

The 1825 Stockton & Darlington Railway: Historic Environment Audit

Appendix 2. West Auckland to Shildon.

October 2016 (2019 revision)

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NOTE

This report and its appendices were first issued in October 2016. Subsequently it was noted that some references to S&DR sites identified during fieldwork and given project reference numbers (PRNS) on an accompanying GIS project and spreadsheet had been referred to with the wrong PRN in the report and appendices. This revision of 2019 corrects those errors but in all other respects remains the same as that issued in 2016.

Introduction

This report is one of a series covering the length of the 1825 Stockton & Darlington Railway. It results from a programme of fieldwork and desk based research carried out between October 2015 and March 2016 by Archaeo-Environment and local community groups, in particular the Friends of the 1825 S&DR. This report outlines a series of opportunities for heritage led regeneration along the line which through enhanced access, community events, improved conservation and management, can create an asset twenty-six miles long through areas of low economic output which will encourage visitors from across the world to explore the embryonic days of the modern railway. In doing so, there will be opportunities for public and private investment in providing improved services and a greater sense of pride in the important role the S&DR had in developing the world's railways.

This report covers the second 5.1km (3.17 miles) stretch between the Gaunless Accommodation Bridge at West Auckland and Shildon (figure 1). It outlines what survives and what has been lost starting at the north and heading south east to Shildon. It outlines the gaps in our knowledge requiring further research and the major management issues needing action. It highlights opportunities for improved access to the line and for improved conservation, management and interpretation so that visiting the remains of the S&DR merits a trip from the other side of the world.

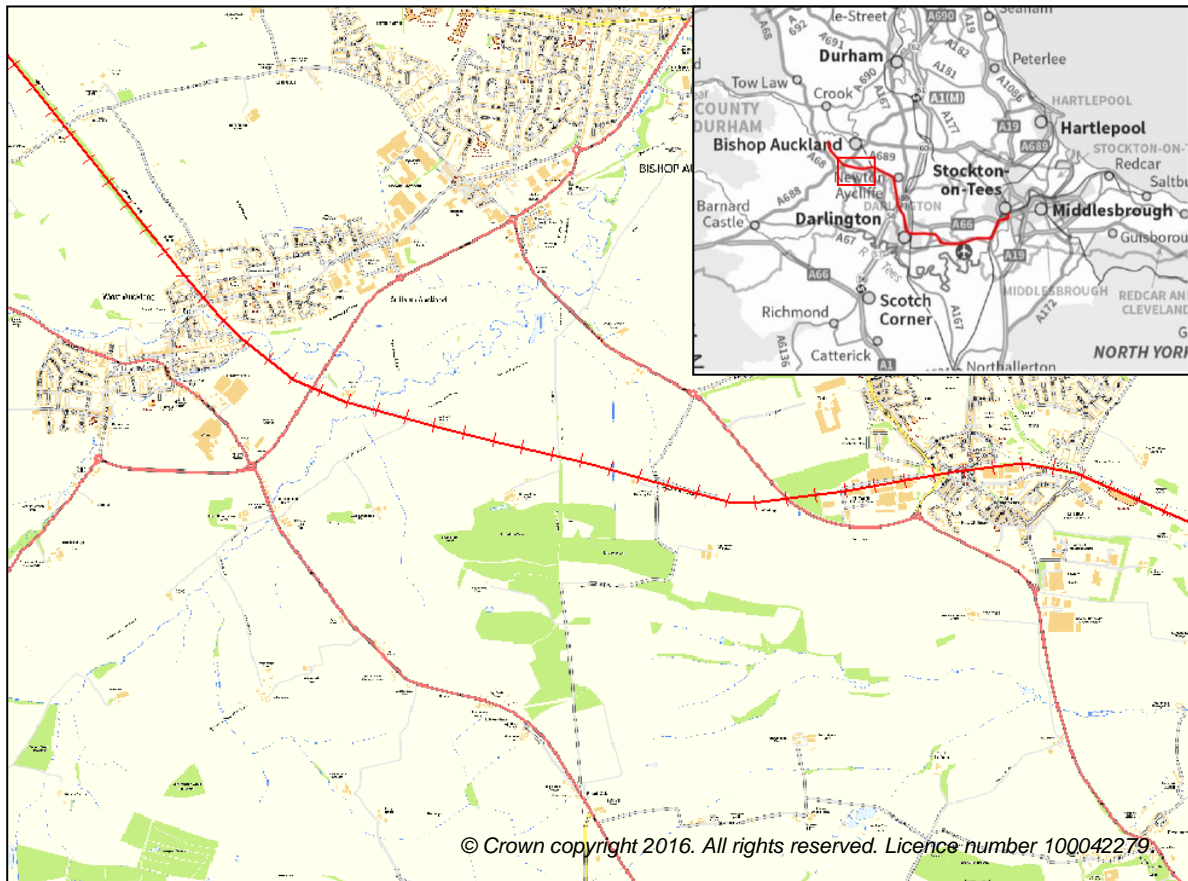


Figure 1. Area discussed in this document (inset S&DR Line against regional background).

Historic Background

At seven in the morning, on the 27th September 1825, 12 waggons of coal were hauled from the Phoenix Pit at Witton Park to the foot of Etherley Ridge, and pulled up the North Bank 1,100 yards by a stationary engine. Then the waggons descended Etherley South Bank to the road to West Auckland.

From West Auckland, this train of waggons was joined by another waggon, filled with sacks of flour, and then the waggons were led by horses, across level land, to the foot of Brusselton West Bank ready to be hitched to the rope pulled incline.

Thousands of people were waiting on the slopes of the ridge to see this spectacle of the 60 horse power engine stationary engine hauling the laden waggons.

Brusselton Incline, between West Auckland and Brusselton was 1,960 yards long, with an ascent of 150 feet; whilst the incline between Brusselton and Shildon was 880 yards long, with a descent of 90 feet. The use of the line was contracted out to private users and, at the foot of the incline, James Garthwaite supervised the hauling and coupling of the waggons as well as collecting tickets. Private users paid according to the weights of their loads. It follows that there must have been a weigh house and tally cabin, somewhere near the Gaunless River or Bankhouse Lane, where the loads were processed.

At Shildon, the train of waggons was coupled to the locomotive Locomotion No.1, along with 21 other waggons including the first passenger railway carriage Experiment before making its way to Darlington and then Stockton.

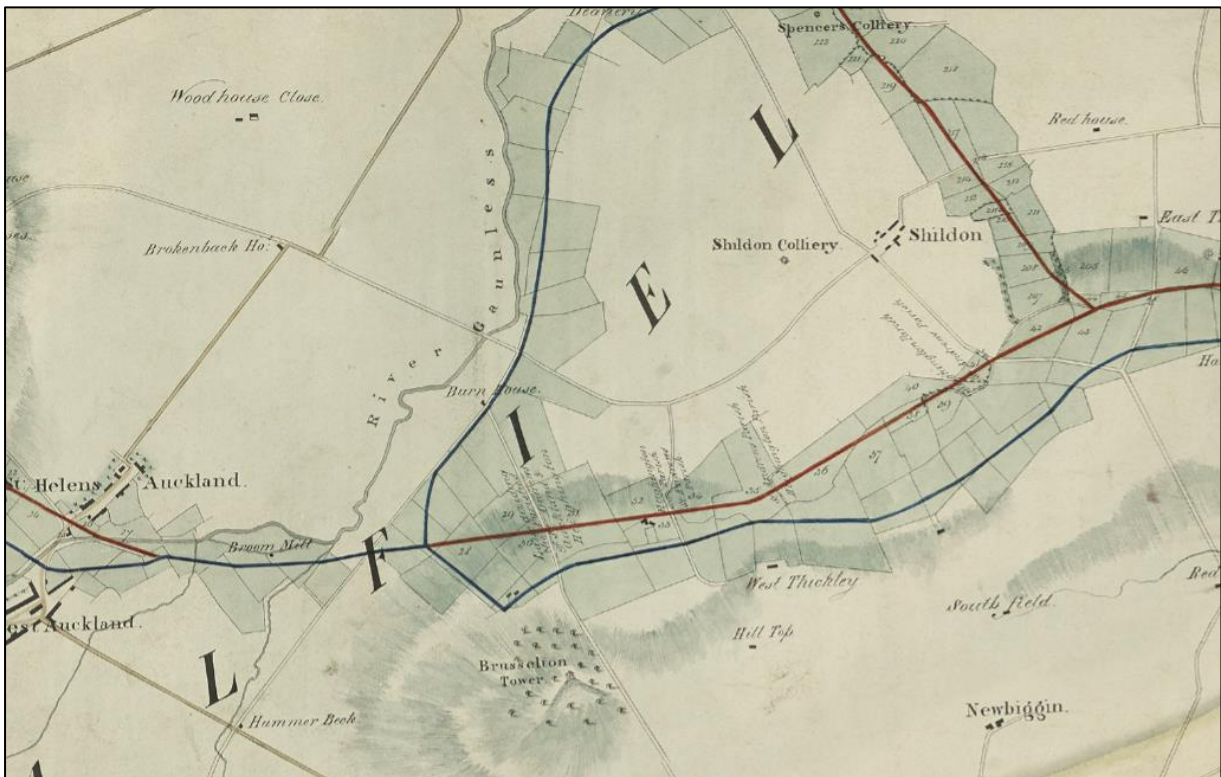


Figure 2. George Stephenson's map of the proposed S&DR railway, showing the route, in red, from St Helen's and West Auckland to Shildon and surveyed in 1822 (DRO Q/D/P/8/1). The blue line marks the route, as originally conceived by George Overton. A branch line headed north from Old Shildon to the Black Boy collieries. New Shildon didn't exist, but would become the locomotive manufacturing base of the S&DR from 1825.

