

## 8.19 Tibshelf to Shuttlewood (LA10)

### Overview

The Tibshelf to Shuttlewood area (LA10) is approximately 14km in length extending from east of Tibshelf in the south, travelling northwards towards Heath and on to Bolsover and Shuttlewood. The route continues from the HS2 main line in the Pinxton to Newton and Huthwaite area (LA08). It falls within the local authority areas of Bolsover District Council and North East Derbyshire District Council, both of which are in the Derbyshire County Council area (see Figure 33).

The area is predominantly semi-rural, with agriculture being the main land use. This is interspersed with areas of industrial and commercial land use and settlements including Tibshelf, Heath, Bolsover, Astwith, Stainsby, Doe Lea, Palterton and Shuttlewood. There are areas that have been restored to agriculture from former open cast coal mines. The National Trust property of Hardwick Hall and its extensive park lie within this area, east of the M1, to which the route of the Proposed Scheme would run parallel.

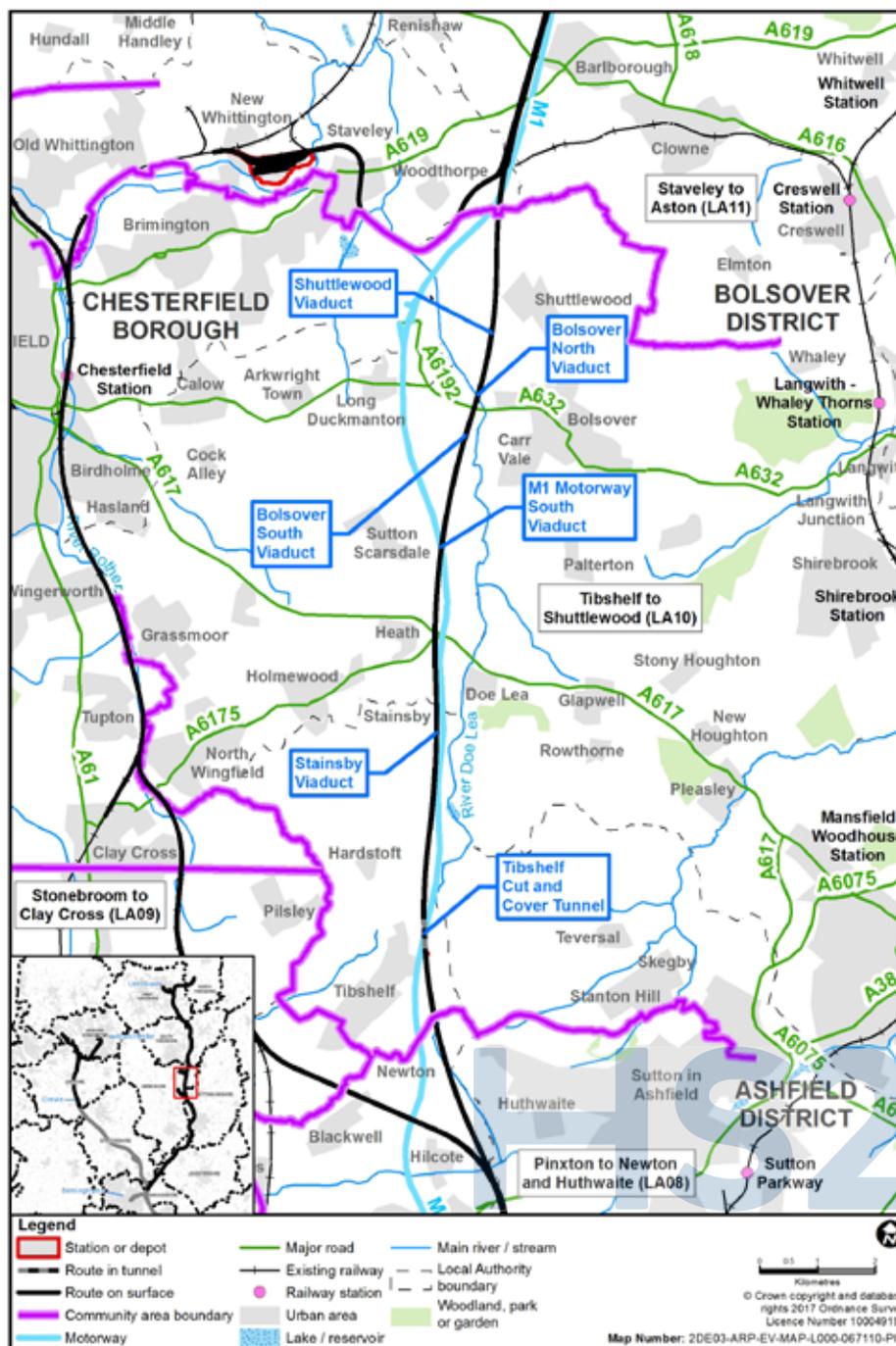


Figure 33: Tibshelf to Shuttlewood area (LA10) context map

## ***The Proposed Scheme***

The route would continue from the Pinxton to Newton and Huthwaite area (LA08), adjacent to the M1, in cutting before crossing under the M1 in a cut and cover tunnel. The route would continue to the west of the M1 in a cutting before transitioning onto embankment to the south of Hardstoft. The route would then continue to the east of Hardstoft west of the M1 in cuttings and on embankments before running on viaduct to the east of Holmewood and continue north on embankment and in cutting towards Heath. The route would continue in cutting passing to the west of the M1, transition onto embankment, before passing over the M1 on viaduct.

The route would then continue to the east of the M1 and Bolsover on embankment and viaduct. The route would then run north on embankment before passing over the River Doe Lea on viaduct and transitioning back on to embankment before continuing into cutting to the south of Shuttlewood. The route would continue on embankment and viaduct to the west of Shuttlewood, before continuing on embankment into the Staveley to Aston area (LA11).

In this area, the Proposed Scheme would require the demolition of 11 residential properties and 18 commercial/business properties. There would be permanent closure, realignment or diversion of eight roads. The Proposed Scheme would result in the permanent realignment, diversion or closure of 15 public rights of way. Nine watercourses would be permanently realigned or diverted. One main construction compound and nine satellite construction compounds would be required in this area.

### ***Residual effects***

This section provides a summary of the likely significant residual environmental effects identified for the Tibshelf to Shuttlewood area at this stage of the design and assessment.

### ***Agriculture, forestry and soils***

#### ***Construction***

It is currently expected that approximately 390ha of agricultural land would be required for construction of the Proposed Scheme in this area, of which approximately 14ha is likely to be high quality agricultural land. Some of this land would be restored following construction, with

