

High Speed Rail: HS2 Phase 2b Preferred Route

Sustainability Statement including Post Consultation Update

Appendix C1 – Landscape, Townscape and
Visual

A report by Temple-RSK for HS2 Ltd



TEMPLE

LEADERS IN ENVIRONMENT,
PLANNING & SUSTAINABILITY.

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1. INTRODUCTION

- 1.1.1. This report has been prepared to support the HS2 Phase 2b Sustainability Statement including Post Consultation Update report, which describes the extent to which the Government's preferred route for HS2 Phase 2b supports objectives for sustainable development. This document is a technical appendix which summarises the methodology for appraising landscape and visual impacts, and the key findings and conclusions that inform the Sustainability Statement main report. The Sustainability Statement places emphasis on the known key impacts only at this stage in the design, prior to commencing the Environmental Impact Assessment.

2. SCOPE AND METHOD

2.1. Scope of appraisal

- 2.1.1. The scope of the appraisal covered three main topics as defined below.
- 2.1.2. According to the European Landscape Convention, landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. It reflects the interplay of the physical, natural and cultural elements of our surroundings and the way that people perceive these interactions. Different combinations of these elements create the distinctive character of landscapes in different places.
- 2.1.3. Townscape refers to areas where buildings and related infrastructure are the dominant landscape elements. Townscape means the landscape within the built up area, including the relationships between buildings and different types of urban greenspace. Townscape is often strongly influenced by historic factors, since the evolution of settlements over time is a major contributor to their current form and character.
- 2.1.4. Visual amenity is defined as the enjoyment or benefit that people derive from a particular view or area in terms of what is seen. When a landscape (or townscape) is changed in some way, the change will be seen by people – often by several different groups of people i.e. visual receptors – and this may affect their views and their visual amenity overall.
- 2.1.5. Given the strategic nature of the AoS as a whole, the landscape, townscape and visual appraisal was carried out at a broad strategic level and focused on identifying key issues and potential impacts that should influence the horizontal and vertical alignment of the preferred route throughout its development.

2.2. Approach to appraisal

- 2.2.1. There is no specific approach or method recommended for use when appraising the landscape, townscape and visual impacts of a high speed rail project at a strategic level. The approach that has been developed is based on the principles set out in published *Guidelines for Landscape and Visual Impact Assessment*¹ and on good practice in sustainability appraisal generally.
- 2.2.2. Review of these sources suggests that the appraisal should make reference to existing surveys of landscape character; and should identify objectives, criteria and indicators that will allow landscape, townscape and visual impacts to be appraised. Judgements should

¹ Landscape Institute and Institute of Environmental Management and Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*, third edition, Routledge.

then be made about the extent to which the proposals may have impacts on landscape, townscape and visual amenity.

- 2.2.3. Core sustainability objectives were therefore established at the outset of the work (see **Appendix B** for further information on the AoS methodology). These were:
- To maintain or where possible enhance existing landscape character; and
 - To maintain or where possible enhance existing townscape character.
- 2.2.4. During the initial route option appraisal stage these objectives were considered (within the route appraisal templates) using criteria of:
- Direct and indirect impacts to nationally designated landscapes (National Parks and Areas of Outstanding Natural Beauty);
 - Direct and indirect impacts on the landscape character and qualities of the wider countryside;
 - Incursion into strategic views; and
 - Degree of fit with regard to existing townscape character.
- 2.2.5. An effort was made within the appraisal templates to measure the specific features affected, to provide explicit indicators of change, but in general this proved difficult because:
- Phase 2b involves no direct impacts and almost no indirect impacts on nationally designated landscapes;
 - Direct and indirect impacts on the landscape character and qualities of the wider countryside are not easily subject to measurement (although they can be identified and described);
 - ‘Strategic’ views as such are seldom explicitly identified in development plans or elsewhere; and
 - The degree of fit with existing townscape character is a matter for professional judgement.
- 2.2.6. Hence a decision was taken that the appraisal approach should focus on qualitative, evidence-based description and analysis of the impacts on landscape, townscape and visual amenity that would be expected to occur as a result of Phase 2b. The findings of this more detailed appraisal are presented in **Section 3** of this report.
- 2.2.7. In appraising the landscape, townscape and visual impacts a simplified evaluation system was applied which provided an overall evaluation for each section of route using a five-point scale of major adverse (--), moderate adverse (-), negligible or neutral (o), moderate beneficial (+) and major beneficial (++). This provided consistency across all the professional disciplines and fed into the overall appraisal framework.
- 2.2.8. The appraisal process aimed to show, at a strategic level, how the project would change the character of the landscape, townscape and visual amenity along the route. In practice nearly all landscape, townscape and visual amenity impacts have been assessed as adverse, not beneficial, at this stage in the scheme design process. As proposals are developed further to include mitigation measures (including new planting, and design features such as iconic new built structures) more detailed future assessments of landscape, townscape and visual impact are likely to identify fewer adverse impacts and in some circumstances the possibility of some beneficial impacts resulting from the preferred route. Landscape proposals would form part of a design approach for the preferred route

that integrates engineering requirements with those of landscape, noise mitigation, ecology, agriculture, cultural heritage and open space.

2.3. Methodology

2.3.1. There were two principal appraisal streams: landscape/townscape and visual amenity. In the case of landscape and townscape, the appraisal methodology was essentially the same for both, but the content of the appraisal was modified depending on whether the context for the route was rural or urban. Townscape issues came into play particularly in relation to the proposed stations along the route.

2.3.2. The appraisal methodology comprised the following stages:

- Stage 1: Review the baseline landscape, townscape and visual environment along the preferred route;
- Stage 2: Consider the degree of change that would result from the preferred route;
- Stage 3: Describe and appraise the impacts on landscape, townscape and visual amenity; and
- Stage 4: Produce an evaluation for each route section in terms of impacts on landscape and/or townscape and visual amenity.

2.3.3. **Stage 1** examined a wide range of information sources, including:

- Natural England's National Character Area (NCA) descriptions and where available local authority landscape character assessments – these provided an understanding of the key landscape characteristics of different parts of the route and (depending on the scope of the landscape character assessment) in some cases also provided information on landscape sensitivity and/or landscape quality objectives for particular areas which informed the appraisal process;
- GIS mapping showing National Parks and Areas of Outstanding Natural Beauty, the National Forest, Registered Parks and Gardens, Conservation Areas, Scheduled Monuments, ancient woodlands, woodlands as recorded on the National Forest Inventory, Sites of Special Scientific Interest, Country Parks, National Trails and long distance paths, and access land – the aim being to identify the key sites that contribute to enjoyment of landscape and visual amenity along the route²; and
- Google Earth aerial photography and Street View – this was used extensively to view the landscape/townscape at points along the route and potential views towards the route, especially during the route option appraisal work, which was primarily desk-based.

2.3.4. Information from these sources was supplemented where necessary by wider desk research (for example Conservation Area appraisals, nature conservation site descriptions, and interpretive materials for recreational sites and routes). Site visits were made to selected route sections and all potential station and depot sites during the route option appraisal and refinement process, but no detailed field surveys were undertaken.

2.3.5. **Stage 2** explored the nature and scale of the changes that would result from the preferred route. Specifically, the proposed horizontal and vertical alignments of the railway were examined in terms of:

² Impacts on cultural heritage and biodiversity sites as such were appraised separately under the relevant topics i.e. there was no 'double-counting' of these impacts.

- Degree of fit with topography i.e. extent of cut and fill required, as this has a direct impact on landscape and townscape character;
 - Direct loss of or damage to existing landscape and townscape features such as woodland and trees or distinctive buildings;
 - Indirect impacts on the settings of key landscape/townscape features and visual amenity interests close by; and
 - Intrusion of new structures (viaducts, bridges, embankments, station buildings, scale, mass) into key views, especially those from sensitive receptors.
- 2.3.6. At this stage of the design, direct impacts are assumed to occur within a narrow 50m corridor either side of the preferred route alignment; while indirect impacts may occur over a wider area of up to 2km on either side of the route, for example where there are views to the route from surrounding areas. In practice, most significant indirect impacts tend to be concentrated within 500m of the alignment.
- 2.3.7. Where possible, specific details were compiled of the scale of change that would occur, such as length and depth of cut, number of woodlands directly affected, distance from nearby landscape and visual amenity features, and height and mass of new structures that may give rise to visual intrusion. Special care was taken to note locations where:
- The variation from existing ground levels would exceed 20m;
 - There would be a direct impact on woodland over a distance of 500m or more;
 - The route would probably be visible from a long distance path, recreation or heritage site, or local community, from a distance of less than 500m; and
 - Station buildings, or other new structures over 20m high, would be introduced into the view.
- 2.3.8. **Stage 3** developed and reported the findings of the appraisal in tabular form (see **Section 3**). For each route section, summary information has been prepared covering:
- The route itself – overview description of the route;
 - Likely impacts on landscape/townscape character and quality – description of the existing landscape/townscape and specific changes affecting landscape/townscape resources; and
 - Likely impacts on visual amenity and views – description of main visual receptors and the ways in which their visual amenity and views would be affected.
- 2.3.9. Significant impacts (i.e. major or moderate) at specific locations known at this stage in the design are identified within the narrative of the table. Locations that would experience significant cumulative impacts together with other route sections or existing structures are also identified in the table.
- 2.3.10. Finally, **Stage 4** evaluated each route section in terms of its landscape/townscape and visual impacts, taking account of the sensitivity, importance and value of the baseline landscape, townscape and visual environment and the magnitude and geographical extent of the changes that are expected to occur. The evaluations used a five-point scale, as shown in **Figure 2-1**.
- 2.3.11. Separate evaluations have been provided for landscape/townscape impacts (as appropriate, according to setting) and visual impacts. A combined landscape/townscape

and visual evaluation has also been provided for each route section³ reflecting the overall significance of the landscape/townscape and visual impacts for that section.

2.3.12. The evaluations summarised the level of impact over the whole route section. Individual locations within the section may have higher (or lower) levels of impact, as identified in the text of the appraisal table in **Section 3**.

