

High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Volume 5: Appendix CT-006-00000

Wider effects report

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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1 Introduction

1.1 Overview

- 1.1.1 This report forms part of the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES). It sets out the wider effects that are likely to result from the SES2 design changes and AP2 amendments.
- 1.1.2 In the High Speed Rail (Crewe – Manchester) Environmental Statement (ES) published in January 2022 (the main ES)¹, the wider effects of the original scheme (that is the Bill scheme submitted to Parliament in January 2022) were reported (see Wider effects report, Volume 5, Appendix: CT-006-00000 of the main ES²). In addition, wider effects were also reported as part of the Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement (SES1 and AP1 ES)³ which was submitted to Parliament in July 2022 (see Wider effects report, SES1 and AP1 ES Volume 5, Appendix: CT-001-00006)⁴.
- 1.1.3 This report should be read in conjunction with the Wider effects reports which were submitted as part of the main ES and SES1 and AP1 ES^{2,4}. It should also be read in conjunction with the SES2 and AP2 ES Volume 2, Community Area reports and Map Books, and the Volume 2, Community Area reports and Map Books of the main ES and the SES1 and AP1 ES.
- 1.1.4 In order to differentiate between the original scheme and the subsequent changes, the following terms are used in the SES2 and AP2 ES:
- ‘the original scheme’ – the Bill scheme submitted to Parliament in 2022, which was assessed in the main ES;
 - ‘the SES1 scheme’ – the original scheme with any changes described in SES1 that are within the existing powers of the Bill;

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Wider effects report*, Volume 5, Appendix: CT-006-00000. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

³ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

⁴ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Wider effects report*, Volume 5, Appendix: CT-006-00000. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

- ‘the AP1 revised scheme’ – the original scheme as amended by SES1 changes and AP1 amendments;
- ‘the SES2 scheme’ – the original scheme with any changes described in SES1 (submitted in July 2022) and the SES2; and
- ‘the AP2 revised scheme’ – the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments.

- 1.1.5 Wider effects refer to any changes to the likely significant effects, reported in the SES2 and AP2 ES, that may result if the scheme as built deviates from the centre line of the works within the limits of deviation, as permitted under parliamentary powers. The SES2 and AP2 ES contains mapping, within the Volume 2 and 5 Map Books, which show the HS2 route on the centre line for the permanent works.
- 1.1.6 The limits of deviation shown on the Parliamentary plans and sections, as amended by the SES2 design changes and AP2 amendments and described in the Bill, enable the AP2 revised scheme to deviate slightly from the centre line of the works as may be required for reasons of engineering practicability following detailed design.
- 1.1.7 A summary of the extent of the limits of deviation is described in Volume 1, Section 1 of the main ES. In essence these comprise lateral limits within the lines shown on the Parliamentary plans and vertical limits, as amended by the AP2 amendments. The vertical limits cannot exceed 3m upwards, but can extend downwards to any extent, from the levels shown on the deposited section. This does not apply to certain buildings, such as stations, depots and shafts, where an upper height limit is specified. The limits of deviation for tunnels allow them to deviate so that an appropriate clearance from any unexpected obstruction in the ground can be provided.
- 1.1.8 The degree of adjustment is constrained, not only by the limits of deviation, but also by key design elements of the AP2 revised scheme. These include the alignment of the track system, which must allow for high-speed trains to operate to the proposed timetable, the position of tunnel portals, the height of viaducts and the location of significant third-party infrastructure.
- 1.1.9 This report sets out the assessment of whether the power to deviate within these statutory limits would alter the significant predicted effects reported elsewhere in the SES2 and AP2 ES by creating new or different significant effects.

1.2 Analysis and assessment

- 1.2.1 A sensitivity analysis has been undertaken for each of the SES2 design changes and AP2 amendments, which are described in the SES2 and AP2 ES Volume 2, Community Area reports and shown in the SES2 and AP2 ES Volume 2, Map Books. This analysis was to identify where such spatial changes are feasible and to assess their environmental implications. The assessment has taken into account the likely significant effects and the environmental baseline described for the AP2 revised scheme (which includes all SES2

changes and AP2 amendments) in the SES2 and AP2 ES Volume 2, Community Area reports.