approximately 220ha permanently required, 14ha of which is high quality agricultural land. The quality of the land is currently based on publicly available information and will be confirmed in the formal ES once agricultural land surveys are complete, as will the extent of land required permanently for the Proposed Scheme.

To avoid or reduce environmental impacts, soils from the areas required temporarily and permanently for the Proposed Scheme would be stripped and stored. This would enable agricultural land that is required temporarily for construction to be returned to agricultural use. It would also enable soils to be put to other uses, such as support landscape planting.

Construction of the Proposed Scheme would be likely to result in significant effects at 19 farm holdings in this area due to the proportion of land required for the Proposed Scheme. Of the 19 holdings temporarily affected, 15 would also be permanently affected. Land required temporarily would, in accordance with a restoration scheme agreed with the landowner and the relevant planning authority, be returned to the farm holding following the completion of construction.

## Community

### Construction

Construction of the Proposed Scheme would lead to a significant community effect due to the demolition of six residential properties on Chesterfield Road and Woodthorpe Road in Shuttlewood. The loss of these properties represents a high proportion of this community.

Land occupied by the ruins of the Heath Old Church and burial ground required by the Proposed Scheme would be permanently lost.

Land required for the construction of the Proposed Scheme would result in the permanent loss of Snipe Bog nature reserve.

## Ecology and biodiversity

### Construction

Construction of the Proposed Scheme would result in a permanent loss of habitat of approximately: 0.09ha (0.5%) of Astwith Dumbles Local Wildlife Site; 0.04ha (4.4%) of Heath Hedges Local Wildlife Site; 0.12ha (1.3%) of Owlcotes Wood Local Wildlife Site; 0.28ha (4.7%) of Wrang Plantation Local Wildlife Site; 1ha (7.9%) of Carr Vale Flash Local Wildlife

Site; 1.9ha (17.7%) of Peter Fidler Reserve and The Goit Railway (west) Local Wildlife Site; 1ha (100%) of Bolsover Collier Marsh Local Wildlife Site; 6.1ha (100%) of Markham Colliery Reedbed Local Wildlife Site; 0.6ha (100%) of Woodside Field Slope and Stream Local Wildlife Site; 0.8ha (61.8%) of Poolsbrook Flash Local Wildlife Site; and 0.1ha (2.1%) of Owlcotes Wood Ancient Woodland Inventory Site.

It is currently expected that there would be a permanent loss of approximately 25.3ha of deciduous woodland, approximately 0.3ha of floodplain grazing marsh grassland, and the loss of hedgerows and ancient and veteran trees. The removal and fragmentation of these habitat types has the potential to affect their conservation status as well as potentially resulting in significant effects on bats, great crested newts, birds, terrestrial invertebrates and reptiles.

Significant effects are likely to be experienced by otter and water vole in watercourses affected by the Proposed Scheme, as a result of the loss of water-margin habitat. Similarly, white-clawed crayfish, aquatic invertebrates and fish may be significantly affected as a result of habitat loss and construction disturbance.