1.0 S&DR TRACKBED FROM NEAR THE GAUNLESS ACCOMMODATION BRIDGE TO BURNHOUSE LANE

This is a well preserved scheduled trackbed through what was an agricultural area with a mill, but soon to be dotted with collieries. Survival includes two culverts, a now buried foot tunnel and a level crossing. A relatively level floodplain cut through by the modern Bishop Auckland bypass; the level nature of the terrain means that this stretch relied on horsepower before the waggons were hauled up the Brusselton Incline by rope powered stationary engine. The trackbed is bridleway as far as Broom Mill Farm when it becomes a footpath.

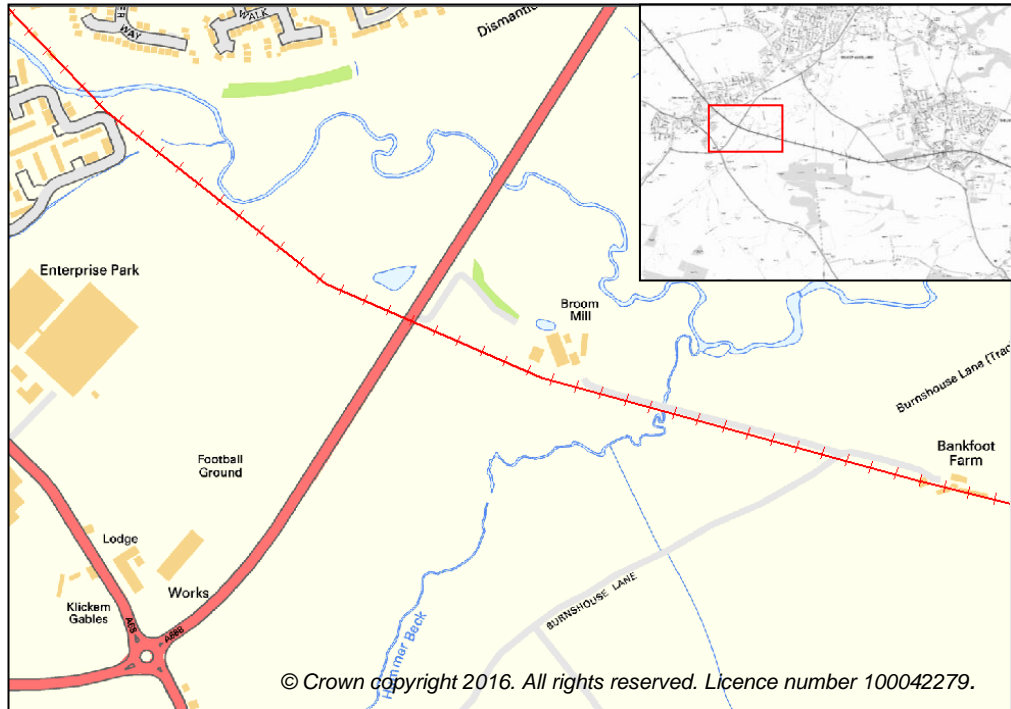


Figure 3. Gaunless Bridge to Burnhouse Lane via Broom Mill Farm.

1.1 What survives and how do we protect it?

This stretch is mainly embankment with stone boundary walls, two culverts, a footbridge and a level crossing. About 80m south of the Gaunless Bridge abutments there is a small beck, Oakley Beck, which runs below the embankment and this is carried by a stone S&DR culvert (SDR87). On the south side there are two metal hooks and a chain above the arch suggesting a metal gate was previously hung from them to prevent stock wandering through the culvert.

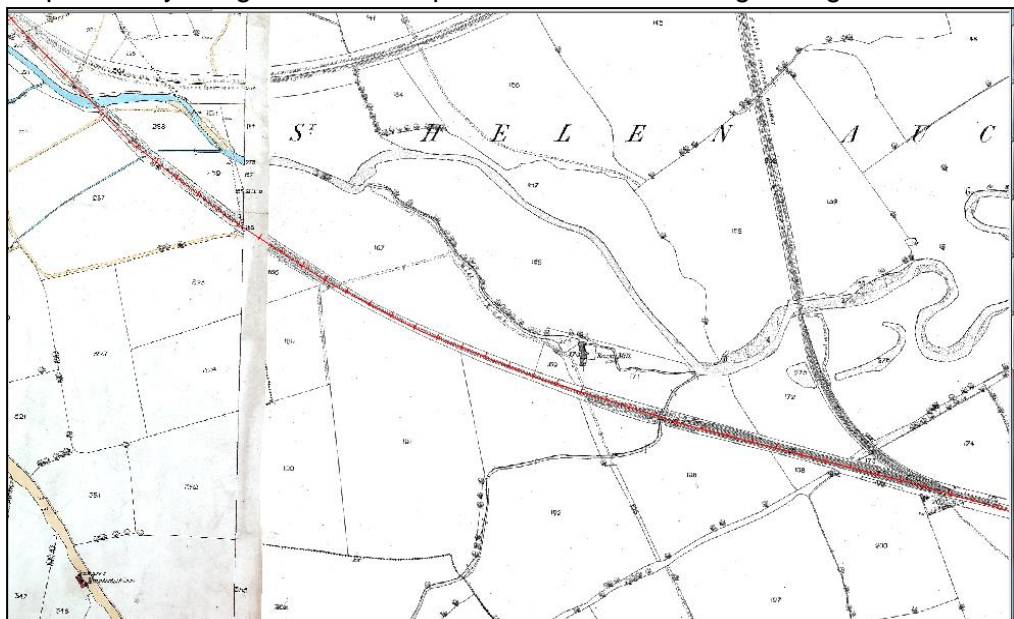


Figure 4. The same area in 1856 as shown on the OS 25" to 1 mile mapping series.



Plate 1. Original 1825 culvert; viewed from below the railway embankment on the south side (left) and the north side (right)



Plate 2. Stretch of stone boundary wall surviving

Taking you further: boundary walls along the S&DR

The S&DR property boundary had to be defined along its entire length. There were strict rules in the Act of Parliament, making it clear that the line could be no more than 15 yards (13.72 metres), wide except where there was a need for sidings and loading bays, in which case the line could be no more than 60 yards across (54.86 metres), without the landowner's consent. Landowners were also paid compensation for the land taken for the line and so delineating that land was important. Along this part of the line, the boundaries were marked with stone walls, often topped with arched or triangular coping stones. In other places, hawthorn hedging was used. Bills and receipts from the construction of the line in 1823-5, held in the Public Records Office, include quantities of 'arc' stones, which are presumably coping stones for the boundary walls and bridges.

There are intermittent stretches of stone boundary walls along both sides of the embankment. There is about 2.24km of stone walling surviving (both sides), but much of this is at ground level having been robbed out. Some survive to their full height about 7-8 courses high with triangular copes on top. As the embankment increases in height the boundary walls are to be found at the foot of the slope.

On the north side there is a stretch of walling that slopes. This sloping walling is used where the walls are abutting another structure. In this instance, there is an historic footpath to the south between two hawthorn trees as can be evidenced by the presence of two gateposts in the field. This appears to have been a crossing point from West Auckland to a fording point in the river and the construction of the railway would have obstructed it. Therefore, a small pedestrian accommodation bridge was provided which is now buried (SDR78). This can be

seen in the embankment on the south side where there is a small hole where the remains of the passage or tunnel can be seen. Only the top of the arch is visible in the hole and it is clear that the keystone has slipped. On the opposite side of the embankment, the bridge can be discerned amongst collapsed rubble, the sloping wall and a ramp leading towards it. Later sketches of the arch survive with the NER archive in the NRM.



Plate 3. Sloping boundary wall indicating an adjacent structure – in this case a long forgotten and buried accommodation bridge and ramp



Plate 4. Both sides of the buried accommodation bridge now buried beneath the embankment

Further along there is also the site of a possible level crossing. Again, this is marked by a stone gatepost with a metal hinge for a gate (SDR86).

Across the Bishop Auckland bypass (constructed to preserve the buried formation beneath the road) and where the line passes Broom Mill Farm, the boundary walls continue to survive

but they are threatened by a lack of maintenance and the dumping of machinery, disused farm equipment and waste.

Beyond the farm there is an attractive crossing known as Hummerbeck Bridge (SDR128). This fine sandstone bridge has been decorated with an arched string course and curved wing walls with rounded topped piers. The north side of the culvert is amongst trees and is suffering from vegetation growth and the rounded cope from the terminal has fallen off and is lying amongst the vegetation. Such copes are distinctive to a number of S&DR bridges and walling and so it is especially significant. However, the culvert could be relatively easily restored to its former glory. The wing walls along the riverside are not in such good condition and are suffering from tree growth and will need attending to as any future users of the right of way will be tempted to come down the bankside in order to obtain a better view of the culvert.



