will also need to be maintained for maintenance vehicles.
- 7.7 **Equestrians Access.** In most cases good access for cycles and pedestrians will also allow use by horses. However, if barriers become too restrictive then additional measures for horses may be required. For example if staggered barriers or A-frames (not recommended) are used then adjacent horse stiles will be required.
- 7.8 If access controls are required where there are fields with stock, then cattle grids can be used to allow cycle access. However, if horse riders also need to use the track then an additional long-handled gate will be needed.
- 7.9 There have been reports of the use of scramble bikes along the Otley to Pool section of the dismantled railway. A smooth-surfaced path (as recommended) along this route may well be enough to detract cycling of this nature. It is suggested that the situation be monitored and re-examined at a later stage if required.
- 7.10 The installation of staggered chicanes or barriers is recommended at the top of the steps on the footbridge forming part of Phase 2 (option A) where it crosses the A660 Otley Southern Bypass. See photo in figure 21. This will require discussion with Leeds City Council's Bridges team, who are responsible for maintenance and structural integrity of the footbridges.
- 7.11 **Bollards** are used for preventing access to a path by cars and vans. They can also be used as a mounting point for any necessary traffic signs.

- 7.12 They are suitable for situations where vehicular access (including for horse drawn carriages) is not desired. Where access for vehicles is required as part of maintenance activities, removable bollards can be used to facilitate access for these vehicles.
- 7.13 A single row of bollards is effective at physically preventing access for most cars, although some unusually narrow vehicles (such as two-seater Smart cars) might be able to pass through the bollards at 1.5m spacing.
- 7.14 Bollards should at the very least be a contrasting colour to their surroundings. Ideally they need to be equipped with two yellow reflective strips, or some other device, to ensure they are conspicuous to the partially sighted and to approaching cyclists. Retro-reflective strips will help cyclists see the obstruction during times of darkness.
- 7.15 Alternatively, providing traffic signs (i.e. to indicate the cycle track) or a lamp in the bollard will help to highlight its presence.
- 7.16 Bollards should be a minimum of 1000mm high, to ensure they are visible and do not pose a trip hazard. In isolated locations prone to vandalism, robust bollards with substantial foundations may be required in order to resist being pulled out by 4x4 vehicles.
- 7.17 One or more bollards can be removable to allow for occasional maintenance access. A variety of designs exist for removable bollards. Care should be taken when specifying the bollard type, to ensure it is sufficiently robust, that any sockets or stubs exposed while the bollard is removed do not pose a risk to path users and manual handling issues through removing the bollard are taken into account. Designs which eliminate or minimise the possibility of the bollard not being replaced after use are preferred.
- 7.18 The disadvantage of using lockable bollards is that they can allow access by motorcycles. In the instance of the Wharfedale Greenway it is thought that the likelihood of motorcycle abuse is low. Existing access points leading to the current paths on the disused railway have no means of preventing motorcycle use and, as far as we are aware there is no current motorcycle problem associated with this proposed phase.

7.19 Access Controls for Phase 2

- 7.20 Bollards in accordance with the above

guidelines (and of minimum quantity to prevent vehicular access - one or two per location may be sufficient) are suggested at the following access points of Phase 2: (See General Arrangement drawings in Appendix A)

- 7.21 **Access Point A** - South-west path entrance near Leeds Road / A660 roundabout (Figure 23);
- 7.22 **Access Point B** - North-west path entrance near Leeds Road / A660 roundabout;
- 7.23 **Access Point C** - North-east path entrance near Leeds Road / A660 roundabout;
- 7.24 **Access Point D** - South-east path entrance near Leeds Road / A660 roundabout;
- 7.25 **Access Point E** - East end of Lisker Drive;
- 7.26 **Access Point F** - Near Russell Farm - Not a public access point but a lockable bollard is proposed on the track just west of a farm access belonging to Russell Farm (see drawing 10999-YH-DR-GA10 and figure 25), to prevent heavy farm vehicles from accessing the path west of this location in error.
- 7.27 **Access Point G** - Path entrance at Chapel Hill Road, Pool;
- 7.28 **Access Point H** - Path entrance at Church close, Pool.



Figure 21. Top of steps, Silver Mill Hill footbridge - north end. Ramp access is to the left in the photo.



Figure 22. Staggered barriers south end of abovefootbridge



Figure 23. Access point A - south west of roundabout



Figure 24. Farm accesses along dismantled railway



Figure 25. Farm access leading down from dismantled railway



Figure 26. Example of single lockable bollard



Figure 27. Example of staggered bollards



Figure 28. Example of two bollards

8. Structure and Ramp Issues

- 8.1 There are a number of locations on the route that require construction of new structures to achieve the level of continuity required to attract large numbers of users. Each structure has a unique set of issues and these are discussed in this section.
- 8.2 **Bridges in General.** As discussed previously, there is a desire to cater for pedestrians, cyclists and horse riders along the Wharfedale Greenway. As such any new bridges that are required need to accommodate them.
- 8.3 The Design Manual for Roads and Bridges (BD29/04) "Requirements for combined use by Pedestrians and Cyclists or Equestrians" suggests a minimum width over the bridge of 3.5m. This would accommodate a cyclist passing a horse and rider coming in the opposite direction. The height of a sitting rider and issues with horses taking fright from traffic passing beneath them also leads to a recommendation of 1.8m high parapets, which ideally should be infilled to at least 1m to restrict the horse's sightlines.
- 8.4 Horses also require a non-slip surface on the bridge deck.

- 8.5 The footbridge crossing the A660 near Silver Hill Mill has both step and ramp access and forms part of option A of the proposed route – see figures 21 and 22. The bridge is intended to be utilised without major upgrade work and therefore would be unsuitable for horses to cross. (Option B avoids this bridge and therefore has greater potential to form an equestrian route if one is to be provided here.) The footbridge was constructed for pedestrian use and has parapets of 1.2m (1.4m height is recommended for cycle use). Risks are deemed low and this report considers the current parapet height to be sufficient if signs asking cyclists to dismount and give way to pedestrians are installed. A barrier at the top of the bridge's steps is also recommended (see section 7).
- 8.6 Slope gradients have been recommended to be 1:20 wherever possible to make them easy to use by wheelchairs. This may need to be reduced at the approaches to some bridges, and in this situation a gradient of 1:15 is to be taken as the maximum.
- 8.7 A ramp extension down from the bottom of the north end of the A660 footbridge ramp to ground level of the north verge may be required - further surveys and design work required at this location. Design work and provision will need to be undertaken by Leeds City Council as works sit within the Highway Boundary.
- 8.8 At the roundabout south-east of Otley, the proposed path – both options A and B – follow a route down the wooded embankment to join the disused railway. The drop in levels is approximately 4m. A gradient of 1:20 would require the path to have length of at least 80 between slope top and bottom. Further survey work is required to determine exact levels and path length/gradient required. Approximate alignments are shown on design drawings in Appendix A. Tree loss is to be minimised, and existing track to be followed where possible to minimise earthworks and vegetation loss. 1m wide verges both sides of the path are to be provided if possible, though it may be necessary to narrow to 0.5m in places.
- 8.9 There are several structures along the dismantled railway east of Otley, up to the point currently surveyed (upto structure 5, or point 'X' in figure 13 on page 6 - also see the map in figure 39 on page 12) as follows: (drawings 10999-YH-DR-GA-09 to 12 are referred to)