## Operation

During operation of the Proposed Scheme, bats and barn owls would be at risk of mortality caused by passing trains.

## Health

### Construction

The Proposed Scheme would impact on a range of environmental and social factors that have the potential to affect health. Since there are no accepted criteria for defining 'significant' health effects, judgements have been made as to the level and type of impact that could potentially affect population health.

Construction of the Proposed Scheme would result in the permanent loss of 11 residential properties in the Tibshelf to Shuttlewood area. This has the potential to reduce beneficial health effects that are gained through social contact and support.

Construction of the Proposed Scheme would result in the permanent loss of Snipe Bog nature reserve. This space provides a positive contribution to the wellbeing of the local community and the loss would have an adverse effect on health and wellbeing.

The combination of construction noise, visual and traffic impacts would change the character of neighbourhoods, and may impact on residents' quality of life. For rural communities dependent on shops and services in nearby towns, temporary closures and diversions of local roads may reduce the accessibility of key services. In addition, levels of physical activity could potentially be affected by disruption to roads and public rights of way that may be used as active travel routes.

The temporary construction workforce is likely to comprise a mixture of local people and workers from further afield. This could mean that local communities see temporary changes to the local population size and demographics.

### *Operation*

The presence of rail infrastructure and noise from passing trains may change the character of surrounding neighbourhoods, and may reduce the quality of life for residents.

## *Historic environment*

### *Construction*

The Proposed Scheme is being designed to reduce impacts on heritage assets as far as reasonably practicable. Construction of the Proposed Scheme would require land from within the Hardwick and Rowthorne and Stainsby Conservation Areas, whilst the Grade II listed ruins of Old Heath Church and Woodhouse Farm would be removed. In addition, the non-designated site of a medieval village in Heath and earthworks in the orchard of Woodhouse Farm would be removed.

Construction of the Proposed Scheme would also affect Hardwick Hall (Grade I listed building and registered park and garden), Hardwick Old Hall (scheduled monument and Grade I listed building), Stainsby defended manorial complex (scheduled monument), Sutton Scarsdale Hall (scheduled monument and Grade I listed building), and Bolsover Castle (Grade I listed building, scheduled monument and registered park and garden). Permanent alterations to their settings would result in changes to the way that these assets are experienced and understood.

## *Landscape and visual*

### *Construction*

The presence of construction works and changes to the existing landform and vegetation patterns would affect the character of the local landscape. Where possible, effects would be reduced by the measures incorporated into the design to reduce the visibility of the Proposed Scheme (for example, land shaping to link earthworks into their wider landscape context, compensatory woodland planting and hedgerow replacement and restoration).

Construction activities would be visible from 41 viewpoints within the area, for example views from: residential properties north of Tibshelf and Hardstoft, the east and north of Stainsby and Heath, Sutton Scarsdale, Chesterfield Road, Bolsover and Shuttlewood; Carr Vale Nature Reserve; and public rights of way to the east of The Hurst, in and around the Hardwick Estate and in and around Bolsover and Shuttlewood.

### *Operation*

During operation, the significant effects of the Proposed Scheme on the character and appearance of the local landscape would substantially reduce over time as mitigation planting grows and matures, however, effects may remain significant.

During operation, the Proposed Scheme would be visible from 27 viewpoints within the area, for example views from: residential properties north of Tibshelf, the east and north of Stainsby and Heath, Sutton Scarsdale, Chesterfield Road, Bolsover and Shuttlewood; Carr Vale Nature Reserve; and public rights of way to the east of The Hurst, in and around the Hardwick Estate and in and around Bolsover and Shuttlewood.

### *Socio-economics*

Construction of the Proposed Scheme would result in a likely significant effect from the loss of land or buildings and the resulting loss or displacement of jobs from 10 units on the Saw Pit Lane Industrial Estate. Any likely significant residual effects will be assessed and reported in the formal ES.

### *Sound, noise and vibration*

#### *Construction*

Noise from construction could result in significant effects on residential communities closest to the construction works at: Tibshelf; Stainsby; Doe Lea; Heath; Carr Vale; Shuttlewood; Poolsbrook; and Staveley. Noise from construction could result in significant effects on the non-residential property All Saints church in Heath.

A comprehensive set of mitigation measures, including those in the draft Code of Construction Practice, would be implemented to control noise and vibration throughout the construction works.

Further work is currently being undertaken to confirm the likely significant residual construction noise and vibration effects, including any temporary effects from construction traffic. This assessment will be reported in the formal ES.

### *Operation*

Operational noise would be reduced at source through the effective design and specification of the trains and track. A number of measures have also been incorporated into the design of the Proposed Scheme to mitigate noise effects during operation. These include noise barriers in the form of landscape earthworks and/or noise fence barriers.