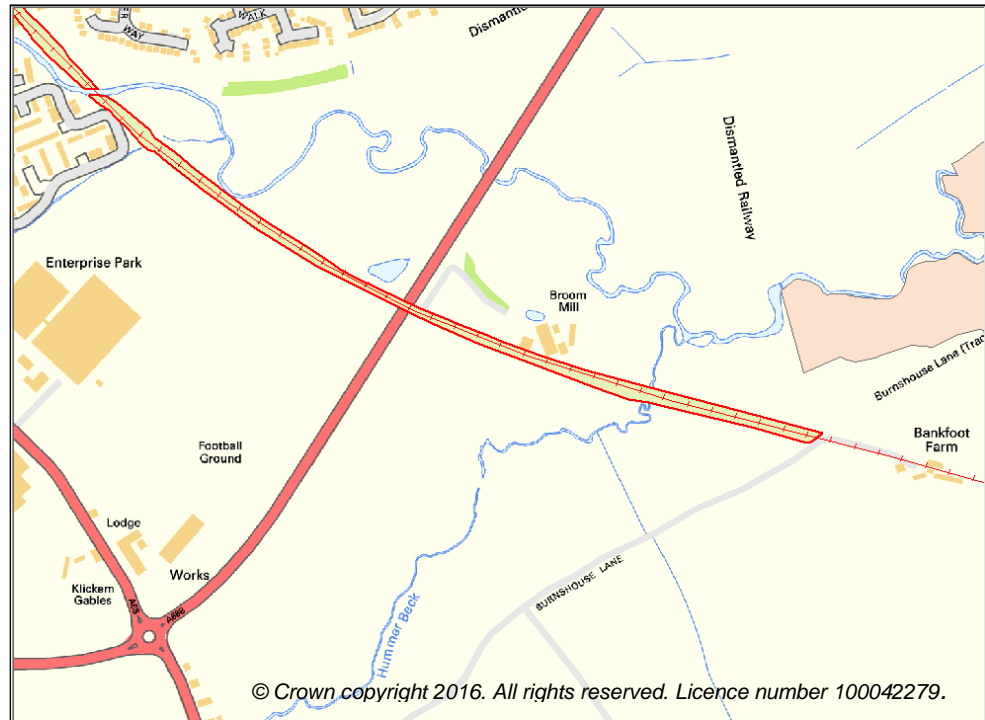
Plate 5. Hummerbeck Bridge (south side) and fragments of the north side of the bridge parapet knocked over and lying amongst vegetation




Plate 6. The north side of Hummerbeck Bridge.


1.2 Existing Designations


Figure 5.
Existing
designations
(the line is
scheduled as far
as Bankfoot
Farm)





1.3 Management and Protection


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The watercourses near West Auckland collect litter and dumped materials and will need regular cleaning. Like other parts of the line volunteer groups could be asked to adopt a stretch of line and keep it clean and the vegetation under control. The vegetation on the bank side may need cutting during summer.
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A young tree is growing out of the north side of the Oakley Beck culvert and needs removing.
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There are a few courses missing from the top of the Oakley Beck culvert on the south side but it appears stable.
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It may be appropriate to repair some stretches of boundary wall where survival is reasonably good and where good stretches can be joined together and accept the loss of those parts that have reduced to ground level over long stretches. Some walling has hawthorn trees growing out of it. Where the roots are damaging reasonably intact stretches of walling, the trees should be removed.
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The void created by the buried accommodation bridge or culvert is hazardous to users, especially horses, although being on the slope of the embankment it is not a well-used area. It is recommended that it be excavated archaeologically and if enough survives, conserved and re-exposed.
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Features such as the adjacent gateposts are clues to past uses and the movement of people and animals, but they are not protected and vulnerable to change. Similarly, the ramp leading to the north side of the buried footbridge is outside the scheduled area. The line of the scheduling therefore needs to be revisited.

1.4 Access.

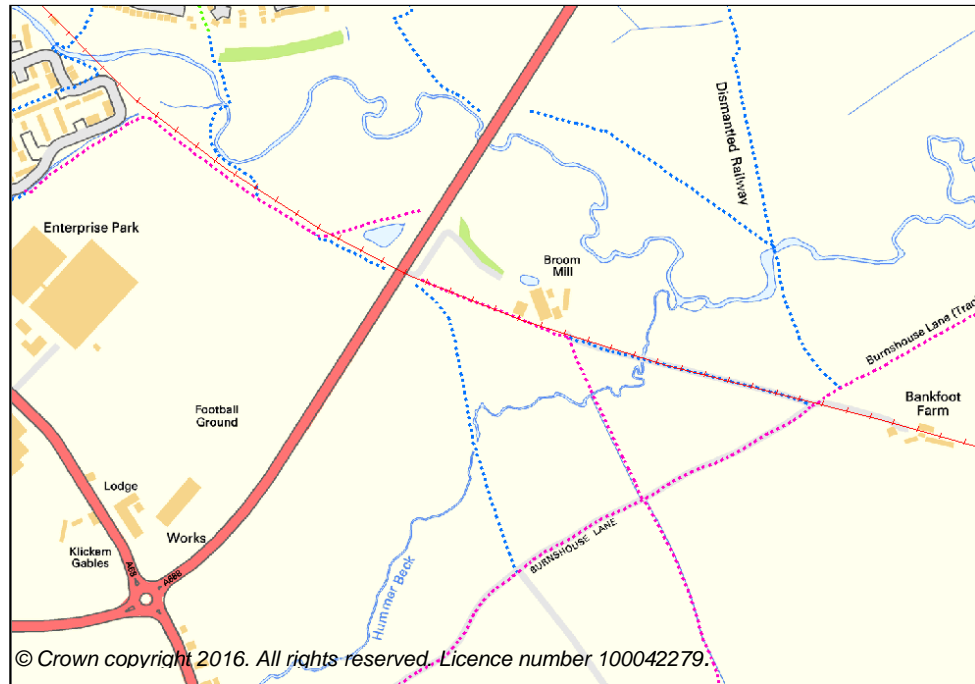


Figure 6.
Existing public
rights of way.

- 🚧 The trackbed is bridleway from West Auckland to Broom Mill Farm but there is no easy access on to the top of the embankment from West Auckland. It is acceptable for horse use and pedestrians (indeed loads were hauled by horses in 1825 along his stretch) but if the path is to be used by people with restricted mobility difficulties or cyclists, then a ramped approach will be required and a firmer surface in places.
- 🚧 Crossing the Bishop Auckland bypass is hazardous and surprisingly difficult.
- 🚧 The bridleway becomes a footpath at Broom Mill Farm and so there is currently no legal access for other users. The route would need to be upgraded to a bridleway, thus restoring its use by horse.
- 🚧 The path is also badly flooded and rutted in winter at Broom Mill Farm and is difficult to use.
- 🚧 The water quality should be tested at the Hummerbeck Bridge – it may be contaminated by the dumping of cars and old farm machinery and white goods at Broom Mill Farm.



- 🚧 The path alongside Broom Mill Farm is being used to dump cars, white goods and farm machinery amongst other unwanted items. It is consequently an unattractive place to walk. It also obscures the boundary walls and is probably damaging them. This stretch of trackbed is scheduled and dumping on a scheduled monument is not permitted.
- 🚧 From the bypass, barbed wire has been mounted along the top rail of the fence on the side of the bridleway at Broom Mill Farm and should be moved to the other side.



The creation of a rail trail along here would bring in additional customers for Broom Mill Farm if they are able to improve the environment. They may also want to consider re-opening the former footpath which ran from the farm direct to the path so that users have easier access. However, this is their decision but help in doing this might be a useful negotiating tool in having the area cleaned up so that it is fit to be used.



*Plate 7. (Top). Dumped cars and trucks at Broom Mill Farm (off the scheduled monument).
Plate 8. (Below). Old farm equipment along the path at Broom Mill Farm (on the scheduled monument)*

2.0 BURNHOUSE LANE TO BRUSSELTON VILLAGE

The line of the S&DR crosses the attractive Burnhouse Lane and briefly becomes the private gardens of what used to be S&DR Cottages. The line crosses former open cast land now used as farmland and heads uphill towards West Thickley Farm and Brusselton beyond. The tree covered Brusselton Hill overlooks the incline and was once topped by the 18th Century Brusselton Folly which was furnished with mosaic floors and used as a dance hall. This has since been demolished and trees have grown over its site. This area above Brusselton Farm was also the location of Brusselton quarry, once owned by the S&DR and where young lads were paid 8d a day to carve out two holes into stone blocks to form sleepers for the new railway. As the line increases in height there are excellent views back towards West Auckland and the Etherley Incline.