Figure 2-1 - Landscape/Townscape Evaluation Scale

Landscape/Townscape Impacts		
<i>Major adverse</i>	--	<i>Direct or indirect adverse impact on very important, sensitive or valued landscape or townscape features i.e. features that are highly distinctive, especially vulnerable to change and/or valued at national or regional level. Change is large scale and/or widespread.</i>
<i>Moderate adverse</i>	-	<i>Direct or indirect adverse impact on important, sensitive or valued landscape or townscape features i.e. features that are distinctive, vulnerable to change and/or valued at local level. Change is of moderate scale and extent.</i>
<i>Minor, negligible or neutral impact</i>	0	<i>Little or no impact on important, sensitive or valued landscape or townscape features. Change is limited in scale and extent.</i>
<i>Moderate beneficial</i>	+	<i>Direct or indirect beneficial impact on important, sensitive or valued landscape or townscape features i.e. features that are distinctive, vulnerable to change and/or valued at local level. Change is of moderate scale and extent.</i>
<i>Major beneficial</i>	++	<i>Direct or indirect beneficial impact on very important, sensitive or valued landscape or townscape features i.e. features that are highly distinctive, especially vulnerable to change and/or valued at national or regional level. Change is large scale and/or widespread.</i>
Visual Impacts		
<i>Major adverse</i>	--	<i>Adverse impact on important, highly valued settings, views or other visual amenity interests currently enjoyed by sensitive visual receptors including people engaged in countryside recreation, visitors to heritage sites, and local communities. Views are close range and visual intrusion and/or obstruction is large scale and widespread.</i>
<i>Moderate adverse</i>	-	<i>Adverse impact on settings, views or other visual amenity interests experienced mainly by visual receptors with lower amenity expectations eg passing motorists and people at their place of work. Views are not at close range and visual intrusion and/or obstruction is of moderate scale and extent.</i>
<i>Minor, negligible or neutral impact</i>	0	<i>Little or no impact on settings, views or other visual amenity interests. Any visual change is limited in scale and extent.</i>
<i>Moderate beneficial</i>	+	<i>Beneficial impact on settings, views or other visual amenity interests experienced mainly by visual receptors with lower amenity expectations eg passing motorists and people at their place of work. Views are not at close range and visual intrusion and/or obstruction is of moderate scale and extent.</i>
<i>Major beneficial</i>	++	<i>Beneficial impact on important, highly valued settings, views or other visual amenity interests currently enjoyed by sensitive visual receptors including people engaged in countryside recreation, visitors to heritage sites, and local communities. Views are close range and visual intrusion and/or obstruction is large scale and widespread.</i>

³ In the first of the three columns of the appraisal tables in Section 3 of this report.

2.4. Assumptions and limitations

- 2.4.1. Inevitably given the strategic nature of the AoS process, the appraisal is relatively high level and should not be confused with a full and detailed environmental impact assessment. The level of detail of the appraisal is commensurate with the data available and the strategic nature of the preferred route. Work has relied primarily on desk study supported by a number of site visits.
- 2.4.2. In terms of baseline information the appraisal has been largely dependent on existing published sources, GIS data and aerial photography, which are sometimes incomplete and imperfect. For example, the landscape character assessment coverage available varies considerably in scale, scope and quality, especially at local authority level. The year and time of year when the aerial photography used in the appraisal was taken varied.
- 2.4.3. In relation to visibility, it should be noted that no mapping of the zone of theoretical visibility of the route has been prepared at this point. Hence, although every effort has been made to identify the main visual amenity impacts of the preferred route, there may be some omissions.
- 2.4.4. National GIS datasets and Ordnance Survey base mapping have been used to identify sensitive receptors who might experience visual impacts as a result of HS2; inevitably additional potential receptors may exist. While impacts on long distance paths have been taken into account, other recreational routes (such as cycle routes) have not been covered at this stage.
- 2.4.5. In addition the level of detail available about the design of the scheme has sometimes been a constraint. For the line of route and depots the appraisal has been based on 1:10,000 scale maps and cross-sections; while for stations only indicative designs and layouts have been available to inform the appraisal process. The more detailed design of specific sections of route and specific structures is simply not known at this point.
- 2.4.6. Overall, these limitations mean that the conclusions on landscape, townscape and visual impacts should be reliable at a broad strategic level but are not necessarily complete or comprehensive at a local level.

3. FINDINGS

3.1. Western leg

Route Description/ Impact Overall	Landscape/ Townscape Impacts	Visual Impacts
Chorlton to Winterbottom (HSM10)		
<p>This section of route would enter a tunnel south of the existing Crewe station, near Chorlton, and continues under the main urban area of Crewe for just under 3.6km. It would emerge through the town's northern outskirts in cutting alongside the West Coast Mainline (WCML) before rising to grade and 4-7m high embankment. Near Walley's Green and the A530 the route would diverge from the WCML bearing north across the expansive river-crossed landscape of the Cheshire Plain. At this point, west of Wimboldsley, Crewe North Rolling Stock Depot (RSD) would be located which includes proposals for a grade separated junction from the HS2 mainline. This would require structures up to 16m high.</p> <p>The route would cross the Shropshire Union Canal and continue north across the Cheshire Plain between Winsford and Middlewich towards Northwich, continuously elevated on either embankment or viaduct. This would include a 1.2km long, 26m high crossing of the River Dane and three crossings of the Trent and Mersey Canal within a 2km stretch near Whatcroft. The route would then skirt to the east of Northwich and continue on a mix of embankment and viaduct to the west of Lostock Green and east of Lostock Gralam. When on embankment the route would generally be up to 15m high, interspersed with viaduct sections over floodplains which over Peover Eye would reach up 1.2km long and 23m high.</p> <p>The route would continue northwards on mix of somewhat lower embankments and viaducts, through Heyrose Golf Course and towards the 12m high</p>	<p>This landscape comprises flat or gently rolling farmland with small to medium sized hedged field enclosures, some of which are medieval in origin, and (especially in the north) distinctive ponds, meres and mosses and many small tree-lined streams. Historic field patterns, parkland and semi-natural woodland are important features that are vulnerable to change.</p> <p>The RSD would be located in open, flat farmland west of Wimboldsley, enclosed by the WCML and HS2 in an area that is relatively featureless apart from some young parkland trees. The landscape character impact of the depot would be partly contained through enclosure by rail lines, mainly on low embankment.</p> <p>The route would be raised along much of its length across the characteristically flat, open landscape of the Cheshire Plain; hence major impacts on landscape character would occur in some locations. Where the route crosses the A54, the grade-separated upline to the RSD would rise on embankment to around 16m above existing ground levels, fragmenting and intruding on open countryside in the area between Winsford and Middlewich. Further north, near Bostock Hall, the long, high viaduct over River Dane and Trent and Mersey Canal would adversely affect the landscape character of the valley and the immediate setting of Bostock Conservation Area, around 200m away (although existing woodland would partly screen the route). The raised embankment near Whatcroft would intrude on the character of the floodplain. Near Lostock Gralam the long, high viaduct over Peover Eye and Smoker Brook would be intrusive and result in some (ancient)</p>	<p>This route section passes through a mix of inaccessible or sparsely settled countryside as well as within close proximity to a number of larger villages and towns. This, together with the fact that much of the route is raised on a mix of embankment and viaduct means that locally moderate to major visual impacts would occur at a number of locations along this route section.</p> <p>Locally major visual impacts would affect recreational users of the Shropshire Union Canal, Trent and Mersey Canal and Heyrose Golf Course.</p> <p>There would be likely moderate or major visual impacts on a small number of residents on the northern outskirts of Crewe and also on residents of Clive, Whatcroft, Broken Cross, Lostock Green and Lostock Gralam, all within around 200m.</p> <p>For the RSD, visual impacts would depend on the height of RSD structures, with tall structures likely to further impact on users of the Shropshire Union Canal and residents at Wimboldsley.</p> <p>There might also be some visual impact on the setting of Bostock Hall (Conservation Area) where there are views towards the viaduct over the River Dane.</p>

crossing of the M6 near Winterbottom.	woodland loss. Further north the M6 approach embankments would have some impact on the relatively flat and open character of the landscape and a direct impact on part of Heyrose Golf club, but these impacts would generally be minor.	
Major Adverse (--)	Major Adverse (--)	Major Adverse (--)
Winterbottom to Mossbrow (HSM12)		
<p>After crossing the M6 near Winterbottom on embankment up to 12m high, the route would run northwards in deep cutting, parallel to and west of two electricity transmission lines, past the hamlet of Hoo Green, where the spur towards Manchester Piccadilly would branch off, the mainline continuing north towards the WCML connection at Golborne.</p> <p>The mainline would continue in cutting up to 22m deep below the M56 before emerging near Agden and rising onto embankment up to 10m high over the Bridgewater Canal. Continuing north, the route would begin to reduce in height, with a 7m high viaduct crossing of the River Bollin followed by a short section of embankment and cutting approaching Mossbrow.</p>	<p>In the southern part of this section the landscape continues to comprise rolling farmland. The pattern of small fields, dense hedgerows, mature hedgerow trees and small, winding lanes of relatively ancient origin is surprisingly intact and unspoilt notwithstanding the presence of existing detractors including the electricity transmission lines and motorway. Further north the landscape is mainly flat open arable and pasture land with medium to large fields and many watercourses.</p> <p>There would be a moderate adverse impact on landscape character associated with the embanked parts of the route near Winterbottom and further north where the route crosses the open floodplain landscape of the River Bollin, which is sensitive to change.</p> <p>In the central part of the route, the deep, wide cutting close to Hoo Green and Mere Court (Grade II Listed Building) would have a moderate impact on landscape character; and any realignment of the A50 at Hoo Green might also have some impact. However other landscape impacts would tend to be alleviated by the fact that the route would pass under the winding country lanes (Peacock Lane and Agden Lane), and would bring no woodland loss.</p>	<p>There would be localised moderate visual impacts on the hamlet of Winterbottom (100-200m) and on scattered dwellings and farms close to the route. Visual impacts on Hoo Green should be limited as the route would pass the settlement in cutting. The raised crossings of the Bridgewater Canal and the River Bollin (and Trans Pennine Trail) would affect recreational users.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Mossbrow to Lowton (HSM21)		
Emerging from cutting north of Mossbrow, this section of route would start to rise onto embankment up to 15m high approaching the Manchester Ship Canal where the 1.3km long viaduct crossing would reach a maximum	This landscape comprises flat or gently undulating farmland, with relatively large mainly arable fields and limited hedgerow or hedgerow tree cover, lending an open, exposed character, especially to the mosslands of	Wide open views have been identified as a key characteristic of these landscapes and would be significantly affected over an extensive area. Major visual impacts would be experienced at Hollins Green,