- 8.10 **Bridge 1:** 5m between timber parapet fences; arch in good condition; abutments being displaced by large trees.
- 8.11 **Bridge 2:** 3m between timber parapet fences; structure generally in good condition.
- 8.12 **Bridge 3:** 4.3m between timber parapet fences;
- 8.13 **Bridge 4:** 5.2m between timber parapet fences;
- 8.14 **Bridge 5:** bridge is missing, replacement required. Approx span required is around 5m although it is proposed to strengthen and possibly raise abutments which will increase the span to 7.5m. A steel Warren Truss bridge is proposed. Concept design drawings for the bridge are included in Appendix C.
- 8.15 A detailed design and ground survey will be required prior to construction.
- 8.16 Further bridge and ramp requirements are to be determined when it becomes possible to access and survey the stretch of land east of structure 5.
- 8.17 **Next Steps:**
- 8.18 Carry out site visit and complete design detail for a possible required ramp at the north end of the footbridge near Silver Hill Mill.
- 8.19 Similarly, carry out detailed survey and completion of design detail for proposed ramps adjacent to Leeds Road / A660 roundabout.
- 8.20 Detailed design for replacement structure 5.
- 8.21 Continue with landowner consultations and surveys of un-accessed east section of the proposed route and undertake detailed designs for bridges and ramps on this stretch as information becomes available.



Figure 29. Track over bridge no.2

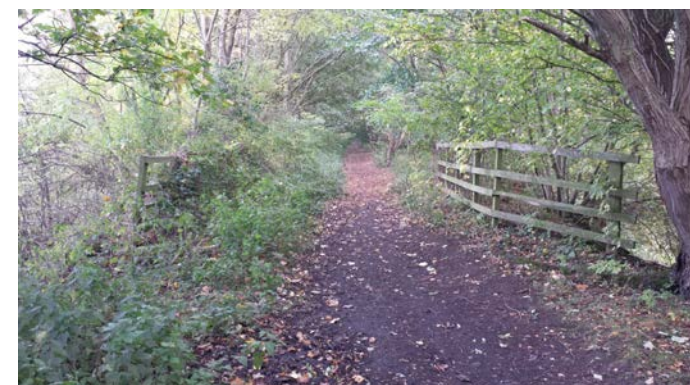


Figure 30. Track over bridge no.1



Figure 31. Missing bridge no.5



Figure 32. View beyond missing bridge

9. Land Ownership and Legal Consents

- 9.1 Much of the land on which the scheme will run is in private ownership. Consultations were made with landowners in September 2013, May/June 2014 and December 2017. There is currently some resistance to the cycle route proposals by several landlords as detailed below, and to date it has not been possible to obtain permission to access some regions for surveying and design purposes. Some stretches of the route therefore have outline designs only, based on desk study and Google Earth data. (See figure 13 on page 6 – the region east of point X is yet to be surveyed.) Designs will be finalised in cooperation with the landlords and when/if permission to access to their land is granted.

Sections affected are indicated in General Arrangement drawings 12 to 21 in Appendix A.

- 9.2 Landowner's cooperation will continue to be sought as the scheme progresses. If agreement cannot be met and no alternative found, Creation Orders may enable access and usage of land although this option is intended to be avoided.
- 9.3 For all sections of route there must be:
- Clear consent from the Land owner (or necessary orders)
 - A clear agreement regarding Legal Access
 - Clear identification of liability
- 9.4 At the time of writing this report it is intended that access to sections of route in private ownership should be by permissive agreement. i.e. an agreement is put in place with the land owner that allows access by foot, cycle and equestrian (where appropriate) but that does not create a legal "Cycle Track" or "Bridleway". This will allow the route to be achieved without placing liabilities on parties such as the Highways Departments (who would be automatically liable for a "Cycle Track"), the Public Rights of Way Teams (who would automatically be liable for a "Bridleway") or the land owner themselves (who would be liable if no agreement was in place).
- 9.5 The permissive agreement will need to list all liabilities associated with the route and place them with the party which has responsibility for management of the route.
- 9.6 Again, at the time of writing this report it is considered the most appropriate parties to own responsibility of track and vegetation management is Otley Town Council and Pool in Wharfedale Parish Council. This maintenance (discussed in section 13) could be augmented with Sustrans volunteers and/or the creation of a "Friends Of" Group.
- 9.7 Liability for the proposed bridges would rest with current owners, who we believe to be Leeds City Council.
- 9.8 As mentioned above, consultations with landowners have revealed some areas of contention. This may prove to be the main barrier to progress.
- 9.9 Title Deeds are available in Appendix L and copies of correspondence with landowners and affected properties are available.

- 9.10 Land ownership along the route of the dismantled railway between Otley and Pool, and extending to the east of Pool, is summarized below. Figure 33 is referred to; full details shown in Land Ownership drawings in Appendix L.
- 9.11 Unless stated below, to date no issue has been raised by the landowner and therefore Sustrans believes that consent with reasonable conditions can be met.
- 9.12 **Area 1:** Land south-west of the A660 / Leeds Road roundabout: vested with Leeds City Council's Highways Department.
- 9.13 **Area 2:** Patch of land lying adjacent to the A660 / Leeds Road roundabout: Leeds City Council's Highways Department.
- 9.14 **Area 3:** Region north-east of the A660 / Leeds Road roundabout: owned by Persimmon Homes; their comments in 2013 and 2014 consultations were that they wouldn't permit the Greenway path on their land (Creation Order may be required). Persimmons in conjunction with Lichfields have put forward proposals for a housing development and new Otley Eastern Bypass affecting a large region east of Otley, which were approved in 2017. See details in Appendix J and Sustrans' comments in section 03: Connections.
- 9.15 **Area 4:** A stretch consisting of several Titles registered to Leeds City Council.
- 9.16 **Area 5:** A small area of unknown ownership (no titles registered).
- 9.17 **Area 6:** In private ownership. Owners have expressed opposition to the proposed cycle route being formed through their land.
- 9.18 **Area 7:** In private ownership.
- 9.19 **Area 8:** In private ownership.
- 9.20 **Areas 9 & 10:** In private ownership. Part of this region had a Planning Application for a Taylor Wimpey residential development submitted in March 2017, which has since been refused. See Appendix J for details.
- 9.21 **Area 11 & 12:** In private ownership. Resistance to the proposals has been expressed. Consultations are continuing at time of writing.
- 9.22 **Area 13:** Registered to Kingswell Watts Solicitors Ltd when records were sought in September 2017. Planning permission sought in November 2016 for a residential development was refused.