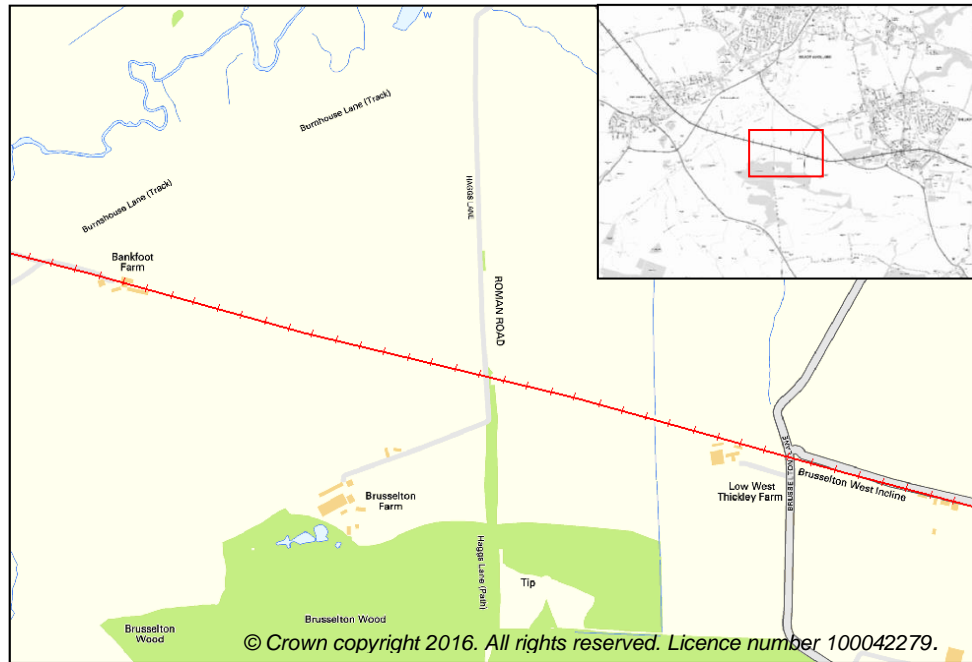


Figure 7.
Burnfoot Farm to
Brusselton

2.1 What survives and how do we protect it?

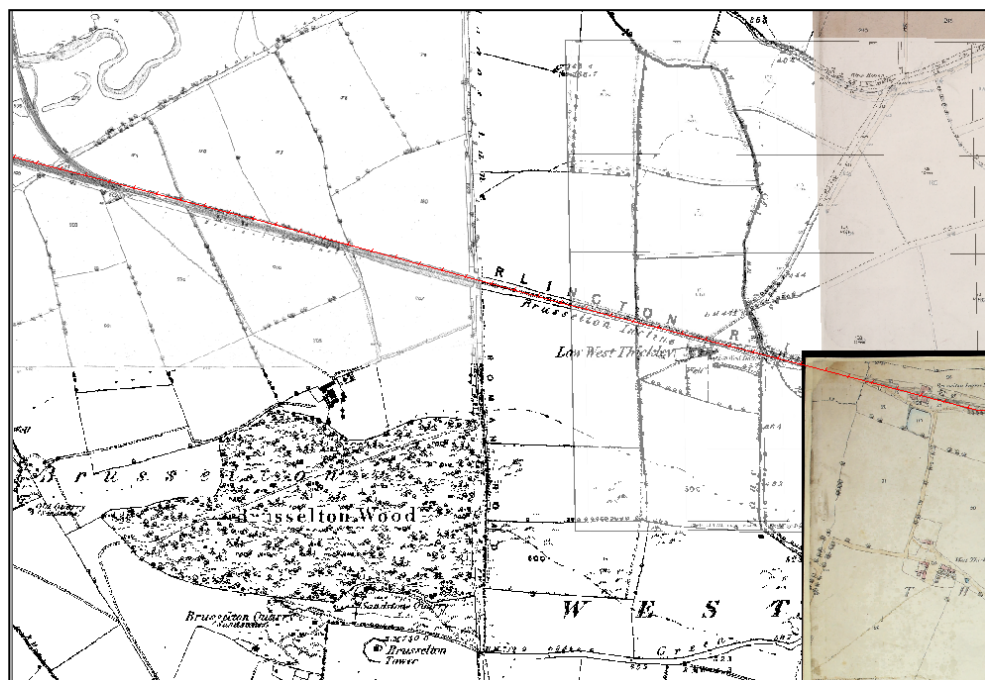


Figure 8. The
same area in
1856 as shown
on the OS 25"
to 1 mile
mapping series.

The trackbed appears to survive in 0.29km of the private land at Burnfoot Farm which was also the location of two S&DR buildings. The linear boundary of this land respects the original boundary of the S&DR and appears to consist of stone walling. The S&DR buildings survive but are much altered and extended and have lost their S&DR plaque installed in 1857. It is likely that it was here that waggons were hitched to the rope pulled incline to be hauled up to Brusselton and therefore this area may have archaeological information below ground and in the fabric of the buildings which could throw light on the workings of the incline, the location of weigh houses, evidence of early forms of experimental signalling and the nature of the accommodation provided by the S&DR. This is also the area that the passenger coach 'Experiment' ended her days in a fire. The coach was made redundant by Dan Adamson's new coach 'Perseverance' taking passengers between Shildon and Darlington from 1827, and so was turned into a shed at the foot of Brusselton bank, where it remained for a few years until it was accidentally destroyed by fire (Holmes 1975, 20). One wonders if perhaps there might still be the mangled remains of her skeleton lying in a verge amongst the bushes?

The line has in part been destroyed for the next 0.34km by surface mining in the 1940s and where confusingly pre-1825 hedge lines have been reinstated. Surprisingly part of this stretch up to and either side of Hags Lane Roman Road may have survived as an in-filled cutting as cropmarks on aerial photographs suggest the cutting lies buried below ground.

Where the line meets the footpath on Hags Lane, the trackbed went under the road and travellers (presumably railway workers) had to duck because the height of the road bridge was rather low. There is no evidence left of this bridge – the land on both sides of the road was mined by open-cast methods after the Second World War, and so the bridge may have been destroyed at that time. The field that the line went through on the approach towards West Thickley Farm has also been surface mined and so it is likely that the trackbed was destroyed here too.

West Thickley Farm appears to be an 18th century farm but its oldest walls are ruinous. The S&DR boundary walls survive on the north side and on the south side where they have been incorporated into the farm buildings and have been patched up. The north boundary walls have been repaired with split two hole sleeper stones from the 1825 trackbed.

Immediately east of West Thickley Farm and part of the incline are the sites of two bridges. These are only 10 metres apart and may have been the result of wayleave disputes about access requiring two similar structures so near to each other.

The Brusselton accommodation bridge is one of the best surviving accommodation bridges on the S&DR route. It was built to allow the farmer of 1825 access to his land between both sides of the line. It was, and still is, an attractive structure with its sloping wing walls terminated in coped piers; with a string course and prominent pilasters to the parapet corners. The steps down to the road are made of upcycled stone sleepers. The bridge has been vandalised, but conservation work is in hand to repair the damage.



Plate 9. Brusselton Accommodation Bridge, showing recent vandalism and stone theft to parapet and water tabling.

The trackbed crossed the road by bridge over Brusselton Lane, however this was demolished around 1954. The road was also widened on the east side at the same time. Scarring on the west sides marks where the bridge abutment was located.

The incline is in a good state of survival from West Thickey Farm up to Brusselton Village. The surface contains a number of stone sleepers. Just west of the Accommodation Bridge, there is one two hole sleeper and the rest are four holes. These were larger and heavier replacements, introduced in the 1830s, to allow chairs to be attached with four pins, to reduce movement of the rails. This is one of the only places where both sleeper types can be found in situ. Some still retain metal fixings which held the chairs in place which were used to carry the rails.

Further up the lane from the site of the road bridge, there is a small square stone with the initials S and R carved on to it at the foot of the incline bank. This is a parish boundary stone, and the letters refer to the parishes of Shildon and Redworth. It is likely that the S&DR Company would have had to ensure that such administrative boundaries continued to be marked, after the line was built.



Plate 10. The road bridge during its demolition in 1954 looking north, with the accommodation arch to the left (above). The same view in 2016 (below)



Plate 11. The parish boundary stone located at the south-east corner of the demolished road bridge.

The trackbed is in excellent condition nearly as far as Brusselton village. The boundary walls on the north side were restored by Sedgfield Council in the 1990s, but those on the south side still require conservation. These walls also act as retaining structures to the incline embankment. The walls here and at West Thickey Farm all survive to virtually full height.

Work by the Brusselton Incline Group exposed the sleepers on the trackbed surface and cleared vegetation away from the surface. This line is now in excellent condition, although a boundary stone is laminated and remains vulnerable. It probably once had the text, Stockton 20 ¾ miles.



Plate 12. The Brusselton Incline looking east with extant sleepers and an S&DR milestone



Plate 13. The boundary walls of the Brusselton Incline embankment also act as retaining structures. The north side was repaired in the early 1990's but the south side and localised areas are also in need of repair all the way to the top and the reservoir.

2.2 Existing Designations

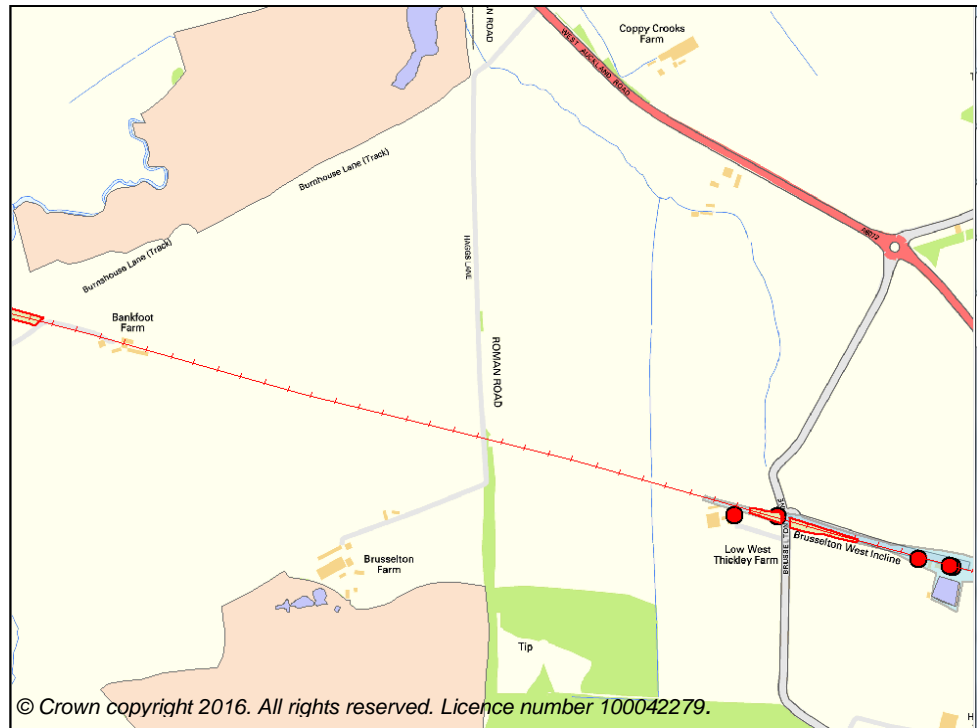





Figure 9. Existing designations. Parts of the incline are scheduled, while the accommodation bridge, engine man's house, engine house and a retaining wall are listed.