<p>height of 28m. North of the Ship Canal, the route would remain on embankment, descending to 8m high west of Glazebrook before heading north-west across the M62 on embankment up to 11m high.</p> <p>The route would then skirt south of Culcheth, running into shallow cutting to avoid Culcheth Linear Park before passing west of Leigh Golf Course on embankment and alongside a disused railway cutting. Crossing the existing Chat Moss railway, the route would then descend again into cutting approaching Lowton, passing under the A580 and threading a narrow gap between Lowton-St-Mary's and Wash End towards Lowton Common.</p>	<p>the Mersey valley.</p> <p>Almost inevitably, given the height and scale of the engineered structures that would be introduced to these landscapes, which are sensitive to high structures, the impact of the new viaducts and embankments would be major, affecting landscape character over a wide area. However they would not represent wholly new landscape elements, as there are already several high level road and rail crossings over the Manchester Ship Canal between Warrington and Irlam.</p> <p>The new crossing would be reasonably well separated from the closest existing crossing, the historic toll bridge at Warburton around 800m to the south-west; and it is possible that an iconic new viaduct design could provide a feature of interest, although the impact of the approaches on this open landscape would remain.</p> <p>The long, high embankment from Hollins Green to Culcheth would be out of keeping with the flat mossland landscape (although this has already been affected by railway, motorway and landfill development) and the route would pass through the area of small lakes (restored mineral workings) south of Culcheth. The impact on landscape character here would be moderate. North of Culcheth any landscape character impacts would be much more limited.</p> <p>There would be a direct impact on several small woodlands along the route including one area of semi-natural woodland (of ancient origin) on the southern bank of the Manchester Ship Canal.</p>	<p>directly adjacent to the new viaduct over the Manchester Ship Canal. Recreational users of the Ship Canal and public open spaces and walking routes on the canal banks would also experience major impacts.</p> <p>The substantial settlements of Partington (500m) and Cadishead (300m), and travellers on the A57, would also be affected by views of the viaduct, although existing woodland would offer at least partial screening. Further north the high embankment would intrude on and obstruct some views along the Mersey valley, including those from Glazebrook village (300m) and the M62. These impacts are considered to be moderate.</p> <p>There would be some visual impact on recreational users of the lakes area south of Culcheth, where the route would be on embankment and also south-west of Culcheth, where the route would run in shallow cutting parallel to Glaziers Lane. Recreational users of the nearby fisheries and caravan park might experience some visual intrusion.</p>
Major Adverse (--)	Major Adverse (--)	Major Adverse (--)
Lowton to Bamfurlong (HSM22)		
<p>This section of the route would head north-west from Lowton Common, rising from cutting to low embankment between 3-6m high to the north of Lowton and the outskirts of Golborne and Bamfurlong. The route would be set back from river and canal corridor and would be around 500m from Lightshaw Flash (part of Abram Flashes Site of Special Scientific Interest). Crossing the A573 to connect with the WCML, a grade</p>	<p>This landscape comprises a substantial pocket of undulating enclosed farmland of variable landscape condition, surrounded by urban, suburban and industrial development. The area to the east (towards Pennington Flash) is a surviving remnant of an old agricultural landscape with small scale field patterns. The landscape is sensitive to further fragmentation by</p>	<p>This raised connection with the WCML, together with the preceding section of embankment, would have minor or moderate visual impacts on views from a small number of farms and dwellings within around 500m, including residents of Dover, and on sensitive recreational users of the Leeds and Liverpool Canal and towpath.</p>

<p>separated junction would require raised structures (mainly embankments) up to 17m high for a distance of around 1km before the route would descend to grade.</p>	<p>development, especially of large height or mass.</p> <p>The route would pass through the southern edge of this old agricultural landscape, fragmenting the small scale field patterns to some degree and intersecting an area of access land and small woodlands around Byrom Hall. However the attractive, low-lying landscape of the canal corridor to the north would be largely unaffected.</p> <p>Further north and west the embankments approaching the raised connection with the WCML would have a localised moderate impact.</p>	<p>Views from the A573 (which would possibly be realigned to facilitate the connection with the WCML) would be partially obstructed by the sections of embankment and viaduct that would form part of the grade separated junction.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Winterbottom to Rostherne (HSM28A)		
<p>This route section is the start of the spur at Manchester Junction towards Manchester Piccadilly. The spur would run into cutting up to 11m deep as it branches off in a north-easterly direction at Hoo Green, continuing past Hulseheath in a mix of cutting, at grade and low embankment. A short 11m high viaduct would provide a crossing over Agden Brook before the route continues in cutting approaching the A556.</p>	<p>The landscape here comprises rolling farmland. The pattern of small fields, dense hedgerows, mature hedgerow trees and small, winding lanes of relatively ancient origin is relatively intact and unspoilt despite the presence of existing detractors including the electricity transmission lines and motorway. Rostherne Mere is an especially attractive and highly valued landscape feature.</p> <p>There would be a moderate adverse impact on landscape character associated with the deep, wide cutting close to Hoo Green and Mere Court (Grade II Listed Building). Any realignment of the A50 at Hoo Green might also have some impact. To the north and east, where the route would be in a mix of embankment, at grade and cutting passing under and over the distinctive winding country lanes, there would be a moderate adverse impact on historic field patterns, hedgerows, hedgerow trees and small woodlands. Near Rostherne Mere, such changes would affect the landscape setting of the mere, although this is already influenced by the A556 to the west and M56 to the north.</p>	<p>There would be localised mainly moderate visual impacts on scattered dwellings and farms close to the route. Visual impacts on Hulseheath, where the route would be on low embankment within 400m of the hamlet, would also be moderate. Elsewhere visual impacts should be limited as the alignment would generally be in cutting.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Rostherne to Ardwick (HSM28B)		
<p>This route section would start immediately west of the</p>	<p>This landscape of this part of the route is characterised</p>	<p>The open southerly views from Ashley (including those</p>

<p>A56 in cutting and continue north of Rostherne Mere, following a gap between the Mere and M56. The route would then cross the Blackburn and Birkin Brook watercourses on a 7m high viaduct. Continuing east across a gentle, south-facing slope, it would rise onto embankment up to 8m high to cross an existing railway south of the village of Ashley immediately north of Tatton Park. A section of cutting up to 9m deep south of the hamlet of Thorns Green would give way to a short 13m high viaduct across the River Bollin before the route returns to cutting and heads north towards Davenport Green. Here the route would pass under the M56 in 14m deep cutting to approach the proposed Manchester Airport station, before entering a 13km long bored tunnel under south Manchester at Davenport Green.</p> <p>The station would be sited on greenfield land north-west of Manchester Airport, parallel to the western edge of the M56 motorway, with station structures set partly in cutting. A car park would be situated between the proposed station and the M56 directly to the east.</p>	<p>by small to medium sized, fairly regular, hedged fields; and retention of historic field patterns, trees and hedges is considered important. Settlement comprises scattered farms, villages and hamlets, many with vernacular buildings. To the west near Rostherne Mere and to the east around Halebank, there is a strong sense of enclosure by trees and woodland but around Ashley the landscape is relatively open, with long views to the south. The embanked M6 north of Ashley is also a key landscape influence.</p> <p>Further north towards Davenport Green, within the Manchester urban fringe, the landscape is characterised by gently rolling topography, small incised streams such as Timperley Brook, regular and irregular small to medium sized fields and narrow winding lanes.</p> <p>The route would isolate a band of land less than 1km wide (including the village of Ashley) between the motorway and the new railway. It would introduce a new viaduct and embankment features that would alter the character of the landscape, especially south of Ashley. It would have direct impacts on a number of buildings and farms, notably at Halebank, as well as on field patterns and small woodlands (including woodland of ancient origin at the crossing of Blackburn and Birkin Brooks). Overall there would be a moderate landscape impact.</p> <p>The station site, although greenfield, would benefit from close association with the motorway and existing airport structures and this should tend to reduce its landscape and townscape impacts. However the alignment would affect the character of the northern edge of Hale Barns (where there would be demolitions). There would also be a direct impact on part of the distinctive woodland along Timperley Brook. Overall the landscape impact would be moderate.</p>	<p>from its church) to Tatton Park, would be interrupted by the embanked HS2 route (300m away), giving rise to a moderate visual impact. The route might also be visible from parts of the Tatton Park parkland (Registered Park and Garden Grade II*) although most views would probably be screened by the mixed plantings around the edge of the park. The short viaduct crossing of the River Bollin near Halebank would have localised visual impact.</p> <p>Both north and south of the station the route would be in cutting, so the visual impacts of the station approaches should be minimal.</p> <p>Views from the village of Davenport Green and the wider area north of the concourse would be contained to some degree by existing woodland along Timperley Brook (although some of this would be directly impacted by the station development, see left).</p> <p>From the west, south and east the upper parts of the station structure would be relatively open to view, although visibility would be reduced by the station's location in cutting. It would cause moderate visual intrusion to residents on the northern edge of Hale Barns, where properties would lie within 300-500m of the concourse. It would also be clearly visible to motorway users, although separated from the motorway by the proposed car park. Again, this is considered to be a moderate impact.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Ardwick to Manchester Piccadilly (HSM26)		
<p>The bored tunnel would end approximately 1.7km east of Manchester Piccadilly in existing railway land at West Gorton. From here the route would run north-west</p>	<p>The station approach would have a moderate adverse impact on the surrounding townscape, as the new viaduct would be located only around 200m north of an</p>	<p>The route would bring minor to moderate visual impacts on its approach to the station. In particular the 10m high viaduct would cause visual intrusion for users of the</p>

<p>towards Ardwick. Initially in cutting, it would emerge to approach the proposed station at Manchester Piccadilly on a new viaduct around 10m high, passing close to public open space along the River Medlock and then running through an area of light industry and commercial use.</p> <p>The new station would be sited north of the existing Grade II listed Manchester Piccadilly station, on land that currently comprises a mixture of office blocks and open-air and multi-storey car parking. It is expected to be similar in height to the existing station. A new car park would be provided in the area north of the station.</p>	<p>existing railway corridor with viaducts of similar height, giving rise to cumulative effects on townscape character. In addition, there would be a moderate adverse impact on the setting of the public open space (Local Nature Reserve) to the north, along the River Medlock, less than 50m away.</p> <p>In general the station development would fit well with the existing built form as it is expected to be similar to the existing Manchester Piccadilly station in terms of height and scale. However appreciation of the existing station structure may be adversely affected, the northern facade potentially being obscured by the new station building. The inclusion of extra land within the operational site boundary may however offer opportunities for high quality landscape and urban design.</p> <p>Overall the townscape impact of the approach and station is expected to be moderate adverse. With sensitive design the, this could result in neutral or beneficial impacts on townscape.</p>	<p>public open space close to the River Medlock, within 50m of the route.</p> <p>There would also be some additional visual intrusion affecting users of north-south routes in the Ardwick area, notably Mancunian Way and Chancellor Lane, who would pass under two separate railway corridors within around 200m of each other.</p> <p>The station building is not expected to give rise to significant visual impact due to its close visual relationship with the existing station and the absence of sensitive visual receptors in the surrounding area.</p>
<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>