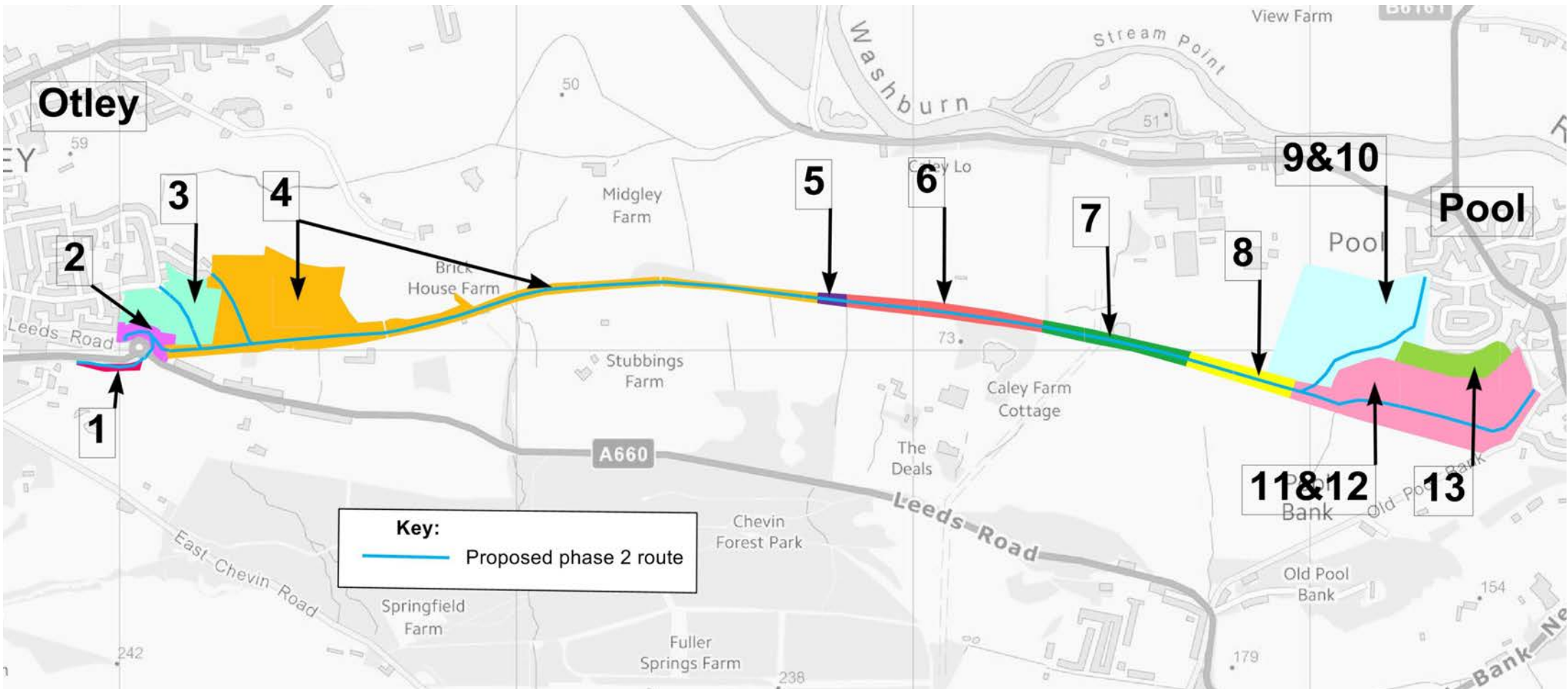


Figure 33. Land Ownership overview

10. Flooding and Drainage Issues

- 10.1 Details regarding drainage can be found on General Arrangement drawings in Appendix A. For the most part the new tracks will be cross-falled (formed to drain in a certain direction) to drain "over the edge" into the existing rail formation and away from existing ditches into the rail formation, where it can percolate slowly as it does at present. Direct draining into watercourses will be avoided so as not to add to any potential flood risk.
- 10.2 There is at least one instance along the path east of the Leeds Road roundabout where pooling of water is evident. In these locations, the proposed path level is to be raised slightly to allow for drainage. One area in particular, indicated on drawing 10999-TH-DR-GA-07, appears to have sunk. The original drainage of the railway has likely been crushed and is no longer operational here.
- 10.3 A little further along the track, just on leaving the wood area, there is a crossing of the path by a small water stream (see General

Arrangement drawing 09 in Appendix A and photo in figure 34). This will require a pipe to be installed below the path.

- 10.4 Though yet to be surveyed, there are believed to be one or two large ponds lying along the route as indicated in drawing 10999-YH-DR-GA-14. More low-lying and flooded regions are likely to be encountered here. It is anticipated that the new track can be situated on higher grounds around the edges of ponds and cuttings. Causeways may need to be constructed. Details to be clarified once surveys have been completed.
- 10.5 The Environment Agency online Flood Risk Maps (see figures 36 to 38 and Appendix P) show the main rivers (for which the EA is the drainage authority) as the dark blue lines. They also show the flood plains (flood zones) in the lighter blues and greens.
- 10.6 For the Wharfedale Greenway Phase 2 region they show the majority of the stretch east of Leeds Road roundabout to be in Flood Zone 1. The low-lying pond areas mentioned above are in Flood Zone 2.