2.3 Management and Protection.


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Subject to the owner's permission (Brusselton Farm), the site of the cutting could be the subject of archaeological trial trench(es) to test the extent of the trackbed's survival.
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The boundary walls at West Thickley Farm and along both sides of the incline up to Brusselton village merit conservation as they survive to full height. They also act as retaining structures for the embankment. While the north side was restored in the 1990s, the south side is showing signs of failure. Repairs identified in the BOCE¹ report should be actioned. The remaining length of walling requiring restoration is about 0.69km.
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The extent of the scheduling is no longer sufficient to protect the trackbed as exposed by the recent clearance work. It needs to be extended towards Brusselton village.

2.4 Access.

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The line immediately east of Burnhouse Lane at Bankfoot Farm is private property and as it is being used as garden it is unlikely to be available for a rail trail. An alternative route will need to be found.
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The line then passes through land that was subject to surface mining in the 1940s. The line will in part have been destroyed, but it does appear to survive as a buried cutting further east. This should be tested by archaeological trial work and subject to landowner permission restoration considered.

¹ Blakett-Ord Conservation Engineering 2016



The land is used for pasture and arable, but a route could be negotiated across it. If that proves impossible, there is a pleasant alternative along Burnhouse Lane and up Hags Lane.

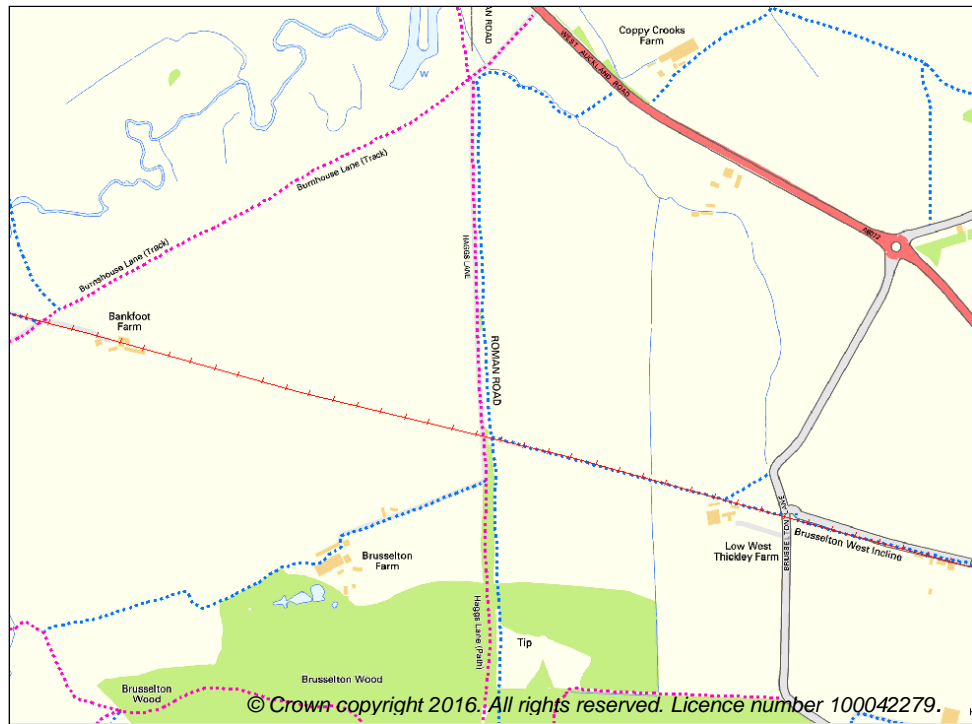


Figure 10. Existing public rights of way.



Access from Hags Lane to the adjacent field that the route ran along is via a gate and a stile so suitable for most users, but the field is quite muddy.



The line ran between two walls alongside West Thickley Farm. The route could stick to this official footpath or run along to the north where users would still see stone sleepers reused in the wall and then access the track a little further on. This would provide the owners of West Thickley Farm additional privacy if required in negotiations.



The current footpath runs along the top of the Accommodation Bridge at Brusselton. This currently has a stile and horses graze on top of the embankment. However, there are sleepers *in situ* and so the route is not suitable for wheeled vehicles or animals. The access from the top of the Accommodation Bridge to Brusselton Lane which needs to be crossed, requires steps. An alternative route would run north of the track bed and West Thickley Farm all the way to the roadside.



There was a road bridge that the S&DR incline used to cross Brusselton Lane. It was demolished in the 1950s. Sufficient detailed information exists to justifiably rebuild the bridge and reinstate the crossing, however its use would be limited to footpath users because of the presence of stone sleepers on either side. Any replacement bridge would be wider to accommodate the widened road.



On the approach up to Brusselton, the access on to the trackbed is via a flight of steps. Again, the presence of stone sleepers means that the top of the trackbed is not suitable for wheeled vehicles. The boundary stone is also vulnerable to knocks and so wheeled vehicles are best kept away. Brusselton Lane is a quiet alternative route that runs alongside the trackbed and will take users up to Brusselton village without obstacles.



It is possible that this part of the line will be especially popular and so options for car parking in a place which avoids archaeology and maintains the peace and tranquillity of local residents may be desirable.

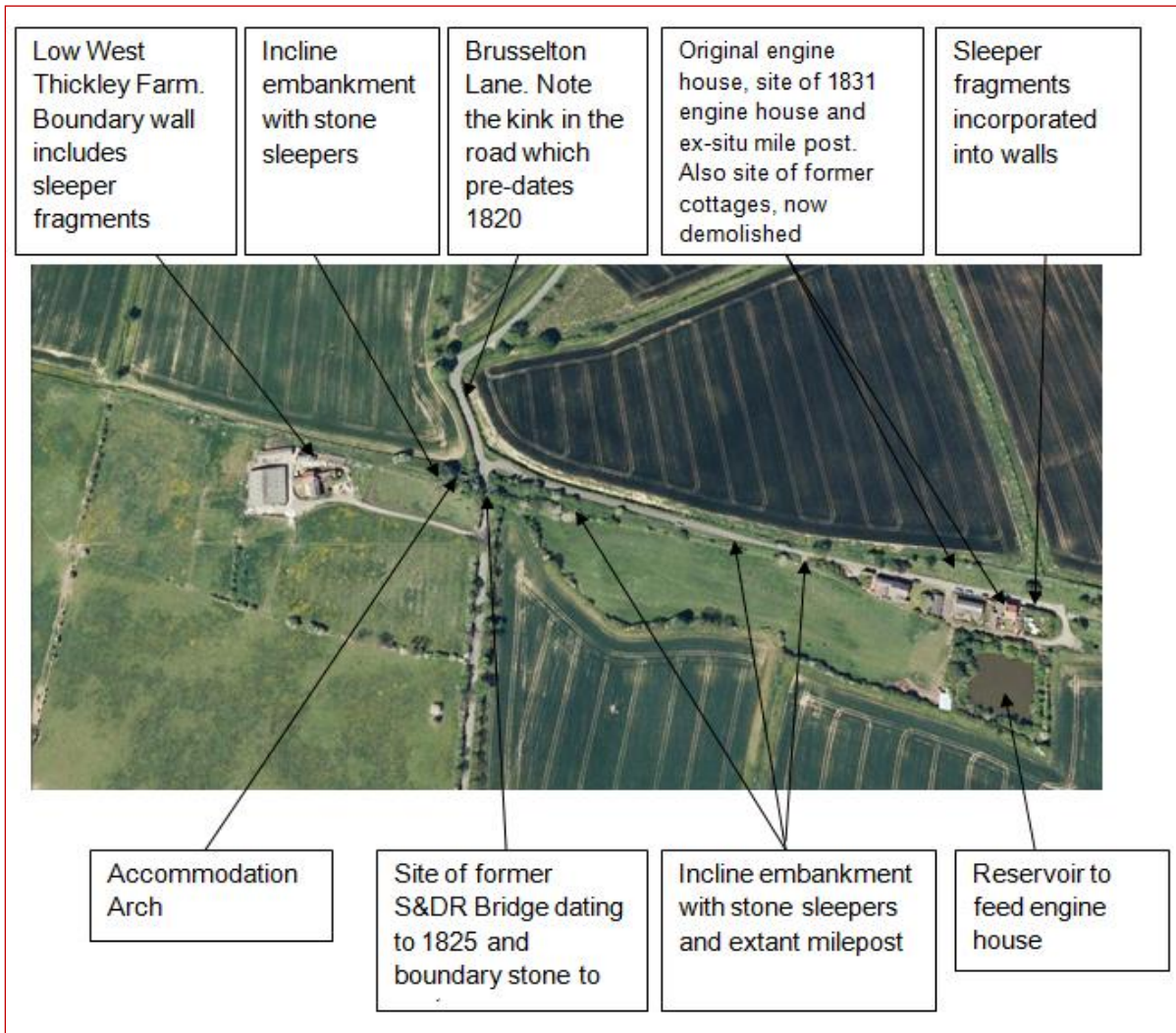


Figure 11. Surviving heritage assets at Brusselton

3.0 BRUSSELTON VILLAGE TO SHILDON

Brusselton village grew up around the engine house and the engineman's house which were built here to operate the incline from 1825. The settlement grew in size from its founding in 1825 through to the late 19th century, with houses built on both sides of the incline (now the road), most of which were demolished in the second half of the 20th century. The demolition area is now marked by a large grassy bank which presumably contains the demolition debris from the houses. The village now consists of a row of houses surrounded by arable land and the route of the incline is now the access road into the village. The village is a dead end for vehicles, but walkers can pass through and walk to Shildon.