3.2. Eastern leg

Route Description/ Impact Overall	Landscape/ Townscape Impacts	Visual Impacts
Marston to Birchmoor (HSL1)		
<p>This section would run east of the M42, initially in shallow cutting (up to 8m deep), then on 2.2km long viaduct around 8m high past Kingsbury Water Park and over the River Tame and its floodplain. The viaduct would closely parallel the edge of the motorway, gradually rising to around 14m high at its northern end.</p> <p>North of Kingsbury the route would pass onto an 18m high embankment and then a 380m long 16m high viaduct over the M42. Diverging from the western edge of the motorway by around 400m, it would continue on low embankment past Holt Hall Farm and then run into 11m deep cutting past Whateley village. Heading north, close to the edge of the built up area of Tamworth, it would be entirely in cutting apart from the short, low crossing of Kettle Brook.</p>	<p>The landscape in this area comprises gently undulating arable farmland and alluvial river terraces, strongly influenced by busy A roads and the M42. Kingsbury Water Park includes extensive areas of wetland, scrub and woodland centred on former gravel workings. Further north the landscape is fragmented, with a complex mix of agricultural, industrial and urban fringe land uses and open arable fields. The exception is around Whateley where pockets of pasture in small hedged fields survive and the landscape is more sensitive.</p> <p>At Kingsbury Water Park the landscape character impact of the viaduct would be partly contained by existing tree cover and also mitigated by proximity to the M42, although there would inevitably be some woodland loss. North of Kingsbury the viaducts and embankment would be prominent new elements in an area of farmed landscape. However the landscape here is already influenced by an existing elevated motorway section, a power line, existing railway infrastructure, and depot and storage sites. West of the motorway the route would cut through part of the landscape setting of the village of Whateley. These impacts are expected to be moderate.</p> <p>Further north, there would be a minor direct impact on informal public open space along Kettle Brook.</p>	<p>The new viaduct and woodland loss would give rise to some visual impact on recreational receptors, especially on the northern edge of Kingsbury Water Park. These impacts are expected to be moderate.</p> <p>The route would pass within 200m of residential properties at Kingsbury. Given the existing visual context (see left) the visual impact is expected to be moderate.</p> <p>Further north, any visual impact on the south-eastern outskirts of Tamworth should be limited as the route would mainly be in cutting. However recreational users of the open space along Kettle Brook would be affected locally in the short section where the route is close to grade.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Birchmoor to Tonge (HSL6)		
<p>The route would follow the M42 corridor initially in cutting up to 22m deep, passing beneath and to the east of the motorway. North of Polesworth it would emerge onto embankment and viaduct (around 900m long and 17m high), running through Pooley Country Park and across the Coventry Canal and River Anker. North of this point it would cross open, empty countryside, staying within</p>	<p>This area is characterised by fairly complex, undulating topography and limited woodland cover. In the south the landscape is mainly arable; here the M42 is a prominent feature crossing the Anker valley on embankment and viaduct near Polesworth. Further north is a mixed open agricultural landscape with smaller fields, nucleated hilltop villages, a dense network of winding lanes and a relatively</p>	<p>The route would pass between the motorway and the settlement of Polesworth on embankment and structure, generating some additional visual intrusion, potentially affecting both the Country Park and the settlement.</p> <p>Users of the Pooley Country Park and the Coventry Canal would experience a localised major visual impact as the HS2 route would pass within 50m of the museum and</p>

<p>around 300m of the motorway and generally close to grade, with a further low viaduct over Bramcote Brook.</p> <p>Near Austrey the route would diverge from the motorway on 8m high embankment before running into 20m deep cutting through Appleby Hill and passing around 300m east of Appleby Parva and Appleby Magna at grade or in cutting. Approaching Measham, the route would run on an 880m long viaduct 12m high over the River Mease and floodplain, then 22m high over the floor of an adjacent quarry. It would pass the eastern edge of Measham on low embankment or in cutting and cross the undulating terrain north of Measham in a mix of embankment and cut, rejoining the M42/A42 corridor near Packington where the route would mainly be in cutting with a short viaduct up to 7m high just north of the village.</p> <p>Continuing northward in parallel with the A42, the route would largely be in cutting, 10-20m deep, except near Coleorton where there would be a section of 20m high embankment. There would also be a short section of 12m high embankment and viaduct near Stocking Lane, north of Worthington.</p>	<p>strong historic character. The M42 remains a key landscape feature, the moving traffic often visible in the many long views, especially from higher ground. This landscape of undulating low hills has been affected in parts by mining and mining settlements. More recently there has been extensive new woodland planting within the National Forest. However the landscape also retains pockets of older landscape, with small fields, dense hedgerows and traditional villages such as Packington.</p> <p>At Polesworth there would be a landscape character impact where Pooley Country Park, including areas of young planting on reclaimed land, would be directly impacted over a distance of 500-600m. The impact would be tempered by proximity to existing transport infrastructure and industrial uses, so is appraised as moderate.</p> <p>Further north, where the route diverges from the motorway corridor, it would fragment the open countryside near Appleby Parva and Appleby Magna (Conservation Area), which would be affected by the deep cutting through Appleby Hill. Landscape fragmentation would also occur in the Coleorton area. Here the high embankment would largely be screened by woodland from Coleorton Hall (600m, Conservation Area and Grade II* Registered Park and Garden), but there would be significant loss of young woodland plantings. These impacts are considered to be moderate.</p> <p>Finally, the short section of embankment and viaduct near Stocking Lane, north of Worthington, would have a minor effect on landscape character locally; and the route would cause some landscape fragmentation as it crosses open countryside 500m south of the A42 near Tonge.</p>	<p>heritage centre, on low embankment at this point. From the settlement (Conservation Area, 300m away from the route), views would generally be filtered through trees and impacts are expected to be localised and minor. North of Polesworth, around Potford Bridge, the viaduct would be clearly seen by passing motorists.</p> <p>Further north, there would be moderate visual impacts where the route is on embankment near Austrey (200m) and Appleby Parva (300m away). However any visual impacts on Appleby Magna and Measham should be minor due to the route's location in cutting and the distance from residential areas respectively.</p> <p>At Packington (Conservation Area, 100m) there might be glimpsed views of the new viaduct but these would be filtered through trees and seen in the context of the A42 just beyond, so impacts are expected to be minor.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Tonge to Long Whatton (HSL9A)⁴		
<p>In this short section the route would hug the south side of the A42 corridor south-east of East Midlands Airport in cutting or on low embankment. Reaching the M1, it would</p>	<p>The landscape in this part of the route comprises sparsely populated, gently rolling farmland with small woodlands and</p>	<p>Some residents on the western outskirts of Long Whatton (Conservation Area), east of the M1, would experience minor or moderate visual intrusion from HS2 viaduct</p>

⁴ Set out in the engineering plans and profiles as Tonge to Donington Park (HSL9A)

<p>rise onto embankment and viaduct 680m long and 16m high over Diseworth Brook floodplain and the motorway, continuing north-east in cutting up to 10m deep.</p>	<p>streams.</p> <p>For most of this section the landscape impact of the route would be minor as the line would be close to grade and adjacent to the road corridor. However as the route approaches the M1, the higher embankment and viaduct would intrude on the character of the gently rolling farmlands next to Westmeadow Brook, giving rise to a moderate landscape character impact. There would also be a direct impact on one small area of woodland.</p>	<p>where it crosses over Diseworth Brook and the M1. Views would be from distances of 450-600m and would be partly screened by existing tree cover, so the effect is considered to be minor or moderate at worst.</p>
<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>
<p>Long Whatton to Long Eaton (HSL9B)⁵</p>		
<p>North of the M1 crossing near Long Whatton the line would parallel the eastern edge of the M1 past Kegworth mainly in cutting around 10m deep. North-west of Kegworth it would rise onto embankment and then onto viaduct 3.2km long and 12-14m high over the A453 and Soar floodplain, passing west of Ratcliffe on Soar power station and crossing an existing railway.</p> <p>North of the power station it would run in cut and cover tunnel through a wooded bluff at Thrumpton just south of the Trent valley, crossing the river, the Trent and Mersey Canal and two existing railway lines, again on viaduct 3.2km long and now up to 21m high.</p> <p>The viaduct would extend past Trent Lane (residential area) and rise through Long Eaton town centre along the line of an existing railway (at grade or in cutting) to a height of up to 18m above existing ground levels. The viaduct would continue north of Long Eaton towards the East Midlands Hub station (see HSL12 below).</p>	<p>This landscape comprises wide, flat floodplains with medium to large, regular fields in mixed farming use. River channels, often along managed courses, are bordered by riparian trees but otherwise there is limited woodland cover except on the steep riverside bluffs and on former gravel extraction sites. The power station, electricity transmission lines, existing railway lines and areas of open water are strong influences locally. Large areas of wet gravel workings in the valley bottoms have been restored for nature conservation and recreational uses.</p> <p>West of Kegworth the route would have limited landscape character impact due to its location in cutting and close association with the M1. Further north, however, the embankment at Kegworth and the long viaduct over the Soar floodplain would be intrusive new landscape elements, but given the existing landscape context, dominated by Ratcliffe on Soar power station, the impact is considered moderate.</p> <p>Meeting the Trent valley, the route would have a direct impact on the prominent, wooded riverside bluffs at Thrumpton, also crossing the western edge of Thrumpton Conservation Area. Here it would add a further high level structure to the valley landscape and would adversely affect the distinctive southern valley skyline. The impact on the</p>	<p>At Kegworth any visual impact should be minor as the route would largely be in cutting past residential areas.</p> <p>Further north the embankment and viaduct would affect views from the A453 as well as recreational users of the Ratcliffe Cut and the River Soar where there are historic canal structures, public footpaths and two marinas within 300m of the route. These impacts are considered moderate, as the immediate visual context includes East Midlands Parkway station and the power station. There would be limited impacts on the nearby village of Ratcliffe on Soar, as this lies south of the A453.</p> <p>At the crossing of the River Trent, the visual impact of the high structure on recreational users of the Trent and Mersey Canal and the Trent Valley Way east of Trentlock, as well as on residents of the Trent Lane area, would be major. Similarly, from part of the northern edge of Thrumpton Conservation Area (grounds of Thrumpton Hall, open to the public by arrangement) there is potential for significant visual impact.</p> <p>However from the popular recreational area of Trentlock itself the impact would be less pronounced as the HS2 viaduct would be seen in the context of the existing (lower) rail viaduct and the power station beyond.</p> <p>At Long Eaton, where the route would follow the existing</p>