Figure 34. Water stream across path



Figure 35. Dismantled railway track

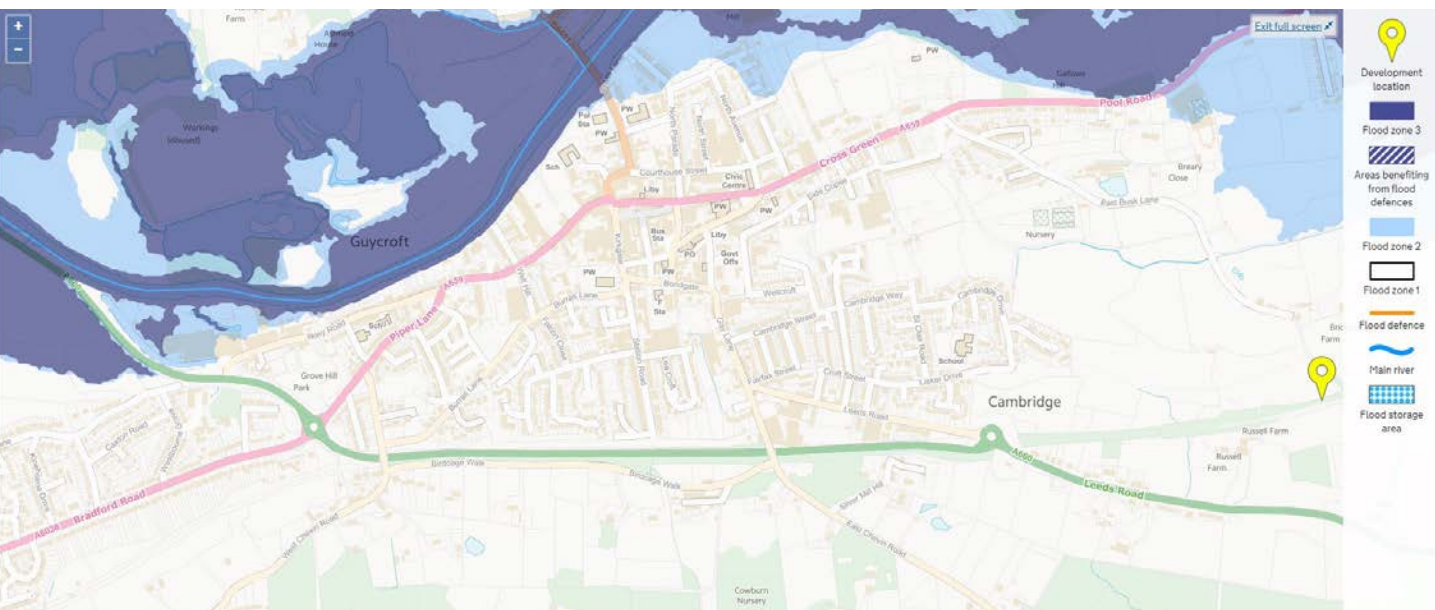


Figure 36. EA Flood risk map 1

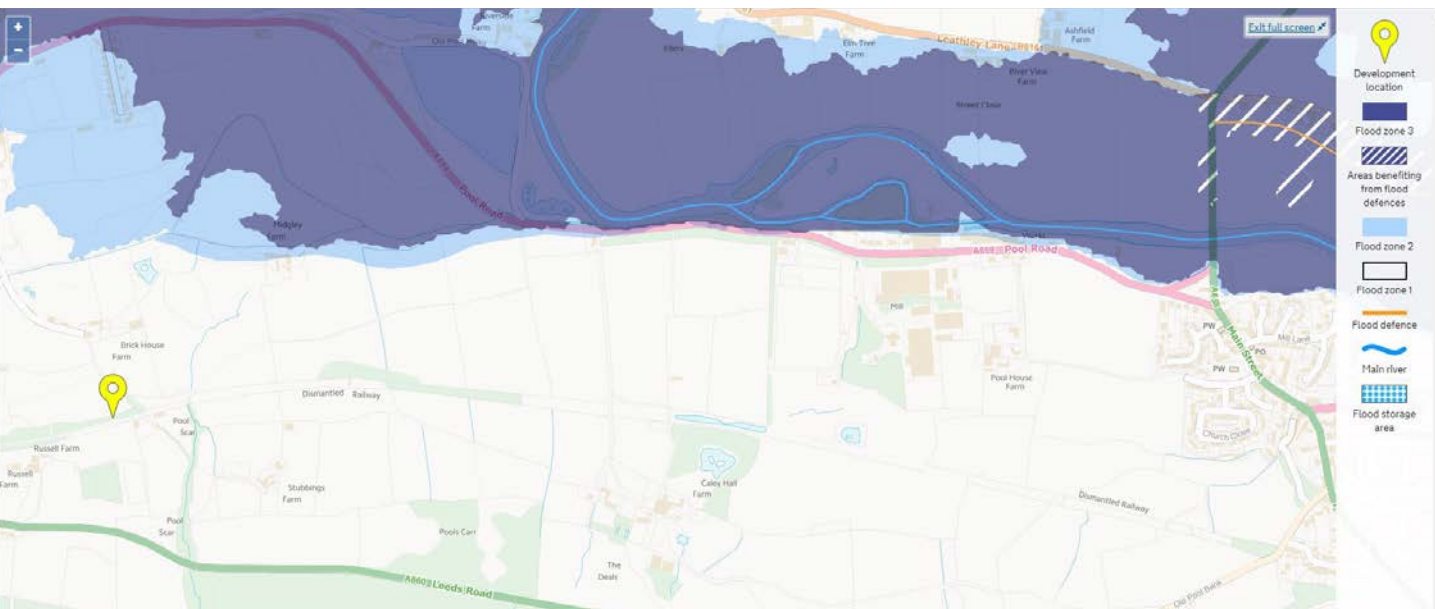


Figure 37. EA Flood risk map 2

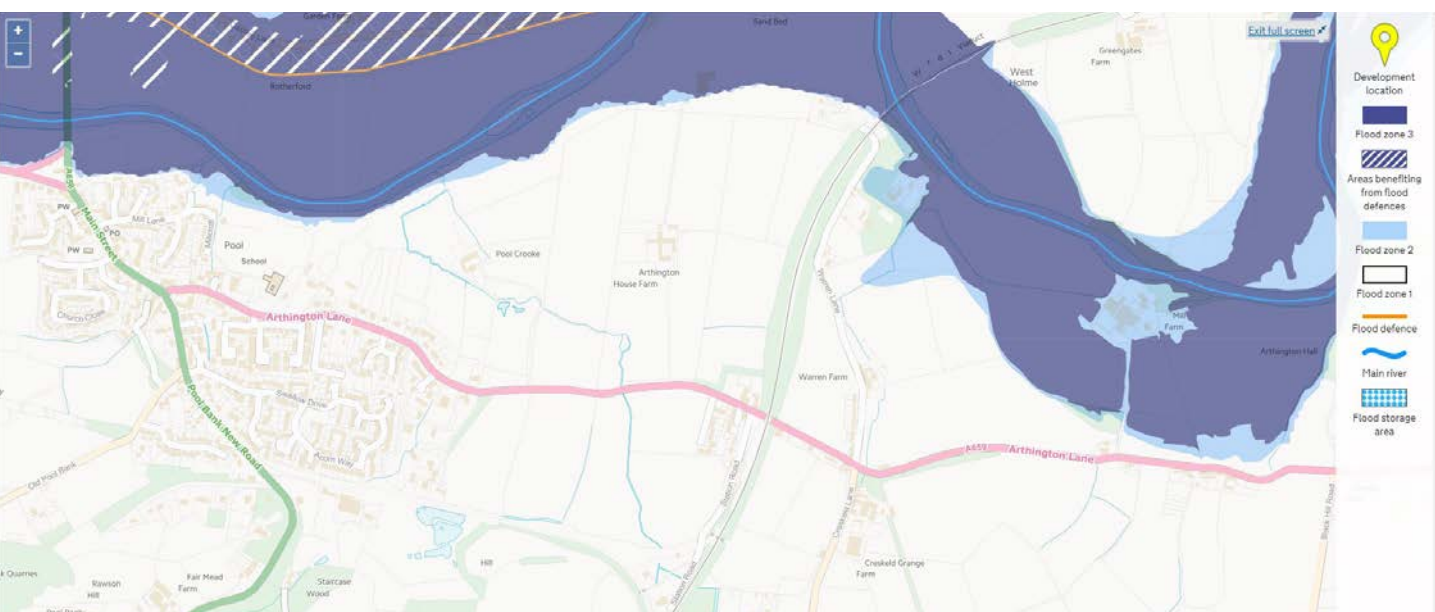


Figure 38. EA Flood risk map 3

11. Site Access

- 11.1 Key to delivering a successful project will be development of a workable site access plan. This sets out how the route will be accessed by plant, where materials will be off loaded, where welfare cabins for the site staff will be located etc.
- 11.2 Possible construction site access points along the proposed route are identified in figure 39 and described as:
- 11.3 Site access point 1** – Directly off the A660 southern bypass into its southern verge.
- 11.4 Site access point 2** – From East Chevin Road, via Silver Mill Hill onto the A660 southern verge. Silver Mill Hill is privately owned? and permission would need to be sought for its use. Alternatively a further access point could be created directly from the bypass into its southern verge, as with access point 1.
- 11.5 Site access point 3** – A further access directly into the verge of the A660 southern bypass.
- 11.6 Site access point 4** – From Leeds Road onto the grass area near the A660 roundabout.
- 11.7 Site access point 5** – From Lisker Drive.
- 11.8 Site access point 6** – From Peterhouse Drive.
- 11.9 Site access point 7** – Via Russell Farm if owner is agreeable.
- 11.10 Site access point 8** – Via Stubbings Farm if owner is agreeable. Also to be checked: that there is a feasible way though.
- 11.11 Site access point 9** - From Church Close in Pool.
- 11.12 Site access point 10** - From Chapel Hill Road in Pool.
- 11.13 There are 5 structures along the old railway line between the roundabout and bridge 5, as indicated in figure 39 (Br1 to Br5). Conditions of the structures are as described in the 'Structures and Ramps' section. Widths between parapets may affect site access routes and are as follows:
- Br1: 5m between timber parapet fences
 - Br2: 3m between timber parapet fences
 - Br3: 4.3m between timber parapet fences
 - Br4: 5.2m between timber parapet fences
 - Br5: bridge is missing, to be replaced.