I never witnessed so great a crowd. The western country seemed to have poured forth its population. From Brusselton to Stockton the whole line was thronged with spectators, and at every lane end immense numbers were collected.' (Extract from Francis Mewburn's diary and cited in Young 1975, 111)

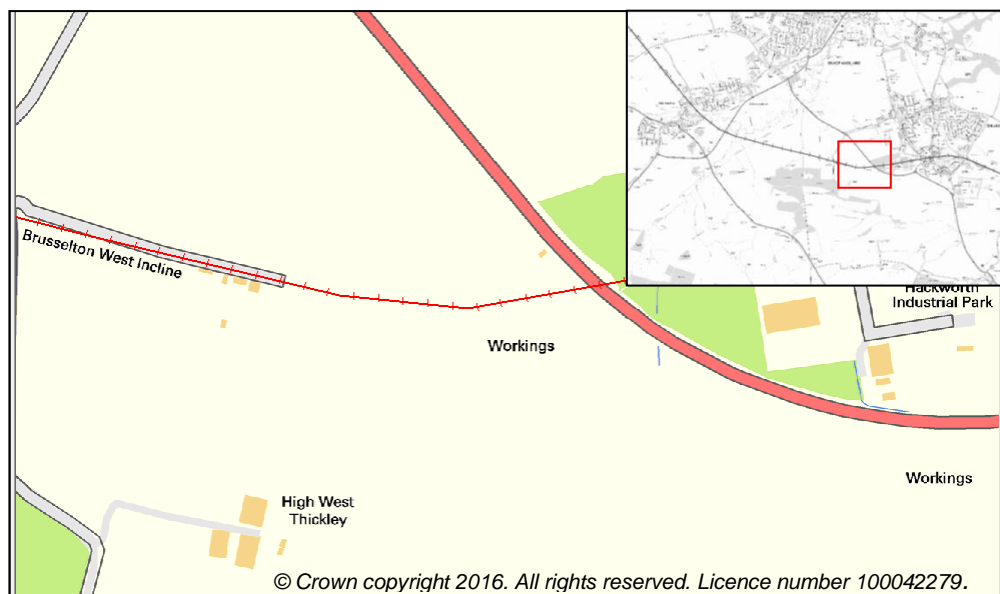


Figure 11.
Brusselton to
Shildon.

3.1 What survives and how do we protect it?

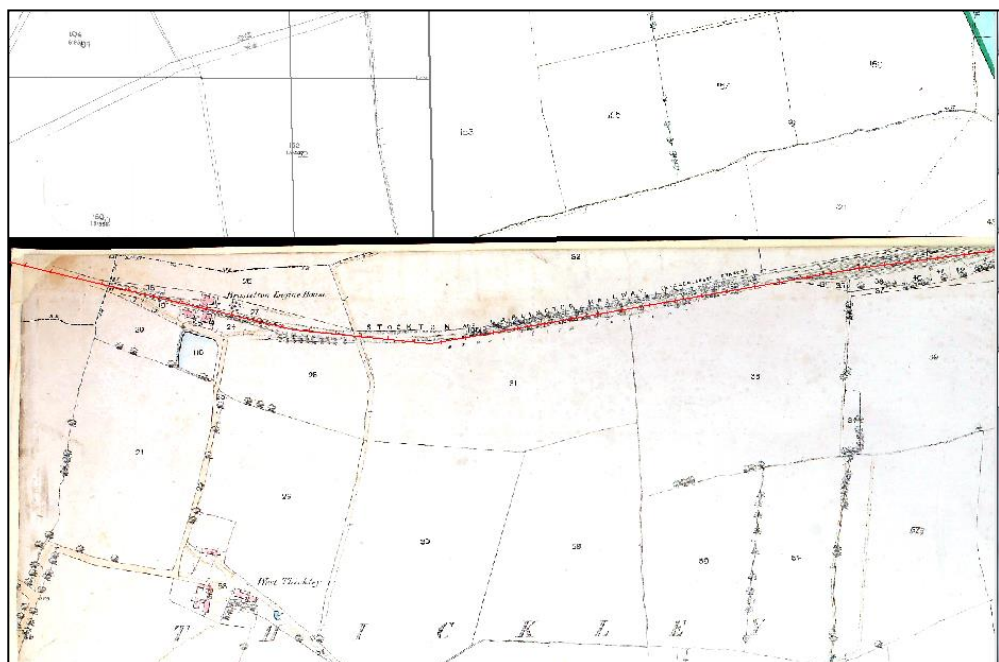


Figure 12. The same area in 1856 as shown on the OS 25" to 1 mile mapping series.

The space west of the first house after the exposed incline is the site of the Methodist Chapel. Methodism was important to many of the railway workers, including Timothy Hackworth. The rest of the remaining red - brick houses were built c.1900 for railway workers.

The S&DR boundary walls open out to enclose a wider area at the top of the incline to accommodate the engine house and engine man's house. These walls are in good condition. On the south side the retaining/enclosing walls extend out to enclose the square reservoir (SDR112) which is currently not part of the scheduled monument but is within the conservation area. The reservoir provided water for the steam engine which powered the rope incline.

The most significant buildings are the remains of the engine house (HER8620) and the Engineman's house (SDR111), both are listed buildings. These were S&DR properties built in 1825. In 1857 the Engineman's house was labelled with a ceramic plaque; it was given the number H1 by the S&DR and this can still be seen. Both groups are listed buildings.

The Engine and Engine House

The stationary engine was ordered in November 1823 from Stephenson's son's newly created company, Robert Stephenson & Co. This was the company's first big order.

It was Robert Stephenson, a mere lad at 20 years of age, who designed the engine before he went abroad (Young 1975, 129). The newly-appointed S&DR Resident Engineer, Timothy Hackworth, spent many hours and probably some blood, sweat and tears ensuring that everything at the incline worked well in time for the opening day on the 27th September 1825.

The building of the engine house at Brusselton was put out to tender on the 1st May 1824, and included the construction of Etherley Engine House. The tender was advertised in the local press, by Robert Stephenson & Co, referring prospective masons and joiners to contact Thomas Storey at Saint Helen's Auckland, where they could view the plans.

The Engineman in 1825 was William Mowtrey, who was paid as a sub-contractor 1 ¼d to draw the loaded waggons and haul the empty ones, and to maintain them. He was also responsible for paying his assistant's wages, the fireman's wages and to source supplies. The Company reverted to a waged structure of 22 shillings a week and 18 shillings for the assistant, presumably because it cost less, but then reverted to subcontract terms at a reduced tonnage rate.

The engine cost £3,482 15s. It had two 20 feet by 8-foot diameter boilers, feeding two 30 horse power engines with 30 inch cylinders (Slack and O'Neill 2015, 29). Originally they drove a single drum, mounted on a vertical axis which wound the rope around it. The company was also commissioned to provide winding gear, which spun the rope around drums, sitting above the line within a stone built shelter. In addition, boilers measuring 8 feet in diameter and 20ft long were installed. It was a simple hemp rope, 1850 yards long, which hauled the waggons up the incline at a steady 8mph. A shorter, 825-yard length, lowered the waggons to New Shildon. These were both supplied by John Grimshaw of Bishop Wearmouth in 1822, at a cost of £33.13.0, and were ordered by George Stephenson.

Another sub-contractor, Rowland Webster, won the contract to provide the rope for the inclined planes at a rate of a farthing per ton of coals, with a minimum tonnage guaranteed (Slack and O'Neill 2015, 29).

The engine, boilers and winding gear were to be a source of trouble, and constantly needed to be repaired. It was the job of one man to stand by the drum with a crow bar to make sure the rope coiled around the drum smoothly. In fact, the rope often coiled around irregularly resulting in sudden slack which made the waggons jerk backwards, the rope would break and the contents of the waggons would spill in all directions (Young 1975, 129).

Timothy Hackworth carried out major modifications in 1826 which increased the amount of traffic the incline could handle threefold with half the power. His alterations also included a number of safety features to improve the braking (Young 1975, 131).

He replaced the engine in 1831 with a more powerful, 80 horse power one built by R & W. Hawthorn of Newcastle. This engine could haul six sets of waggons an hour which was a considerable improvement (Young 1975, 133). Due to their large size, the new engine house and chimney had to be sited on the north side of the track. The drum house spanned the track, linking the new engine house with the original one.

The new arrangement was a great success, ably run by Robert Young the new engineman, who worked 12-16 hours a day for 22 shillings a week and is said to have worked for 22 years without a break (Slack and O'Neill 2015, 29). However, the engine house cottage was occupied by Thomas Lamb in 1838, but still owned by the S&DR. The house has been extended on the west side (the side with the plaque) and to the rear, but without these extensions it is identical to the Engineman's House that once existed on the Etherley Incline. There are two front doors here and so it must have housed two families. At Etherley, the Engineman and his family lived on one side and the blacksmith and his family on the other. It is likely that there was a similar arrangement here.