⁵ Set out in the engineering plans and profiles as Donington Park to Long Eaton (HSL9B)

	<p>character of the valley would be major in this area.</p> <p>North of the River Trent there would be a further direct impact on valley side woodland, and the long 18m high viaduct through Long Eaton town centre would inevitably have at least a moderate impact on townscape character, including some effect on the character of the nearby Erewash Conservation Area</p>	<p>rail corridor on an elevated structure, visual impacts are again expected to be major, particularly where sensitive receptors would have close range views of the alignment. Residents in the New Tythe Street and Bonsall Street areas seem likely to be most affected.</p>
Major adverse (--)	Major adverse (--)	Major adverse (--)
Long Eaton to Trowell (HSL12)		
<p>North of Long Eaton the route would continue on viaduct for 1.6km, gradually descending to grade, with the proposed East Midlands Hub station being sited on viaduct around 9m above existing ground levels west of the Nottingham suburb of Toton. Continuing northwards, the line would rise again at Sandiacre onto viaduct 1.2km long (continuing northwards into HSL13A, see below) and up to 15m high.</p> <p>The East Midlands Hub station would be located within an extensive area of railway sidings, Toton Yard, on the eastern edge of the Erewash valley. There would be some greenfield land take for the new station access, which would be from the north, off the A52. The access road would descend gently towards the valley bottom in the area due west of Toton. The station forecourt, underlain by parking, would separate the station building from nearby suburban housing to the east. The roof of the station concourse and overbridge would be around 20m above existing ground levels.</p>	<p>The station site would lie within an extensive area of railway sidings and scrub woodland regeneration, in the bottom of a wide and relatively well-treed valley floodplain. The floodplain is fringed on its western edge by the River Erewash, the Erewash Canal and the built up area of Long Eaton. Just to the north-east of the station site is open farmland and sewage treatment works; and to the south-east housing at Toton. Further north, between Sandiacre and Stanton Gate, the landscape retains an attractive traditional washlands character, with open flood meadows, riparian woodland and a historic canal bridge, overlooked from Sandiacre Cloud Side (Conservation Area).</p> <p>The station would be sited on former railway land, and in that sense would be in keeping with existing landscape character. However the elevated station approach, concourse and other structures would tend to intrude on the low-lying floodplain character of the landscape. Greenfield land take for the station access would be fairly limited, but a significant area of young woodland adjacent to (or possibly part of) Banks Road Open Space would be lost. These impacts are considered to be moderate to major, depending on detailed design.</p> <p>To the north, the lengthy proposed viaduct near Sandiacre would result in the loss of riparian woodland and would intrude on the characteristically flat floodplain landscape, giving rise to major impacts on landscape character.</p>	<p>Roof heights for the station concourse, overbridge and car park structures are likely to be well above existing ground levels. Existing housing at Lonsdale Drive and Banks Road lies within 50-100m and some residential views are likely to be affected. Although there is some existing intervening tree cover, there is potential for locally major visual impacts, depending on detailed design.</p> <p>There might also be occasional views of the station from parts of the attractive and historic Erewash Canal (west of the yard) and from residential areas of Long Eaton (on rising ground to the west). However any wider visual impact should be fairly limited due to the valley bottom location and existing strong tree cover.</p> <p>To the north, near Sandiacre, further major visual impacts are expected, as the viaduct would interrupt scenic views east to the attractive floodplain landscape and historic canal bridge. This would adversely affect the setting of the Conservation Area as well as some residential views from as close as 50m. In addition, the viaduct would intrude on the views of recreational users of the canal, footpaths and minor roads in this area.</p>
Major adverse (--)	Major adverse (--)	Major adverse (--)
Trowell to Strelley (HSL13A)		

<p>At Stanton Gate the route would continue north on viaduct up to 18m high for a further 1.5km, passing over the Erewash floodplain, river and canal, on the eastern edge of the elevated M1 (which would be realigned slightly to the west) past Trowell.</p> <p>Running northwards on embankment up to 14m high, it would cross the disused Nottingham Canal then run broadly at grade alongside the motorway. South-west of Strelley it would diverge from the motorway onto 8m high embankment and then into 12m deep cutting before entering an 810m long cut and cover tunnel under the village.</p>	<p>This area comprises undulating low hills and ridges with small to medium-sized hedged fields, mixed farming and winding lanes. Towards the north of the section the ground rises at Catstone Hill and Strelley, where the village and attractive, rolling unregistered parkland around the hall form a Conservation Area.</p> <p>The viaduct past Stanton Gate (as described in section HSL12) and the high embankment past Trowell would have localised moderate impacts on the landscape character of the Erewash floodplain and the Nottingham Canal corridor respectively, but otherwise the landscape of the southern part of this section should be little affected, due to its close alignment with the M1. Further north, the route would pass west of Catstone Hill, avoiding the need for large scale earthworks here.</p> <p>South-west of Strelley church and hall, the marked change in landform around the tunnel portal would adversely affect landscape character and setting of the western part of the village. There would be a direct impact on three clumps or belts of parkland trees, including trees that form part of the immediate setting of the hall (listed Grade II), and likely permanent loss of mature trees. Careful routing and the proposed use of cut and cover tunnel should limit the residual landscape impacts here, but they are still expected to be moderate, verging on major.</p>	<p>There would be localised moderate to major visual intrusion affecting residents and recreational users in the Stanton Gate and north Stapleford areas, who would have views of viaduct from 50m or less, sometimes partly screened by existing tree cover.</p> <p>North of Trowell, much of the route would run across empty countryside next to the motorway, with little visual impact.</p> <p>In the Strelley area, many public views of the route would be contained by trees, but some residents and users of public footpaths, including a section of the Monks Way long distance path, would have short range views over the cutting and approach to the tunnel portal, located immediately to the south of Strelley Main Street. A moderate to major visual impact is expected here, although it may be capable of mitigation.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Strelley to Huthwaite (near Sutton in Ashfield) (HSL13A)		
<p>North of Strelley the route would emerge from cut and cover tunnel and run north towards the M1 corridor at Nuthall, passing west of Broxtowe on embankment up to 11m high and bridging the A610 and B600 on short viaducts up to 14m high.</p> <p>Diverging from the motorway by up to 500m, the route would run past Hucknall on embankment generally around 8m high but increasing to 19m high locally. North-west of Hucknall it would enter two sections of cutting (up to 22m deep) then pass onto 24m high embankment near Annesley Hall, where the route would rejoin the M1 corridor.</p>	<p>Here the route passes through urban fringe landscapes between Nottingham and Sutton in Ashfield that are heavily influenced by housing, industry and areas of former mineral working but retain some notable areas of intact farmland and woodland. The landscape has a strongly undulating character, particularly in the north where it is deeply incised by small rivers and streams, the largest of which is the Erewash. Landscape impacts would often be modest, especially where the route is closely associated with the motorway. Locally however, the effects on the underlying landform would adversely affect landscape character.</p> <p>In the south, near Broxtowe and Hucknall, the relatively low</p>	<p>Much of this part of the alignment is not publicly accessible or widely visible as there are relatively few roads or paths. Visibility from the main residential areas would generally be limited.</p> <p>There would be localised, mainly minor, visual impacts on a small number of residents on the western outskirts of Broxtowe and Hucknall, where the route would run on low embankment 100-200m away with intervening trees.</p> <p>At Nuthall, the viaduct over the A600 would have moderate or major visual impacts on a small number of nearby residents, although the route would be seen in the</p>

<p>Continuing north, the alignment would again diverge from the M1 east of Pinxton, passing through undulating countryside on a series of high embankments and viaducts, notably the 440m long viaduct up to 25m high over the River Erewash (and floodplain) near Pinxton. There would also be a section of 15m deep cutting beneath the A38, where the Sheffield line connection would branch off westwards.</p>	<p>embankments would have a minor impact. Further north, north-west of Hucknall, the sections of high embankment and deep cutting would have a moderate adverse impact on landscape character, exacerbated by significant loss of woodland, especially in the area south of Annesley Park (Registered Park and Garden Grade II*). Some of this woodland is ancient in origin but the majority appears to be commercial conifer plantation, which would tend to contain the route and limit any wider impact on landscape character.</p> <p>Near Pinxton, where the route would diverge from the M1, there would be moderate to major landscape impacts, due to fragmentation of open countryside and mismatch with underlying landform. The viaducts over the River Erewash and Normanton Brook would form significant new features but would not be unduly prominent. However several sections of high embankment at the crossings of smaller streams would intrude locally on landscape character (for example west of Huthwaite), as would the deep cutting beneath the A38. Unregistered parkland around Brookhill Hall would be directly impacted, as would several small woodlands.</p>	<p>context of the elevated M1.</p> <p>The substantial viaduct over the River Erewash and the high embankments and deep cuttings north of Pinxton would have moderate impacts on motorists on the M1 (not sensitive receptors) and scattered dwellings and public footpaths close to the route. Elsewhere significant visual impacts are not expected.</p>
<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>
<p>Pinxton to Clay Cross (HSL15A)</p>		
<p>The Sheffield spur would diverge westwards from the mainline between Huthwaite and Hilcote, initially on low embankment through farmland between two industrial areas. North of Hilcote it would run into cutting up to 13m deep, passing under the M1 and through parts of the villages of Old Blackwell and Newton.</p> <p>Continuing west through open countryside the route would cross a tributary of Morton Brook on a short embankment up to 19m high, run into cutting and then join the existing Erewash Valley line near Clay Cross, continuing along this line at grade to Danesmoor.</p>	<p>This landscape, west of the M1 and south of Chesterfield, has a gently undulating landform, mixed pasture and arable land, and relict semi-natural woodlands on steeper slopes. Remnant medieval strip fields surround the historic village cores (as at Old Blackwell, Conservation Area), but landscape character has also been influenced by later coalfield development.</p> <p>The Sheffield spur would tend to fragment this historic farmed landscape. Close to Huthwaite this would be a cumulative effect with the mainline (see HSL13A above). North of Hilcote, the low embankment would intrude to some degree on landscape character; and west of the M1 there would be a direct impact on a small part of Old Blackwell Conservation Area close to the motorway. Around Newton the line would be less intrusive, but would cut through the rolling landform. There would be a direct impact on several small areas of woodland and the route would</p>	<p>There would be moderate visual impacts in a number of locations, affecting residents on the northern edge of Hilcote, 200m from the embanked route; residents of Old Blackwell and Newton, who would see the line in cutting; and recreational users of the surrounding countryside, including the Silverhill Trail west of Newton, which the line would cross on embankment.</p>