- 11.14 Bridge 2 has fairly limited width available. It is therefore suggested that site access points 7 or 8 (via Russell Farm or Stubbings Farm) are used,

if permission can be sought, for construction of the track between bridge 2 and 5.

- 11.15 The land east of bridge 5 is yet to be surveyed but from map studies there don't appear to be any direct vehicular accesses to the proposed Greenway between Stubbings Farm and Pool.
- 11.16 As bridge 5 is missing and requiring replacement, the stretch of Greenway east of this point may be more easily constructed from the Pool end. The total length between bridge 5 and Pool is approximately 2.3km. Plant and materials will need to be manoeuvred along this full stretch from either Church Close of Chapel Hill Road.
- 11.17 Structures along the un-surveyed length east of bridge 5 may prove to be obstacles for larger and/or heavier construction vehicles. This will need to be considered and construction detail clarified as surveys unfold.
- 11.18 Conversations will also be needed with contractors before appointed to ensure their plant and build methodology fit with the access plans.
- 11.19 Plant required.** Ideally there should be no restrictions on the size of plant that contractors are allowed to use. The limitations on access for this scheme mean that materials will need to be transported quite a long way along the disused railway before they are used. The smaller the dumpers the more trips will be needed. Similarly the formation of the ramps will require significant earthworks and use of smaller excavators will lead to time delays. Typical examples of plant required are given in Appendix F. These include:
- 6 Tonne Dumper: width = 2.3m, height = 3.3m weight = 10 tonnes
 - Medium sized Excavator: width = 2.7m, height = 2.9m, weight = 13 tonnes.
 - Pavers: width = 3.05m, height = 3.4m, weight = 7 tonne
 - Rollers: width 1.2m, height = 2.7, weight = 3.5 tonnes
- 11.20 Site Compounds.** A significant area will be required to enable:
- Welfare Cabins to be positioned, containing toilet and eating facilities.
 - Storage of construction materials.
 - Manoeuvre and storage of plant.
- 11.21 Sites which may be suitable as compounds are indicated in Figure 39 and Appendix E. Note that landowners' agreements have not yet been sought for use of the sites.