Plate 14. The second engine house at Brusselton built in 1831



Plate 15. The Engine House seen from the south across the reservoir (above left), and from the north (above right)



Plate 16. The engineman's house with the blacksmith's house (?) adjacent from the north

An S&DR milepost (SDR102) has been inserted into the dwarf garden wall of the Engineman's House, which marks 20 ½ miles from Stockton. Although not in its original position, it is in the right area because it is about that distance to Stockton from here.

The tall garden walls around the Engine House incorporate the remains of a number of split sleeper stones (SDR115). To the rear of the Engine House the reservoir which provided water for the steam engine survives intact, but is not legally protected (other than being in a conservation area). Some of the reservoir retaining walls also include split sleeper stones, suggesting an original earth embankment was subsequently repaired and retained with stonework.



Plate 17. (Left): The S&DR Milestone marking 20 ½ miles to Stockton and now incorporated into a garden wall of the Engineman's House. (Centre): split stone sleepers reused in the garden wall of the Engine House. (Right): the walls of the reservoir which also incorporate split sleeper blocks.

To the east of Brusselton, the incline appears to survive as a cutting and there are stone sleepers on display (SDR118). However, this may be a fabrication of the 1975 celebrations. The cutting may have been re-cut out of the demolition debris created after forty-two Victorian terraced houses were demolished in 1971. The sleeper stones are certainly not in their original position because some have been laid back to front.

Local sources suggest that there was a small loading platform and sidings located here until the 1950s.

The decline and closure of Brusselton Incline....

From this point onwards the incline started to descend towards Shildon. This was shorter than the stretch from West Auckland to Brusselton; consequently, a shorter length of rope was required to deliver the waggons to Shildon, and a smaller drum required in the engine house to wind the rope around.

Brusselton Incline had largely been made redundant when the Shildon Tunnel Branch was constructed in 1842 to meet the growing traffic flows. However, the formal closure was not announced until 13th October 1858 (Slack and O'Neill 2015, 33).

In 1859 the engine was sold by private contract (Darlington & Stockton Times 23.7.1859), but the inclines, unlike those at Etherley, were maintained as a contingency route until the 1880s, in case the Shildon Tunnel became blocked.

Further east, there is an accommodation bridge known locally as the Milk Bridge (SDR117). This was designed to allow the farmer to take his or her cattle across the incline. Its decking was removed in 1958/9 but the abutments survive on the west side, but one is missing on the east side. A long ramp approached the bridge from the lower fields on the south side. The wing walls include reused sleeper blocks and so have been repaired since its construction. The 1825 route east of Brusselton Village is a footpath continuing between boundary walls through a modern concrete underpass beneath the A6072 as far as Shildon and the start of the Industrial Estates.



Plate 18. The imposing remains of the Milk Bridge on the eastern side of Brusselton Incline. An original structure currently with no legal protection other than being in a conservation area.

3.2 Existing Designations.

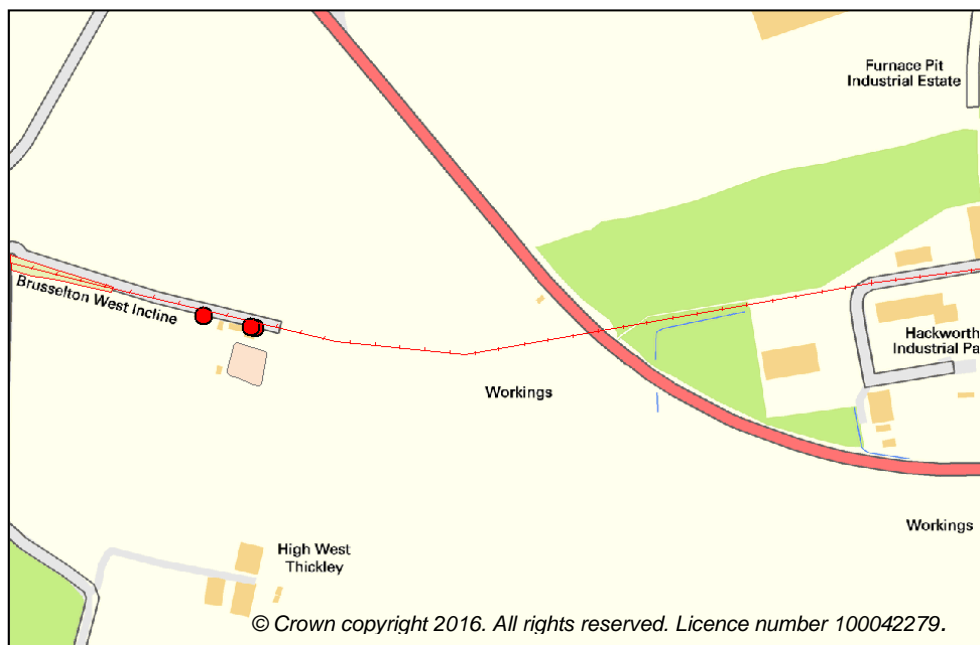

















Figure 13.
Existing
designations

3.3 Management and Protection.

-  The scheduling needs to be extended to include the recently exposed trackbed immediately west of the village.
-  The scheduling also needs to be revised to include the reservoir and retaining walls.

-  Trial trenching or Ground Penetrating Radar (or both!) of the line beyond the trackbed would help to establish survival below the line and the extent to which scheduling should include remains below the tarmac.
-  Trial trenching should also establish the extent to which the cutting east of the village reflects the original line or a 1975 reproduction. It should include the site of the platform as a possible area that might be exposed as part of an interpretation strategy for the village.
-  It is not clear how the engine house was fuelled and watered and there is very little information on the layout of the first engine house. Trial excavation in front of the engine house where the 1831 building stood would help to better understand the processes. This could be extended to the lane between the engine house and the reservoir.
-  All areas of trial trenching could be run as community excavations with the involvement of the Brusselton Incline Group and local residents.
-  Subject to the results of the trial trenching, the scheduling may need further revision and decisions made on what to restore for public viewing. Clearly the road needs to be maintained for local residents and so remains found below the tarmac will have to be covered.
-  The Milk Bridge should be listed or scheduled and include its ramp/approach.
-  The Milk Bridge requires consolidation on its east side where the stone has been robbed. It does not require a new decking although sufficient photographic evidence remains to accurately reinstate this if a practical reason or function was to be identified.
-  The milestone in the garden wall should be included in the listed building description of the engineman's house so that its future location is managed.
-  Statements of significance should be prepared for the Engineman's House(s) and the Engine House prior to any consents being given for works.
-  The incline trackbed needs ongoing maintenance to avoid it becoming overgrown again.
-  The reservoir is in the ownership of Shildon Town Council and is currently fenced off and locked. Is this necessary?
-  Boundary wall repair is required east of the Milk Bridge towards Shildon, a length of walling totalling 0.7km although restoration of walling can be selective within this amount as some is in very poor condition and resources should be concentrated where existing walls can be saved.
-  The interpretation panels require updating. There are sufficient historic images to make a smart phone application of how the area looked at various times possible. A more detailed approach to interpretation should follow after trial trenching and be part of an overarching interpretation scheme for the whole S&DR.

3.4 Access.

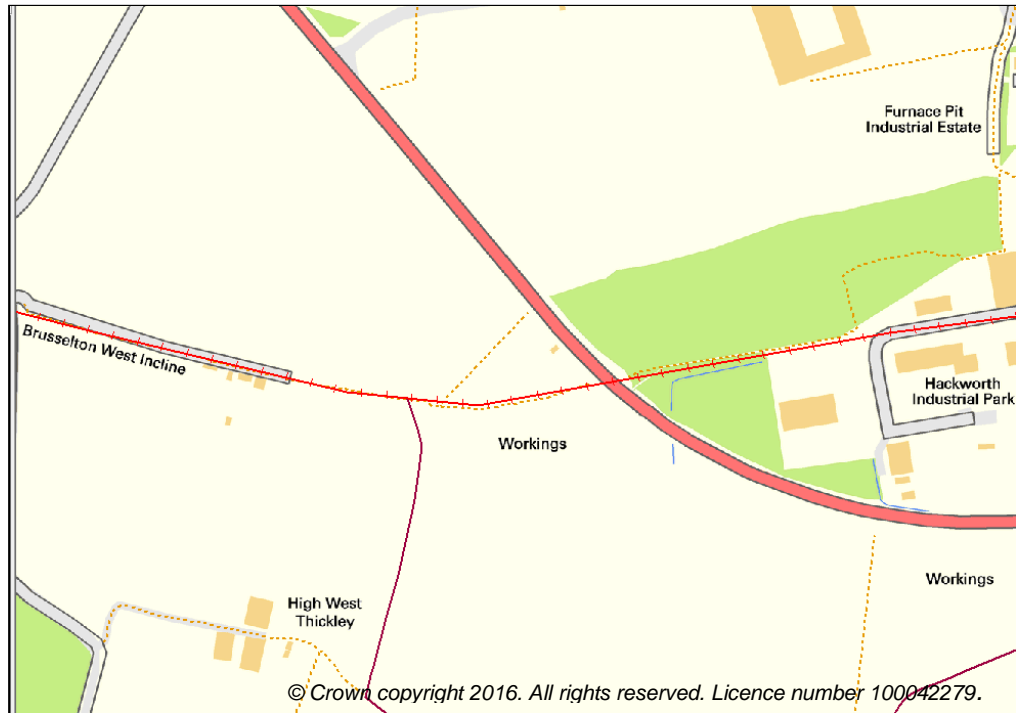


Figure 14. Existing public rights of way.