	<p>bisect a substantial area of young woodland south of Clay Cross. These impacts are considered moderate, locally major at Old Blackwell where the Conservation Area would be fragmented.</p> <p>Beyond Stonebroom any landscape impacts should be minor, as the route would follow an existing railway line at grade. However some loss of existing lineside vegetation may occur.</p>	
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Huthwaite to Woodall (HSL13B)		
<p>North of Huthwaite the alignment would rejoin the M1, running along its eastern edge to north of Tibshelf in cutting up to 24m deep. It would then pass beneath the motorway and follow the motorway's western edge past Hardwick Hall, still mainly in cutting apart from a few short sections of embankment, notably an embankment up to 12m high near Stainsby.</p> <p>South-east of Sutton Scarsdale the route would run onto embankment up to 21m high on the approach to a 260m long 11m high viaduct over M1. Veering north-east towards Bolsover on low embankment, it would run along the western edge of Carr Vale, around 500m west of the built-up area on a 540m long 8m high viaduct, continuing northwards across the River Doe Lea and through an area of former mineral workings on a mixture of high embankment, viaduct and cutting up to 22m deep.</p> <p>After an oblique crossing of the M1 on embankment and viaduct 490m long and up to 28m high east of Staveley, the route would make a connection to the Staveley Depot approach. Beyond this point it would run mainly in 10-15m deep cutting along the western edge of motorway as far north as Woodall Services.</p>	<p>The landscape here shows significant variation in terms of both topography and land use. South of Hardwick Hall and north of Bolsover industrial and mining influences are evident. Elsewhere the mainly farmed landscape is characterised by broad, undulating landform, estate woodlands and parklands and long distance views. This landscape is relatively intact and unspoilt although influenced by proximity to the motorway.</p> <p>South of Hardwick Hall the deep cutting through undulating topography would scar the landscape and have a direct impact on a number of small woodlands, including young plantings associated with the M1 corridor. Further north, the route would affect the sensitive landscape around Hardwick Hall (National Trust and English Heritage properties and listed structures, Registered Park and Garden Grade I), mitigated by the fact that it would be in cutting outside the park boundary, immediately west of the M1. These impacts are appraised as moderate.</p> <p>Further impacts would occur at Stainsby and Heath (Conservation Areas) where the route, adjacent, inevitably would damage the landscape settings of the villages and existing woodland cover. The high embankment and viaduct south-east of Sutton Scarsdale would cause major intrusion to the open landscape of this area but would not greatly affect the setting of the Conservation Area.</p> <p>The alignment past Bolsover (Conservation Area) would disrupt the large scale, mainly arable farmland south-west of the town. Screening by topography and existing woodland should however help to minimise effects on the landscape</p>	<p>In the southern part of the route, including Hardwick Hall, visual impacts are expected to be limited as most of the route would be in cutting and enclosed by landform and/or existing woodland.</p> <p>Near Stainsby (Conservation Area) there would be a localised visual impact on residents from embanked crossings of River Doe Lea tributary streams. At Sutton Scarsdale (Conservation Area) the embankment and viaduct over the motorway would mainly be screened from view by landform.</p> <p>Further north, the route would have moderate or locally major visual impacts on visitors to Carr Vale and Snape Bog Nature Reserves, directly adjacent to the alignment, although existing vegetation may offer partial screening. There would also be moderate visual impacts on residents of properties on Chesterfield Road, around 200m to the west of the preferred route. However the Conservation Area and the main residential areas of Bolsover, around 500m east of the route, seem likely to have only glimpsed views, attenuated by distance and partially screened by landform and tree cover.</p> <p>Further north towards Woodall, very few visual receptors would be affected by the route, which would mainly be in cutting. The exception would be motorists on the M1 (not sensitive receptors) who would have views of the viaduct crossing of the motorway and glimpsed views of the depot connection in deep cutting. There should be little or no visibility from Barlborough or Barlborough Hall</p>

	<p>setting of the town and castle, which would be moderate. There would be some woodland loss on the edge of Carr Vale Nature Reserve and along the Doe Lea river corridor.</p> <p>North of Bolsover an area of restored mineral workings and landfill would be broken by new embankments and cuttings. The high viaduct crossing of the M1 would bring major landscape change locally. The landscape impact of the deep, wide cuttings to the north would be reduced by close association with the motorway, but there would be some further woodland loss.</p>	(Registered Park and Garden Grade II), east of the M1.
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Staveley Infrastructure Maintenance Depot and Connection		
<p>The connection to the Infrastructure Maintenance Depot at Staveley would begin in cutting up to 20m deep near to the M1. It would then join an existing rail line running north-west towards Staveley, initially at grade, then on low (5-6m high) embankment or in shallow cutting.</p> <p>Approaching the depot the route would pass onto viaduct 370m long and 9m high over the River Rother. The depot itself would be sited on former industrial, brownfield land north of the River Rother at Staveley. It would be slightly embanked at its eastern end and slightly cut into the hillside to the west.</p>	<p>The depot approach would pass through open, mainly arable farmland, former coal mining areas along the Doe Lee valley, and the eastern edge of the built-up area of Staveley. Poolsbrook Country Park lies adjacent to the line on the eastern outskirts of Staveley. The depot site sits on the high, northern side of the Rother valley, set back by 300-400m from the riverside at Staveley, and is surrounded by other brownfield and industrial land. The historic cores of Staveley and Barrow Hill (south-east and north-west of the depot site respectively) are Conservation Areas.</p> <p>The depot connection would have limited impact on landscape character due to its close association with the motorway corridor and the fact that it has been routed along a disused railway line. However some loss of existing lineside vegetation is likely.</p> <p>The final approach viaduct and depot, despite the existing industrial context, would have a moderate adverse impact on the character of the surrounding area due to their location high on the valley side, exposed to view. This would affect the settings of Staveley Conservation Area (350m) and Canal Marina (250m), and the character of the river corridor south of the depot. At Barrow Hill, there would be a localised major effect on the setting and outlook of the Conservation Area.</p>	<p>There would be minor visual impacts on residents and visitors to the Country Park at Poolsbrook and Netherthorpe, especially where the route runs on low embankment. However in many areas existing lineside vegetation should help to provide screening.</p> <p>A small number of residents on the southern edge of Barrow Hill, adjacent to the depot, may experience moderate or even major visual impacts, depending on the height and location of depot structures. Recreational users of the Canal Marina (250m) and Chesterfield Canal and Trans Pennine Trail (c 400m) to the south may also be affected.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)

Woodall to Bramley (HSL14)		
<p>North of Woodall the route would continue along the western edge of the M1 and then the M18 corridors. There would be a mixture of cutting, embankment and viaduct, dependent on the underlying, rolling topography.</p> <p>Although mainly aligned closely with the motorway, the route would diverge from the road by up to 500m in the Norwood and Aston areas, finally departing from the motorway corridor north of Bramley to cross open, undulating countryside east of Ravenfield.</p> <p>The principal structures would be west of Norwood (embankments and 370m long viaduct up to 20m high); Aston (embankments and two viaducts 170m and 430m long and up to 26m high); M18 junction (embankments and two viaducts 360m and 580m long and up to 20m high). Most other parts of the route would be in cutting or on low embankment.</p>	<p>Here the route would pass onto the Magnesian limestone, a narrow north-south belt of elevated land extending from Nottingham to North Yorkshire. This landscape contrasts strongly with that of the lower-lying industrial coalfields to the west and is more vulnerable to change. Key characteristics include rolling topography, large arable fields, estate parklands and woodlands (some of ancient origin), limestone and brick-built settlements, and long distance views especially to the west. The route would run close to the west-facing slopes of this elevated landscape.</p> <p>Despite the influence of the nearby motorway, there would be some major landscape impacts in this section, especially where the route departs from the motorway corridor and rises onto tall structure, fragmenting and intruding on the attractive rolling countryside south of Norwood and Aston (Conservation Area, adjacent).</p> <p>At Norwood, the route would cross Woodall Pond and have a direct impact over a distance of around 1km on distinctive valley-side woodland in an area that appears to be a relict designed landscape, as well as a minor impact on an area of ancient woodland further north. At Aston, the route would cross the unregistered parkland landscape associated with Aston Hall (recently discovered to have associations with Capability Brown) on tall structure.</p> <p>At the M18 junction, where the route would rise up to 20m above existing ground levels and cross an already complex motorway junction in a visually exposed location in open countryside, a further major impact is anticipated, cumulative with the existing motorways. At the northern end of the section, near Firsby Reservoir, the setting of the Local Nature Reserve would be adversely affected.</p>	<p>Over much of this section visual impacts would be minor due to the route's location in cutting. Hence any visual impacts at the larger settlements of Wales and Bramley should be limited.</p> <p>However where there are tall structures greater impacts may be expected. Hence major visual impacts are likely near Aston, where some residents on the eastern edge of the settlement together with other sensitive receptors (nearby cricket ground, hotel and fishing lakes) would experience visual intrusion from the 27m high viaduct within 300m.</p> <p>Further north, near the M18 junction, views from Brampton en le Morthen are expected to be unaffected. However at Thurcroft, to the north, some residents on the western edge of the village (250m from the route), who currently have clear views over and beyond the M1, may in future have these views interrupted by the more northerly of the two HS2 viaducts. This is again a major albeit localised impact.</p> <p>At the northern end of the section, near Firsby Reservoirs, the route would pass within 100m of the Local Nature Reserve on embankment 13m high, with a moderate visual impact on visitors to the reserve.</p>
Major Adverse (--)	Major Adverse (--)	Major Adverse (--)
Bramley to Clayton (HSL16)		
<p>This route section would run mainly through open, elevated countryside between Rotherham and Doncaster, including crossings of the Rivers Don and Dearne at Mexborough.</p>	<p>The landscape here is strongly influenced by the underlying coal measures and Magnesian limestone. The complex topography is incised by small streams. To the west are low-lying coalfield farmlands; to the east a steep, often</p>	<p>As the route corridor is relatively sparsely populated, the visual impacts of this route section would be less pronounced than its landscape impacts but nonetheless widespread and frequently major as many sensitive</p>