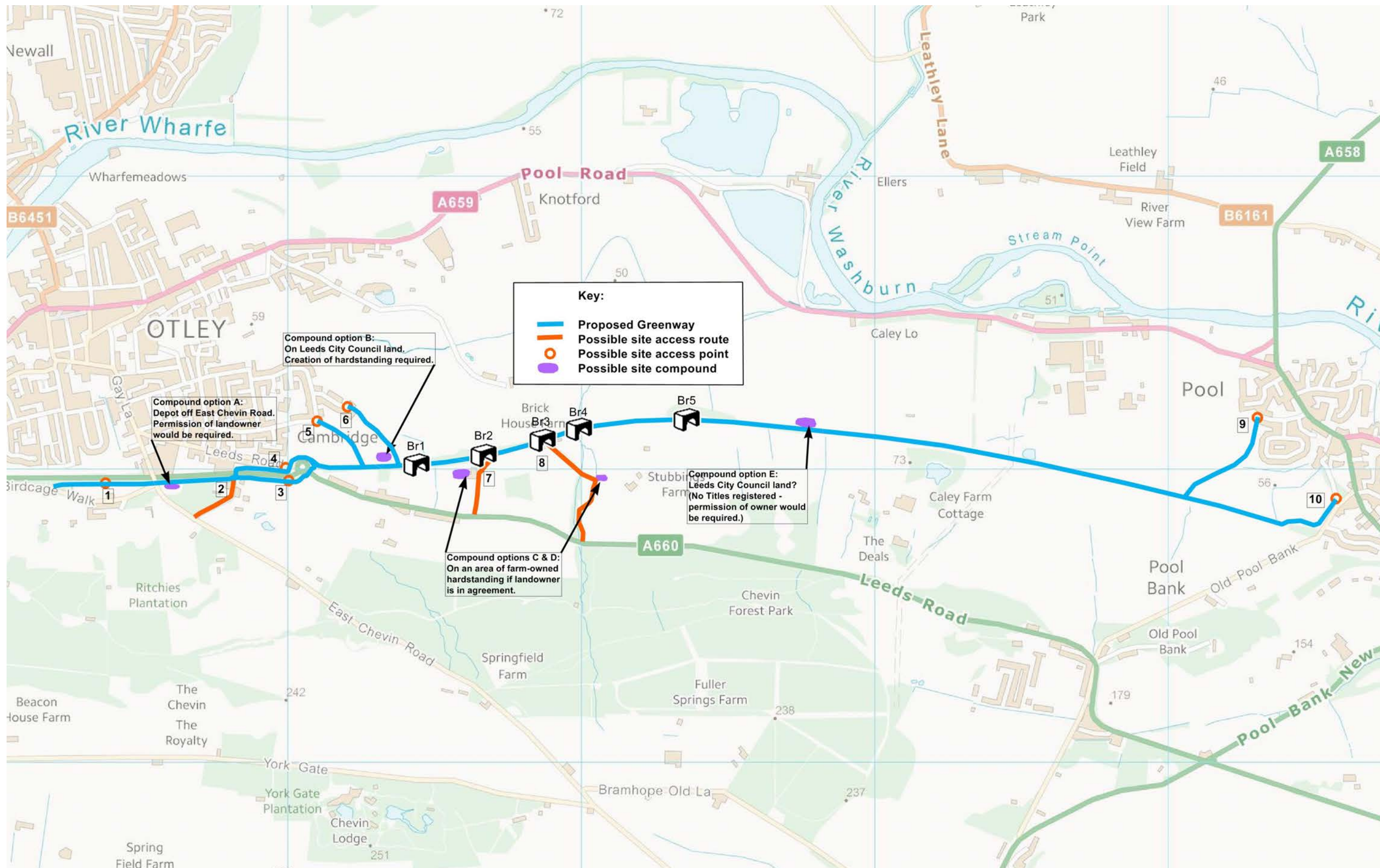


Figure 39. Construction site access and compound options

Otley to Pool - Wharfedale Greenway Phase 2. Maintenance Requirements - Time						
Assumptions: See below		Prepared by:	Mary Seaton			
		Length (km):	4.1			
Item Ref.	Description	Quantity	Unit	Unit Cost	Total	Resource
1	Quarterly land & yearly tree inspection regime - (1 day for 1 person) x4	1	day	176.25	176.25	1 person (tree inspection should be suitably qualified person)
2	Grass cutting/mowing, (assuming 2 cuts per year where required 1m verge) plus vegetation management and cutting back plus Tree Works 1	2	days	940	1880	Team of 3: tractor, strimmer, blower
5	Tree Works 2 - optional	0.5	days	1000	500	1 suitably qualified person -
6	Tree Works 3	1	days	1000	1000	Arboricultural Team
7	Reactive repair work, - minor path repairs, access seating etc	3	days	705	2115	2 people and material
8	Litter picks (<i>lots of variables but based on once a month</i>)	12	days	0	0	4 people; litter pickers/ bags
9	Annual repair materials allowance	1	Allowance	500	500	
10	Volunteer group materials contribution for annual managed workdays e.g. vegetation cutback,	1	Allowance	250	250	To include management of annual workloads and materials
	Total				6421.25	
Assumptions						
Larger items or quantities of fly-tipped waste removed by council .						
Trees and vegetation inside of path corridor only; does not include any allowance for spraying such as Japanese Knotweed.						
Path resurfacing not factored in at any point.; does not consider horse path						
Surface maintenance as per intervention standard - see schedule 2						
Tree Works 1 General pruning, cutback removal of deadwood, thinning of saplings						
Tree Works 2 Inspection and reporting by qualified arboculturalist						
Tree Works 3 Carrying out specialist tree works as required						
Boundary Repair Unsure of boundary treatments landowners may require; generally try to agree landowners become owners of boundary treatments once in situ						

Figure 40. Indicative maintenance budget

12. Maintenance Considerations

- 12.1
- The key to achieving a route that remains popular over the years to come will be the development of an effective maintenance regime.
- 12.2
- Future maintenance costs can be minimised by provision of a robust cycle track and drainage specification as proposed. This specification should need minor repair only for around the next 20 years.
- 12.3
- Maintenance can be further reduced by ensuring robust vegetation clearance during construction. This may mean cutting back saplings for up to 2m on either side of the track. This may make the corridor feel bare during the first season, but one of the primary causes of track repair is the growth of tree roots within the sub-base beneath the path surface.
- 12.4
- Going forward, to retain the usability of the track a maintenance regime should be put in place that ensures regular vegetation cut-backs, inspections and repairs. Regular, small interventions can reduce the risk of more serious problems arising. In some instances a “commuted sum” can be included as part of the capital construction costs that can be held by the Local Authority or third party to ensure ring-fenced funds over a period of time. This would specify an inspection regime and allowances for works and materials. Agreement as to the quantity of inspections and maintenance requirements will need to be agreed with whoever

maintenance is allocated to, but an example is given above.

- 12.5
- For the Wharfedale Greenway Phase 2, an estimate for yearly maintenance works is given as £6,421.25 per year for the entire route. A commuted sum, based on that figure, for a period of 30 years would equate to around £260,000 (assuming an interest rate of 2%).
- 12.6
- There are ways to reduce this figure including:
 - Undertaking more rigorous tree works during initial construction that might reduce tree management later on.
 - Local agreements to contractors to undertake tree works at a reduced rate.
 - Use of volunteer working parties to carry out vegetation clearance.
 - Combining tree inspections with work to known problems.
- 12.7
- Sustrans work with local volunteers to maintain and inspect National Cycle Network Routes in many locations across the UK. Interventions can range from making sure the signs are still in place to vegetation management and ditch clearance. The level of interest and work available is very much dependent on local enthusiasm. These volunteers can help reduce costs by reporting problems at an early stage and by helping out with voluntary work.
- 12.8
- If the route (or parts of the route) were to be taken on by the Local Authority’s Public Rights of Way team, then it may be included

in their wider maintenance programme.