Operation of the railway would potentially result in noise effects on occupants of residential properties, due to potential noise increases above recognised thresholds, and hence change in the existing acoustic character around those properties closest to the Proposed Scheme in the following community areas: Carr Vale (Sutton Hall Road, Pearson Gardens, Charlesworth Street and North View Street); Bolsover Woodhouse (Chesterfield Road); and Shuttlewood (the B6418 Buttermilk Lane/ Chesterfield Road, the B6419 Bolsover Road, Chesterfield Road, Adin Avenue and Pretoria Street). Further assessment work is being carried out and will be reported in the formal ES.

During operation of the railway noise insulation would be offered to avoid significant effects at individual residential properties that satisfy the applicable qualifying criteria. At this stage this is anticipated to be at: Stainsby (in the vicinity of Hawking Lane); Deepdale Farm (in the vicinity of Palterton Lane); Bolsover (in the vicinity of the A632 Chesterfield Road); Shuttlewood (in the vicinity of the B6418 Buttermilk Lane/Chesterfield Road); Woodside Farm (in the vicinity of Woodthorpe Road); and Lodge Farm (in the vicinity of Woodthorpe Road).

Further assessment work is currently being undertaken to confirm the likely significant residual effects due to operational noise and vibration, especially at non-residential locations and quiet areas and in terms of establishing existing baseline conditions. This will be reported in the formal ES.

HS2 Ltd will continue to seek reasonably practicable measures to further reduce or avoid likely significant effects due to noise and vibration. In doing so HS2 Ltd will continue to engage with stakeholders to fully understand the potentially affected receptors, their use and the benefit of the measures.

## *Traffic and transport*

### *Construction*

Construction of the Proposed Scheme has the potential to lead to additional congestion and delays for road users on the following routes: the M1 (junctions 29 and 29a); the A617/Mansfield Road; the A619 Duke Street/Market Street/Chesterfield Road; the A632 Chesterfield Road/Station Road; the A6175 Heath Road/Williamthorpe Road/St Lawrence Road; the A6192 Markham Lane/Erin Road; the B6014 Mansfield Road/High Street; the B6039 Chesterfield Road/Tibshelf Road; the B6418 Chesterfield Road/Buttermilk Lane; the B6419 Bolsover Road; the B6425 Hassocky Lane; Deep Lane; Hawking Lane; Hardstoft Road; Astwith Lane; Station Road; Mill Lane (near Stainsby); Mansfield Road; Sutton Lane; Palterton Lane; Woodhouse Lane; Mill Lane (near Shuttlewood); and Troughbrook Road. Increases in traffic could also affect non-motorised users (i.e. pedestrians, cyclists and horse riders) in terms of the ease with which they can cross these routes.

Construction of the Proposed Scheme is also likely to result in the temporary closure, diversion or realignment of the following: the M1 (local realignment between junctions 28 and 29 and junctions 29 and 29a); the A617; the A6175 Heath Road; the B6014 Mansfield Road; the B6419 Bolsover Road; Deep Lane; Astwith Lane; and Woodhouse Lane.

Construction of the Proposed Scheme would also require the diversion of bus routes 1, 49 and 81.

Temporary closure and diversion or realignment of the following 13 public rights of way could result in increased journey times for non-motorised users: Tibshelf Footpath 46, 35, 33 and 32; Ault Hucknall Footpath 18, 17 and 16; Sutton-cum-Duckmanton Footpath 14, 19, 18; and Bolsover Footpath 34, 27 and 35.

### *Operation*

Rail users would benefit from improved journey times between Chesterfield, the Midlands and London as a result of the introduction of HS2 services and released capacity on conventional rail services operating from Chesterfield Station.

Operation of the Proposed Scheme would require the permanent diversion or realignment of sections of: Hawking Lane; Mill Lane (near Stainsby); the M1 junction 29; Church Lane; the M1 (north of junction 29); the A632 Chesterfield Road; Woodhouse Lane; and the B6418 Chesterfield Road, and the closure of sections of: Hawking Lane; Mill Lane (near Stainsby); Church Lane; and the A632 Chesterfield Road. Increases in traffic could also affect non-motorised users (i.e. pedestrians, cyclists and horse riders) in terms of the ease with which they can cross these routes.

Operation of the Proposed Scheme would require the permanent closure or diversion/realignment of 18 public rights of way, including: Tibshelf Footpath 46, 35, 33 and 32; Tibshelf Bridleways 21 and 31; Saw Pit Lane; Ault Hucknall Bridleway 35; Ault Hucknall Footpaths 17, 18, 16 and 37; Heath and Holmewood Footpaths 25 and 1; Sutton-cum-Duckmanton Footpaths 19 and 18; and Bolsover Footpaths 34 and 35.