<p>From Bramley, the route would cross the area known as Conisbrough Parks, with a cutting 15m deep through Hooton Cliff near Hill Top and two lengthy sections of 10-15m high embankment north and south of this point. Approaching Conisbrough and Mexborough, the route would pass over the River Don on viaduct 740m long 22m high, then over the River Dearne on a further viaduct 880m long and 12m high.</p> <p>It would continue across the Dearne floodplain and rise steeply up the valley side past the village of Barnburgh on embankments up to 22m high and 2km long, then breaking through the limestone scarp of Barnburgh Cliff to a depth of 25m. Veering north-west past Hickleton, the route would largely remain in cutting up to 20m deep, bisecting two prominent limestone ridges (Bilham Belvedere and Watchley Crag), then emerging on embankment and 490m long viaduct up to 21m high over a tributary of Frickley Beck near Clayton.</p>	<p>wooded limestone escarpment and open plateau. Much of the area is sparsely settled arable farmland, but there are also many historic nucleated stone villages with smaller hedged enclosures, estate parklands, and distinctive landform features where outcrops of limestone form 'cliffs' and outlooks. The landscape is generally unspoilt and along most of this section has been identified in local planning documents for Doncaster Borough as being of special landscape value and hence highly sensitive to change. The exception to this is the area around Conisbrough and Mexborough. Here the broad river corridor landscape has been influenced by industry and mining, but is now well-wooded and used for recreation.</p> <p>In this section there would be extensive, severe impacts on landscape character and quality as the route would cut through and fragment the attractive and unspoilt countryside of the Magnesian limestone ridge, adversely affecting its distinctive character and wealth of natural and cultural heritage features.</p> <p>The areas most affected would be Conisbrough Parks, where there would be a cutting through Hooton Cliff and some of its ancient woodland; the river corridor between Conisbrough and Mexborough, where the large new viaduct over the River Don would intrude on landscape character and result in significant loss of riparian woodland; east of Barnburgh (Conservation Area), where the high embankment and deep cutting would dramatically affect the wider, scenic landscape setting of the village; Barnburgh Cliff, Bilham Belvedere and Watchley Crag, where there would be a direct impact on distinctive landform and designed landscape features associated with neighbouring parklands at Hickleton (Conservation Area and Grade II Registered Park and Garden), Barnburgh and Bilham (the latter two unregistered); and finally, Frickley, where the major new viaduct would intrude on landscape character and on the setting of the unregistered Frickley Park.</p> <p>These impacts, each potentially major in its own right, would cumulatively have a very significant impact on landscape character and on Doncaster's areas of special landscape value.</p>	<p>recreational receptors as well as residents would be affected.</p> <p>On the western edge of Conisbrough, residents would have views of the alignment on 15m high embankment from around 700m. At Denaby, the viaduct over the River Don would cross Old Denaby Wetland Local Nature Reserve, causing major visual intrusion to visitors. At Mexborough, recreational users of the river corridor as well as visitors to Castle Hill (Scheduled Monument, 300m) and residents on the town's eastern outskirts (200m) would also be affected by clear short range views of the Don viaduct.</p> <p>Further north, the viaduct and embankments over the River Dearne and floodplain would intrude on the views of recreational users of the Dearne Way and Trans Pennine Trail. The embankments would also be visible from parts of Harlington and Barnburgh (Conservation Area) around 600m to the west, with a moderate adverse effect on the setting of the Conservation Area.</p> <p>Beyond Barnburgh, the main visual impacts would be on local footpath users, who are likely to be highly sensitive to change, especially as the limestone countryside around Barnburgh and Hickleton includes various popular features that offer stunning long distance views, including St Helen's Chapel, Barnburgh Cliff, Bilham Belvedere and Watchley Crag, all extremely close to the route. These are expected to be major impacts.</p> <p>North of Hickleton, glimpsed views of the route may be possible from parts of Hickleton Golf Course, while walkers around Frickley and Clayton (Conservation Area) would experience moderate to major visual intrusion from the high embankment and viaduct.</p>
<p>Major Adverse (--)</p>	<p>Major Adverse (--)</p>	<p>Major Adverse (--)</p>

Clayton to Havercroft (HSL16)		
<p>From Clayton the route would head north-west through open, undulating countryside past the settlements of South Kirkby, Hemsworth, Kinsley and Havercroft. The route would be on a mixture of embankment and cutting, the highest sections of embankment being north of Clayton (18m high), south-west of Hemsworth (17m high) and west of Kinsley (12m high). Cutting depth would generally be in the 7-14m range.</p>	<p>Much of this landscape is former coalfield which has been extensively remodelled by coal extraction and then by restoration to agricultural use. There are few hedges or hedgerow trees. Near South Kirkby the ancient woodland at Howell Wood just south of the preferred alignment is a prominent landscape feature; but elsewhere there is often little woodland cover except along stream courses. The nearby coalfield settlements also influence landscape character.</p> <p>This route section would fragment the coalfield farmland landscape, the higher sections of embankment having an adverse impact on landscape character locally. There would also be moderate impacts on the landscape settings of some surviving historic landscape features, notably South Kirkby Camp (prehistoric settlement, Scheduled Monument), Vissitt Manor (listed Grade II) and Kinsley Moat and Fishpond (Scheduled Monument), all within around 100m of the route. Kinsley Moat would be most affected as the route would pass this site on embankment. There would be no significant woodland loss along this route section.</p>	<p>There would be moderate adverse visual impacts in a few areas, notably near Clayton, where users of the local footpath network would have clear views of the line from high ground north of the village; and at Kinsley, where some residents on the western edge of the village would have views of the line passing 300-600m away on embankment.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
New Crofton Rolling Stock Depot and Connection		
<p>This Rolling Stock Depot would be sited around 300m south of New Crofton and 250m north of Anglers Country Park east of Wakefield. The approach to the depot from the mainline to the east would be mainly at grade just east of New Crofton, rising locally to 10m to cross an existing railway. The depot itself would be sited on reclaimed land south of but separate from the existing railway. It would be in shallow cutting at its eastern end and on low embankment to the west.</p>	<p>The landscape in this area is relatively open and exposed, but strongly influenced by former mining and mineral railways. The depot site would lie parallel with an existing railway line, on a gentle south-facing, farmed slope, at least partly on former industrial land. Nostell Priory Registered Park and Garden Grade II*) lies around 800m north-east of the proposed depot site, separated from it by the preferred HS2 mainline.</p> <p>The depot approach, rising locally to cross an existing railway, would have a localised minor or moderate landscape character impact. The depot itself, running alongside, but separate from, the existing railway, would benefit from association with the railway and reclaimed land, but nonetheless is likely to intrude on landscape character to a moderate degree due to its relatively exposed location.</p>	<p>The depot approach is likely to have little visual impact on residents on the eastern edge of New Crofton due to the presence of intervening tree cover.</p> <p>However residents on the southern edges of Crofton and New Crofton are likely to have some views of the depot, 300-400m away beyond the railway, on slightly lower ground, with some intervening tree cover. The level of impact is expected to be moderate, depending on the depot layout and the height of any tall structures.</p> <p>There would probably also be some views of the depot from Anglers Country Park (around 250m to the south with intervening woodland), resulting in a moderate impact on recreational users.</p>

	<p>Both the depot and approach would have a direct impact on a number of small woodlands and shelterbelts. The intervening land between the depot and the existing railway might offer scope for new replacement planting on the northern edge of the depot site.</p>	
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Havercroft to Methley Lanes (HSL17A/ HSL17B)		
<p>The route would pass between New Crofton and the Grade I Listed Nostell Priory in cutting at Horncastle Hill, and then run mainly on embankment up to 15m high. Further north, in the Sharlston Common area, there would be a 300m long, 19m high viaduct and long embankments up to 17m high. Around Kirkthorpe there would be a further series of embankments and a short viaduct up to 19m high.</p> <p>In the Newland Hall area west of Normanton, the route would cross a lake on viaduct 270m long and 22m high through a newly restored area of former mineral working. West of Altofts, the route would run in 18m deep cutting, then cross the River Calder on embankment and viaduct 1.9km long and up to 22m high. Towards the northern end of this viaduct there would be a grade separated junction with the Leeds spur (HSL21), which would rise to cross over the mainline.</p>	<p>This is an undulating landscape, significant parts of which have been subject to opencast mining and developed for housing and industry. The areas around Kirkthorpe and Warmfield have some remnant historic landscape features including ridge and furrow and older hedgerows. The flat floodplain of the Calder includes flashes, oxbows, wetlands and woodlands and is of notable recreation value, although locally influenced by railways and motorways.</p> <p>The cutting at Horncastle Hill, although only around 10m deep, would damage a distinctive hilltop with historic farm buildings. In the New Crofton area, where the depot connection branches off, the high embankment would affect landscape character, although landform and existing tree cover should ensure that the route is fairly well screened from Nostell Priory (Registered Park and Garden Grade II*). In the Sharlston Common and Kirkthorpe areas the viaducts and embankments are likely to cause moderate landscape intrusion due to mismatch with the underlying landform.</p> <p>Near Newland Hall, including the associated Grade II Listed Buildings and Scheduled Monument, the new viaduct and embankments would adversely affect the character and quality of the recreational landscape. Landscape connections and walking routes from Normanton and Altofts to the river would be disrupted by these features and by the deep and widely visible cutting to the north. The very long, high crossing of the Aire and Calder Navigation and the River Calder would bisect a relatively undeveloped section of the valley that is characterised by meanders and riparian woodlands, and there would be direct impacts on several of these woodlands. Major landscape impacts are expected in these areas, also influenced by the grade separated junction with the Leeds spur which would be seen rising up to the north of the river.</p>	<p>The embanked route near New Crofton should have little visual impact on residents of New Crofton due to intervening woodland. However some residents at Windmill Hill and Foulby to the east would have views of a 15m high embankment from 300-600m, a moderate impact. Similar impacts may also affect small numbers of residents near Sharlston Common and Kirkthorpe.</p> <p>In the Newland Hall area a major visual impact on recreational users of the area's many public footpaths is expected, with significant visual intrusion arising from the route's high level crossing of the lake.</p> <p>In the Calder valley, there are likely to be significant impacts as river and canalside recreational areas around Bottom Boat and Lower Altofts would have views of the new embankment and viaduct together with the M62. Although the valley is very broad at this point, the height and length of the viaduct and cumulative effects with the M62 and the HS2 grade separated junction to the north mean that moderate or locally major effects on sensitive recreational receptors, including users of Aire and Calder Navigation and Trans Pennine Trail, are likely.</p>