- 12.9
- Please note that the above figures do not include costs associated with inspection and maintenance of the proposed bridges.
- 12.10
- The Sustrans Greenway Management Handbook is attached as Appendix G, which gives more information on how greenways can be successfully managed.
- 12.11
- Next Steps:
- 12.12
- Identify who is to maintain the finished route.
- 12.13
- Agree with them an amended version of the Maintenance Agreement.
- 12.14
- Agree with them the level of inspections to be undertaken.
- 12.15
- Agree with them the value of commuted sum, if required.
13. Direction Signage
- 13.1
- The Wharfedale Greenway needs to be sufficiently well signed so that it is easy to follow in both directions between the main destinations of Otley and Pool in Wharfedale, but also to find from key access points along the way. Overall, a balance needs to be struck between providing clear and consistent information, and avoiding visual clutter. There will also be a need for a mixture of signing on and off the highway.
- 13.2
- Signs should be placed at every access / exit point along the route. At those points where the track intersects with routes to nearby settlements / places to visit, signs (with distances) should be used. Signage locations are shown on Outline Design Drawings 10999-YH-DR-GA-01 to 21 and a signing regime is included in Appendix H.
- 13.3
- Sign styles and exact locations will need to be agreed with the LCC Highways and Public Rights of Way teams.
- 13.4
- The signs opposite are cycle direction signs as specified in The Traffic Signs, Regulations and General Directions (TSRGD). These have been used to create the signing schedule in the Appendix, but variations can be made for off highway locations if there is a desire to reduce visual impact. It must be remembered however, that for signing to work well, visibility and consistency are important.

- 13.5
- The route would ideally be incorporated into the National Cycle Network numbering system and so be included on NCN mapping and publicity.
- 13.6
- Signs will need to be adaptable so that they can be amended with minimum cost to include potential route extensions to Menston and should tie in with those proposed as part of Wharfedale Greenway Phase 1 between Otley and Burley.
- 13.7
- The Track is open (for most of the part) for cyclists, horse riders and pedestrians and it’s important that all users realise that the others have a right to be there and respect other users. On some routes Sustrans have erected signs to promote this such as the one shown below used on the Nidderdale Greenway.
- 13.8
- As well as formal direction signs, there will be other opportunities for marking the route such as mileposts and information boards. Map-based information boards could be placed at selected access points to help people appreciate what opportunities they have, and to familiarise themselves with the locality. These boards should be positioned to face the direction of travel. Weatherproof leaflet holders may also be provided. The longevity of information provided needs to be considered in relation to the likelihood of updating and general maintenance. Suggested locations for information boards are suggested on the detailed design. These signs have not been detailed in this report.
- 13.9
- Additional Highway Warning signs can be useful at the approaches to cycle crossing points. These have not been detailed here but may be requested by the Local Authority. Potential locations for these would be at:
 - A660 Leeds Road
 - Old Pool Bank
 - Pool Bank new Road
- 13.10
- Next Steps:
- 13.11
- Agree signing styles with Steering Group, Leeds CC and Bradford MDC Highways teams and PROW teams.



Figure 41. Direction sign with arrow 2601.1



Figure 42. Pointing direction sign 2602.1



Figure 43. Shared Use sign 956



Figure 44. Warning of Cyclists sign 950



Figure 45. A Shared Use sign utilising a bollard



Figure 46. Shared Use / Consideration sign



Figure 47. Signs on wooden pole



Figure 48. Covered information board giving route and local information



Figure 49. Example of signs set on a standard highway pole

14. Ecological Considerations

- 14.1 A Preliminary Ecological Appraisal was undertaken on the Wharfedale Greenway (as a whole) in May 2015. This gave a number of recommendations which have been taken account of in the scheme designs. The report also highlighted the need to undertake a number of further studies:
- 14.2 “A desk based Scoping Assessment to determine if there are likely to be indirect or cumulative impacts on the South Pennines Moors SPA as a result of the proposals;” This will require a letter to the SPA close to delivery date and is expected to indicate a low impact.
- 14.3 “Further surveys of bridges prior to any repair work and any trees to be removed that have features that could be used by roosting bats to inform detailed design and mitigation/ licence requirements.” This needs to be undertaken close to delivery date. Initial

inspections can be carried out at any time but if further surveys are required these can only be conducted between May and September inclusive and have a moderate cost.

- 14.4 “Reptile surveys may be required depending on whether long-term impacts would be anticipated on their conservation status – to be informed by the detailed design and management strategy.” To mitigate against this a continuous corridor of open habitat will be maintained along the route both during and after works take place. If the Planning Authority deem further survey work is required then such a survey would need to take place between April and September and would have a moderate cost.
- 14.5 The detailed designs for the route aim to retain mature trees wherever possible, retain rubble piles in situ and maintain a continuous line of taller vegetation (trees/hedgerows/ scrub) along the route. At construction phase a walk through will take place to identify measures that can help protect and enhance habitats including clearing more trees/scrub than to create more open habitats, clearance of non-native species and selective clearance areas of young trees/scrub on south facing embankments etc.
- 14.6 “The detailed design of the scheme should avoid potential bat roosts and any other important features identified above. Bridges should be designed to maintain the railways function as a green corridor and avoid the creation of substantial gaps. A habitat creation scheme and long-term management plan suitable to the local landscape character will need to be developed that:
- 14.7 Replaces and increases the area of open and species rich habitats along the route;
- 14.8 Recreates the structural and species diversity of the habitat mosaic along the route;
- 14.9 Avoids impacts on mature trees;
- 14.10 Maintains and improves the continuity of the corridor of hedgerow/scrub/trees along the route;
- 14.11 Work towards the long term eradication of non-native species (including Japanese knotweed, Forsythia, Spanish bluebell and snowberry), and ensure these species are not spread by path users;
- 14.12 Maintains and improves invertebrate habitats along the route;
- 14.13 Maintains, increases and improves reptile