The route is entirely owned by Durham County Council, although the legal status is footpath. The road through Brusselton village is quiet and suitable for walkers, cyclists and people using mobility scooters, although there are parked cars belonging to local residents. However, where the stone sleepers are exposed, access is restricted for wheeled vehicles. The incline of the path that leads towards the reservoir may not be suitable for mobility scooters.



Plate 19. Left: Good quality S&DR boundary walls in places, but the footpath would require widening if more users are to be able to cycle along or use mobility vehicles. Right: Ongoing vegetation clearance will be required to keep the path open



Vegetation clearance needs to take place to keep the path open – it is very narrow in places, especially on the path between Brusselton and Shildon. If widening is to take place it should not disturb boundary walls or drainage ditches.



The underpass is an unwelcoming structure covered in graffiti. It needs to be made into a more attractive experience for users. This is potentially a good place to welcome visitors to the railway town of New Shildon.



The scrap yard/recycling centre immediately adjacent to the south side of the track and path, has scrap spilling on to the path and the metal boundary fencing is bucking under the weight of the scrap. The footpath here has plastic exposed where it has worn through.



Plate 20. Scrap yard, unattractive boundary, spillage and litter



Plate 21. The footpath is worn and needs resurfacing

Summary recommendations: St. Helen/ West Auckland (Gaunless Bridge) to Shildon		
Opportunities to find out more gaps in knowledge		
Task	Where	Priority
Research led excavation with community involvement (and owner's consent) could uncover more information about the form of the engine house and how it worked and engineman's and blacksmith's way of life through garden excavations and excavations in front of the engine house. It could also throw more light on Robert Stephenson's first engine house.	Brusselton Engine House and Engineman's House gardens	Low
Trial trenching or Ground Penetrating Radar (or both!) of the line beyond the trackbed would help to establish survival below the line and the extent to which scheduling should include remains below the tarmac.	Brusselton Village	Low
Further research is required to better understand how and where waggons were hitched to the incline and where facilities such as weigh houses were located and from what date. Research led excavation could uncover more information about the hitching up point from horse to incline plane powered by steam combined with additional archival research. Link with similar research at Phoenix Row.	Bankhouse Farm	Medium
Statements of significance are required for the following buildings. The results should feed into the designation process:	Engine House and Engineman's House, Brusselton	Low
	Bank House Farm older properties (if anything surviving) – site of weigh house	Low
Trial trenching should also establish the extent to which the cutting east of the village reflects the original line or a 1975 reproduction. It should include the site of the platform as a possible area that might be exposed as part of an interpretation strategy for the village.	Cutting east of Brusselton	Low
More evidence is required of what form the 1825 level crossings took and whether the same approach was always taken from the outset. The small level crossing between two fields separated by the formation could be evaluated archaeologically and also offer an opportunity for volunteer work to excavate it.	Formation between bypass and Oakley Beck	Low
Subject to the owner's permission (Brusselton Farm), the site of the cutting visible as a crop mark in previously surface mined land could be the subject of archaeological trial trench(es) to test the extent of the trackbed's survival.	Land north of Brusselton Farm	Low
Next steps in interpretation (see also main report).		
Task	Where	Priority
Publish and sell Friends of the 1825 S&DR self-guided walks booklets	West Auckland to Shildon Shildon Circular	Medium
Develop smart phone applications as alternative off-site interpretation	Brusselton village/ incline	Medium
The interpretation panels require updating. A more detailed approach to interpretation should follow after trial trenching and be part of an overarching interpretation scheme for the whole S&DR.	Brusselton Village	Medium

Signage on approach to Hackworth Industrial Estate from Brusselton welcoming people to the Railway Town of New Shildon	A6072 on path approach to Hackworth Industrial Estate	
Next steps in management.		
Task	Where	Priority
A young tree is growing out of the north side of the Oakley Beck culvert and needs removing.	Oakley Beck culvert	High
There are a few courses missing from the top of the Oakley Beck culvert on the south side but it appears stable.	Oakley Beck culvert	Low
Cut and poison hawthorn when growing out of S&DR boundary walls	Mostly Oakley Beck Culvert to Bankhouse Farm	Medium
The void created by the buried accommodation bridge or culvert is hazardous to users, especially horses, although being on the slope of the embankment it is not a well-used area. It is recommended that it be excavated archaeologically and if enough survives, conserved and re-exposed.	Buried footbridge between Oakley Beck and Bypass	High
Boundary wall restoration/ conservation	Oakley Beck to Shildon	High
Maintain historic field boundaries (hedgerows)		Medium
Ongoing vegetation clearance to keep path open to full extent	Brusselton Incline	High
No further development should be permitted on the line of the S&DR and where development takes place in proximity, design of new build and landscaping should be carefully considered to both maintain the character of the rail line and create accessible areas clearly marked out which coincide with the route.	Whole line	High
The water quality should be tested at the Hummerbeck Bridge – it may be contaminated by dumping near Broom Mill Farm.	Hummerbeck	High
The path alongside Broom Mill Farm is being used to dump cars, white goods and farm machinery amongst other unwanted items. It also obscures the boundary walls and is probably damaging them. This stretch of trackbed is scheduled and dumping on a scheduled monument is not permitted.	Broom Mill Farm area	High
Hummerbeck Bridge needs some conservation work to its top courses and replacing the pepper pot pier on the wing walls. It also needs some vegetation removal.	Hummerbeck Bridge	High
Vegetation and litter clearance of culverts and drains (ongoing management)	The watercourses near West Auckland and Broom Mill Farm	Medium
Record stone sleepers and store in depot if ex-situ or not earthfast (with a view to reusing them)	Various	High
Local police to be informed re legal status of remains at Brusselton and asked to patrol	Brusselton Bridge area	High
Implement Blackett-Ord recommendations (in part covered above)	Accommodation bridge and adjacent walls at Brusselton	High
Support the Brusselton Incline Group in the creation of an adopt a monument scheme to litter pick and cut back vegetation on the incline	Brusselton Incline	Medium (after capital works)
Conservation works to the Milk Bridge	Milk Bridge east of Brusselton	High
Next steps in preservation.		
Task	Where	Priority
If trial excavation suggests survival of the formation cutting, scheduling should be extended	Field north of Brusselton Farm	High (vulnerable)

Extend scheduling to include the reservoir in Brusselton village and to reflect better the full extent of the surviving incline and sleepers. Also to include gateposts for level crossing and ramp to approach the buried footbridge.	Brusselton village and cutting remains to and beyond Milk Bridge. Features adjacent to formation between Oakley Beck and Bankhouse Farm.	High
The Milk Bridge and its ramped approach should be listed	Milk Bridge east of Brusselton	High
Next steps in improving access		
Task	Where	Priority
Barbed wire has been located on the path side of the top of the fence along the bridgeway. It should be moved to the other side.	Between the bypass and Broom Mill Farm.	High
The track bed is bridgeway from West Auckland to Broom Mill Farm but there is no easy access on to the top of the embankment from West Auckland. It is acceptable for horse use and pedestrians but if the path is to be used by people with restricted mobility or cyclists, then a ramped approach will be required and a firmer surface in places.	Approach from West Auckland	Low
Crossing the Bishop Auckland bypass is hazardous and surprisingly difficult.	Crossing at Bypass	High
Clear fly tipping at Broom Mill Farm, and over spill of scrapyards at Shildon	Broom Mill and approach to Shildon's Hackworth Industrial Estate	High
Vegetation removal along path at Shildon to keep path clear	Path between Milk Bridge and Shildon and on approach to Locomotion	High
The bridgeway becomes a footpath at Broom Mill Farm (although its nature does not alter) and so there is currently no legal access for other users. The route might need to be upgraded to a bridgeway.	Broom Mill Farm area	Low
The path is also badly flooded and rutted in winter at Broom Mill Farm and is difficult to use.	Broom Mill Farm area	High
The line immediately east of Burnshouse Lane at Bankfoot Farm is private property and as it is being used as garden it is unlikely to be available for a rail trail. An alternative route will need to be found – this can use the quite & attractive Burnshouse Lane that joins the Roman Road Hags Lane.	The line immediately east of Burnshouse Lane at Bankfoot Farm up to Hags Lane	Medium
The line ran between two walls alongside West Thickley Farm. The route could stick to this official footpath or run along to the north where users would still see stone sleepers reused in the wall and then access the track a little further on. This would provide the owners of West Thickley Farm additional privacy if required in negotiations.	West Thickley Farm	Low
The access from the top of the Accommodation Bridge to Brusselton Lane which needs to be crossed, requires steps. An alternative route would run north of the track bed and West Thickley Farm to the roadside.	West Thickley Farm	Medium
There was a road bridge that the S&DR incline used to cross Brusselton Lane. It was demolished in the 1950s. Sufficient detailed information exists to justifiably rebuild the bridge and reinstate the crossing, however its use would be limited to footpath users because of the presence of stone sleepers on either side.	Brusselton Lane	Low
It is possible that this part of the line will be especially popular and so options for car parking in a place which avoids archaeology and maintains	Brusselton Incline	Low

the peace and tranquillity of local residents may be desirable.		
Car parking near Brusselton Incline	Brusselton Incline	Low
The underpass is an unwelcoming structure covered in graffiti. It needs to be made into a more attractive experience for users. Possible welcome point for users approaching from the west.	Underpass below A6072	Medium
Resurface footpath (about 145m in total) near scrapyards.	Hackworth Industrial Estate	High