Major adverse (--)	Major adverse (--)	Major adverse (--)
Methley Lanes to Garforth (HSL17B)		
<p>At Methley Lanes the mainline route north would continue on viaduct over the M62 then run onto embankment up to 14m high and into shallow cutting through land between the confluence of the Rivers Calder and Aire. North of Methley Park it would emerge again onto embankment and 2.2km long viaduct over the River Aire and floodplain, passing between the eastern edge of Woodlesford and a sewage works and oil storage depot. The viaduct would generally be around 20m high but locally, north of the river, up to 29m high.</p> <p>At Swillington the route would run on low embankment west of the village and into cutting north and east past Garforth. Here the route would initially parallel the M1 in cutting up to 13m deep, then pass onto 16m high embankment near Swillington Common and over the A63, then run again into cutting up to 20m deep near the Grade II Listed Barrowby Hall. Passing north of Garforth, the line would be close to grade next the motorway.</p>	<p>North of Methley Lanes is a rolling, large scale, wooded farmland landscape. The wooded corridor of the Aire valley includes industrial uses such as the sewage works and oil storage depot as well as extensive areas of restored mineral workings and remnant parkland. Its appearance today is generally attractive, with diverse features including oxbow lakes and riparian woodland. North of the Aire is a landscape mainly of small arable fields and pastures, with urban fringe pressures in evidence, but also with pockets of unspoilt parkland and woodland, such as in the Barrowby area.</p> <p>Where the route runs through the Methley Park estate north of the M62, the new embankment would intrude on the landscape locally and there would be some woodland loss cumulative with the Leeds spur, resulting in a moderate adverse impact on landscape character.</p> <p>At the crossing of the River Aire, the long, high viaduct structure would have a direct impact on several areas of riparian woodland and lakes and a moderate to major impact on landscape character. The impact would be major were it not for the presence of extensive existing tree cover in the surrounding area.</p> <p>At Swillington the embanked route would have a moderate impact the character of the small river valley to the west of the village. Further north the high embankment near Swillington Common and the deep cutting near the Grade II Listed Barrowby Hall would fragment attractive farmland and woodland with a further moderate impact on landscape character and affect the setting of listed Barrowby Hall.</p>	<p>In the vicinity of Hungate Lane, users of the Leeds Country Way would be affected by visual intrusion by high embankment.</p> <p>The viaduct crossing of the River Aire, due to its height, would have localised moderate or major visual impacts on users of the Trans Pennine Trail, the Leeds Country Way, the Aire and Calder Navigation and the fishing lakes at Swillington Park. One of the most sensitive locations on the Navigation, Lemonroyd Marina, would be bypassed. Visibility would often be contained by trees.</p> <p>A small number of residential receptors in the Yew Tree Drive area on the eastern outskirts of Woodlesford, 250-350m from the route, would have views of the viaduct, seen partly through trees, a moderate to major impact.</p> <p>Further north, visual impacts would generally be moderate. Residents on the western edge of Swillington would have some views of the route in the valley below. A small number of residents at Swillington Common on the A63 would experience visual intrusion from the embanked route close by. At Barrowby Lane, the route in cutting and on embankment to the south-west would adversely affect the southerly views of walkers on the Leeds Country Way.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Garforth to Church Fenton (HSL17B)		
<p>Running east from near Garforth, this route section would mainly be in shallow cutting (less than 10m deep) or near grade, closely paralleling the south side of the M1, then passing under the A1(M) and across open countryside to</p>	<p>This relatively flat landscape is characterised by medium to large regular fields of arable farmland, with few hedgerow trees or woodland, long uninterrupted views, and sparse settlement. Just east of the A1(M) the Magnesian limestone escarpment provides more varied landform and a more</p>	<p>The first part of the route section is expected to have minor visual impacts as it is mainly in cutting. Any short embanked sections are generally in isolated areas and/or enclosed by woodland. There would be a minor visual</p>

<p>join an existing railway near Barkston Ash. The route would cross the Stream Dike valley near Barkston Ash on 16m high viaduct and embankment.</p> <p>From Barkston Ash to Church Fenton the route would initially be on embankment up to 11m high parallel to an existing embanked railway. It would then diverge northwards on 5m high embankment across Barkston Moor to bypass the village of Church Fenton on a 2.2km long viaduct. The viaduct would commence at Common Lane, rising gradually from 5m high (west of Church Fenton) to 13m high (north of Church Fenton) where it would cross the East Coast Mainline (ECML) and descend onto embankment on the east side of the ECML.</p>	<p>wooded character associated with country estates. Towards Church Fenton the flat, low-lying landscape has a patchwork of arable fields. It is large scale and open, with rectilinear fields often enclosed by dykes or ditches and a general absence of hedgerows. Transport infrastructure, including both railways and a military airfield, is an existing influence.</p> <p>The first part of the route would have relatively minor or moderate impacts on landscape character, the principal changes being woodland loss in two locations and embankments around Barkston Ash. The new embankments would be seen in the context of a nearby landfill site and the existing embanked railway.</p> <p>Around Church Fenton the main landscape change would be the introduction of the lengthy new viaduct. This would alter the flat, open levels character of the landscape west and north of Church Fenton and have a direct impact on an attractive area of woodland and wetland near Sandwath Farm. The setting of the village is already affected by several railway lines but none is on viaduct. In this large scale landscape the effect on character is considered moderate.</p>	<p>impact, affecting southbound motorists only, from the embankment over Stream Dike.</p> <p>Visual impacts at Barkston Ash should be minor or moderate, affecting residents on the south-east side of the village, around 300m from the route. The route would be seen against the backdrop of the existing railway.</p> <p>At Church Fenton, the open landscape is of high visual sensitivity. The route would be well away from the village centre, which would be little affected. However there would be visual impacts on the north-western outskirts of the village, where residents on north side of Sandwath Drive would have views of the HS2 line on 8-10m high viaduct from 100-200m with some intervening tree cover. This is considered a moderate impact.</p>
<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>	<p>Moderate adverse (-)</p>

Methley Lanes to Hunslet (HSL21/ HSL22)		
<p>At Methley Lanes the Leeds spur would rise onto embankment up to around 18m high north of the M62, then veer north-west and cross the HS2 mainline on a short viaduct. It would run into 17m deep cutting through woodland east of Clumpcliffe and onto a 9m high embankment, crossing over the A639 and then Oulton Beck on a short viaduct. Close to the eastern outskirts of Oulton the route would enter deep cutting and bored tunnel under Woodlesford.</p> <p>North-west of Woodlesford the line would emerge from tunnel and cut and cover tunnel to run at grade along an existing rail corridor north of Rothwell Country Park. It would continue west initially at grade, passing under the M1, then in cutting and retained structure through industrial areas at Stourton and along the existing rail corridor to Hunslet.</p>	<p>North of Methley Lanes is a rolling, large scale, wooded farmland landscape, with unregistered parkland, areas of former opencast workings, and arable farmland. Further north and west the River Aire corridor near Woodlesford is part of Rothwell Country Park (restored mineral workings). To the west, towards Hunslet, industrial land uses predominate.</p> <p>The high embankments of the grade-separated junction just north of the M62 would intrude locally on the landscape around Hungate. There would be a direct impact on several areas of woodland around Methley Park (cumulative with the mainline, just to the east). However the surrounding larger blocks of woodland would help to contain the wider landscape character effect of the deep cutting here. On the eastern outskirts of Oulton the tunnel approach and portal would again result in some woodland loss and change in landscape character, but this would not be widely visible due to the area's existing wooded character. These impacts would be moderate.</p> <p>West of Woodlesford, where the line would emerge from tunnel and follow the existing rail corridor through to Hunslet, any landscape character impact would generally be limited to some loss of existing lineside tree cover.</p>	<p>In the vicinity of Hungate, users of the Leeds Country Way would be affected by visual intrusion by high embankment.</p> <p>Motorists and users of footpaths (including the Trans Pennine Way) east of Oulton would experience localised, mainly minor visual impacts from views of embankment and parts of the tunnel portal. However there should be little visual impact on residents of Woodlesford or Oulton Conservation Area.</p> <p>West of Woodlesford there is likely to be a moderate effect on some views from the nearby Aire and Calder Navigation and Trans Pennine Trail, but this will depend on extent of tree loss in the area between the rail and river corridors. Rothwell Country Park may also be affected by any realignment of the existing railway on its northern edge.</p>
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)
Hunslet to Leeds station (HSL31)		
<p>The route would approach Leeds station in retained cutting along the north-eastern edge of an existing railway. It would then rise onto 750m long viaduct up to 13m high, passing mainly through an industrial area on the southern approach to the station.</p> <p>The station would be a large structure approximately 65m wide and 15m deep spanning the River Aire. The new station roof would be around 23m above existing ground levels. The concourse to the north-west would be shared with the existing Leeds Central station. A new multi-storey car park would adjoin the station to the south-west.</p>	<p>This section would pass almost entirely through built up, mainly commercial, areas south of Leeds city centre. The station approach would result in minor loss of informal open space just west of Kidacre Street; while the viaduct and elevated platforms would bring moderate disruption to existing street patterns and movement.</p> <p>The station itself would span the attractive, historic Aire riverside immediately to the east of Canal Wharf Conservation Area and Victoria Bridge (listed Grade II). The large new structure would have major impacts on the townscape character of the riverside and the settings of Canal Wharf Conservation Area and Victoria Bridge. It</p>	<p>The station approach would have localised visual impacts associated with lineside tree removal, but any impact on residential areas seems unlikely to be significant.</p> <p>There would be some visual intrusion at the southern end of the station due to the elevated platforms and viaduct.</p> <p>Further north, the sheer height and mass of station structure would dominate Aire riverside and block many views along river in both directions, causing major visual intrusion. The long station structure would also cause marked east-west visual severance in the Neville Street area.</p>

	<p>would overshadow large areas of riverside on both banks and part of Neville Street to the north – although pedestrian connectivity beneath would be retained. The station car park is not expected to be intrusive as it is unlikely to be taller than the station structures.</p> <p>While there may be opportunities for townscape enhancement as part of station development and re-development of surrounding areas, the scale and location of the station structures are such that the residual impact on the townscape character is nonetheless expected to be major adverse.</p>	
Moderate adverse (-)	Moderate adverse (-)	Moderate adverse (-)



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