- 14.14 Maintains, increases and improves habitat for any other notable species identified along the route in further investigations.” At construction phase a walk through will take place to try and effect the identified measures, such as those proposed in 12.5.
- 14.15 “Construction Measures: Prior to construction measures will be required to;
- 14.16 Ensure non-native species, including Japanese knotweed, are properly contained and any contaminated soil is disposed of in accordance with published guidelines to prevent spreading these species during construction;
- 14.17 Close excavations or provide escape routes for animals that may become trapped, especially overnight.
- 14.18 Store all chemicals and other potentially hazardous materials in secure containers to make sure they cannot be accessed by wildlife such as badgers. Make sure all site compounds are clean and tidy to avoid attracting wildlife to construction areas (for example by leaving food waste).
- 14.19 Avoid negative impacts on rivers or other watercourses and follow best practice guidelines such as the Environment Agency Pollution Prevention Guidelines;
- 14.20 Avoid direct harm to reptiles or amphibians through hand searching of habitat piles and pre-construction vegetation management;
- 14.21 Avoid disturbance to nesting birds by carrying out works in the appropriate season.
- 14.22 Some of these measures will need to be carried out in a specific order and during a specific season prior to excavation or site preparation works in order to avoid disturbance and allow species to disperse to new areas. It is anticipated that it will involve the clearance of scrub and trees over two stages in the autumn and winter before construction begins and in the spring/summer immediately prior to construction.
- 14.23 All contractors will need to be made aware of site information via contractor toolbox talks and if necessary the creation of an ecological risk register for the project including any specific locations where risks to local wildlife during construction are greater.
- 14.24 All identified measures will be taken into account within a Construction Method statement to be supplied by the contractors

14.25 In addition to the above report, in February 2018 a draft Preliminary Ecological Appraisal was produced specifically for the section of Phase 2 which has been accessible. Key points from this report are as follows:

14.26 The proposed route is unlikely to impact directly upon any statutory or non-statutory sites. It does form part of Local Nature Area, so long term management of the route will need to incorporate measures to maintain and enhance its ecological value.

14.27 Amphibians - There are common amphibians in the local area and it is advisable to do some further assessment for great crested newts as the habitat to be impacted is suitable and there are ponds within 2-10m of the track. Ponds within 250-500m of the route are indicated on the map in Appendix N.

14.29 Note that the GCN surveys are time limited and would need to commence in April if a possible delay in submission of a planning application until next year is to be avoided.

14.31 White clawed crayfish and water vole – active in the local area with the later likely to be along Hol beck. It is recommended, if planning to build new bridges across water courses, that the footings be set at least 5-8m from the edge of the bank on both sides to avoid impacts.

14.33 Bats – No known roosts along route.
Looking at the aerial photos there are some suitable looking trees which will require an assessment. Also a review is to be done of any existing structures as part of Phase 1

15. Contract Documents

15.3 Sustrans internal procurement advice suggests that the contract value threshold between using a short form of contract and a full form is £250k. The Wharfedale scheme will be well in excess of this sum, however, it is generally straightforward work with low risks on the Employer and Contractor, and does not require sophisticated management techniques. It is likely that the bridge works will form part of a separate contract and this will need further discussion with the Bridge Departments of Leeds CC and Bradford MDC when funding is identified.

16. Planning considerations

16.7 Revise Design and Access Statement as advised and Submit Full Planning Application.

17. Costing

- 17.1 A summary of outline costs is provided and full cost estimates for the project are contained in Appendix K.
- 17.2 Costs are split into costs for the off highway greenway elements , likely to be undertaken by Sustrans or Leeds City Council Public Rights of Way Team and costs associated with on highway elements which are likely to be undertaken by Leeds City Council's Highway Design Team.
- 17.3 There are a number of costs for which there are still question marks at this stage:
- 17.4 Costs associated with the link tracks to the highway network in East Otley and to Church Close in Pool have not been included, as it is assumed that these facilities will be provided as part of housing developments or as part of works to construct the East Otley Bypass. It must be ensured that design for housing sites and the bypass include the necessary elements of the greenway.
- 17.5 It is also assumed that housing developments and the bypass will provide signing to the greenway from the highway network in their vicinity.
- 17.6 Costs associated with ramps, crossings and signage associated with the A660 roundabout have been included. However these may

alter depending on:

- Whether the Otley Bypass is provided within the timescale of this project. If so then the roundabout will be fundamentally altered and all proposals will need to be included as part of the overall new road layout.
 - Whether Leeds City Council deems it appropriate to provide a Pegasus crossing near to the roundabout as suggested on the GA. The placement of this crossing is questionable in terms of sightlines and the footprint required for a Pegasus. If detailed designs of the crossing, suggest a location on the roundabout or bypass is not feasible then equestrian provision may need to be omitted west of the A660 roundabout.
 - The steering group may decide to pursue only one option for the approach to the roundabout and therefore one crossing and one length of track could be omitted from the project.
- 17.7 3500m of fencing has been allowed for. This assumes the project repairs identified poor fencing on the section of route surveyed. It also assumes replacement or movement of one of the two fences that currently provide the boundary for the disused railway where access to the land has not been possible. This cost adds significantly to the total.
- 17.8 Landowner agreements have been assumed

Item	Cost (£)
Track Creation	731,500
Access controls and fencing	141,500
Structures	115,000
Landscape and Vegetation	15,000
Additional Studies and Applications	50,945
Signage	2,240
Project Management	184,832
Contingency	105,619
Total Off Highway Costs	1,346,636
Highway Works (outline est. only)	176,000
Optimism Bias	304,527
Grand Total	1,827,163

to cost £10k for each of the three landowners that do not have development proposals in consideration. This cost may increase or decrease depending on final agreements, if accomplished.

- 17.9 A 20% optimism bias has been included in addition to contingencies. This is considered appropriate at this stage of development, where designs are relatively straight – forward but where unknowns still exist. This cost could reduce as more information is gathered.

18. Phasing and Duration

- 18.1 **Phasing.** Detailed phasing will need to be revisited once funding for the route as a whole or discreet sections has been finalised. This may also be influenced by its priority within the Local Transport Plans of Leeds CC.
- 18.2 The development of discreet sections of greenway is difficult for Phase 2 of the Greenway. There are no destinations or links between Pool and Otley that can be connected by providing part of the proposed track. The only sections that can be usefully provided independently are those that might be gained through the planning process at either end.
- 18.3 **Duration.** Again duration will be dependent on the requirements of the funding streams available. It is estimated that to construct the entire of Phase 2 would take around 24 weeks. However there are a number of factors that could greatly alter this estimation:
- A tight funding deadline may mean that multiple lengths need to be constructed at the same time.
 - Tree works need to be undertaken outside of the bird nesting season (end of February to beginning of October).
 - Ecology studies for reptiles and bats need to be undertaken at certain times of year (see section 12)
 - Works to abutments and bridge provision will need to be to the timetable of the Leeds CC. This will also be affected by bridge manufacture time plus traffic management requirements.
 - Planning Approvals are time limited and all works will need to fit within allowances.

19. Conclusion

- 19.1 The recommendations in this report, along with the fulfilment of the “Next Steps” will allow provision of a greenway between Otley and Pool
- 19.2 All proposals are subject to agreement being made with affected land owners and with the requirements of a Planning Application. Further amendment to proposals will be needed subject to these being completed.



Above and below - similar completed schemes



Figure 50 - Back page photo.jpg

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