- 1.2.2 Where information may be incomplete, this assessment has been based on a precautionary approach using worst-case assumptions, which is consistent with that adopted for the overall environmental impact assessment (EIA).
- 1.2.3 The sensitivity analysis has identified potential new and/or different likely significant effects, as described in this report, in the following community areas:
- Hulseheath to Manchester Airport (MA06):
 - Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014); and
 - Additional land permanently required for the extension of Metrolink provisions at Manchester Airport High Speed station (AP2-006-022).
 - Davenport Green to Ardwick (MA07):
 - Change to Bill powers required for relocation of vent shaft and headhouse from Palatine Road to The Hollies (AP2-007-003);
 - Change in Bill powers required for the modifications to the Wilmslow Road vent shaft (AP2-007-004); and
 - Change in Bill powers required for the modifications to the Birchfields Road vent shaft (AP2-007-005).
- 1.2.4 Locations where amendments within the statutory limits of deviation are assessed as unlikely to give rise to new or different predicted significant effects are not considered further in this report.
- 1.2.5 The changes to the predicted effects in this report have considered residual effects only (i.e. allowing for the adoption of mitigation). In the event that variations to the alignment occur within the statutory limits, references have been made where appropriate to further potential mitigation that could be considered in specific locations. Such mitigation could only be confirmed following further assessment and discussion with relevant stakeholders as part of the detailed design process for any alignment modifications.

1.3 Environmental Minimum Requirements

- 1.3.1 In order to ensure that the environmental effects of the scheme will not exceed those set out in the ES documents, the Secretary of State for Transport will establish a set of controls known as Environmental Minimum Requirements (EMR). The EMR will be contained in a set of documents that sit alongside the provisions set out in the Bill itself. The body to be appointed to take forward the detailed design and implementation of the scheme after the Bill has been enacted, is known as the nominated undertaker. The

nominated undertaker will be required to comply with the EMR and the other Bill controls.

- 1.3.2 During the passage of the Bill through Parliament, the Secretary of State will confirm to Parliament the scope of, and the documents forming, the EMR; and will make a commitment to Parliament to take whatever steps are considered reasonable and necessary to secure compliance with them.
- 1.3.3 The EMR, together with the controls in the Bill, will ensure that the impacts identified in the ES documents (including the main ES; the SES1 and AP2 ES; and the SES2 and AP2 ES) will not be exceeded, except where:
- this results from a change in circumstances that was not likely at the time the ES documents were prepared; or
 - any such changes will be unlikely to have significant adverse environmental effects; or
 - any such changes will be subject to a separate consent process and further EIA; or
 - any such change to the project does not itself require EIA.
- 1.3.4 The EMR will also impose a general requirement on the nominated undertaker to use reasonable endeavours to adopt measures to reduce the reported adverse environmental effects, provided that this does not add unreasonable cost or delay to the construction or operation of the scheme.

1.4 Operational sound, noise and vibration

Surface sections

- 1.4.1 To avoid or reduce significant airborne noise effects during operation, the AP2 revised scheme incorporates noise barriers in the form of landscape earthworks and/or noise fence barriers. Noise barrier locations are shown in the main ES Map Books, SES1 and AP1 ES and in the SES2 and AP2 ES Volume 5, Noise and vibration Map Books: Map Series SV-08 - Daytime Operational Sound Contour Maps. These maps also identify engineering cuttings and retaining walls as noise barriers where they will avoid or reduce significant adverse noise effects.
- 1.4.2 The effective height of the noise barriers is described relative to the rail level. Therefore, any amendment to the vertical rail level will move the noise barrier by an equivalent amount, so that the extent of noise reduction is maintained.
- 1.4.3 The maps also identify other earthworks which may reduce noise effects but do not materially affect the outcomes of the sound, noise and vibration assessment. Removal or amendment of these features, or reducing their attenuation by raising the vertical alignment, would not materially alter the assessment of sound, noise and vibration reported elsewhere in the main ES, the SES1 and AP1 ES or the SES2 and AP2 ES.

- 1.4.4 There are locations where existing features such as hills, roads and railways will provide a degree of attenuation to operational noise levels. If the alignment were to be raised vertically in these locations, this attenuation could be reduced, potentially resulting in new or different adverse likely significant noise effects.
- 1.4.5 Following any change in alignment within the limits of deviation, further detailed modelling would be undertaken to confirm the predicted noise effects described in this report. If significant effects are confirmed, suitable mitigation, such as noise barriers, would be provided within the limits of deviation. With this mitigation in place, no additional residual significant noise effects are considered to be likely. The introduction of new noise barriers may require additional visual mitigation in the form of earthworks, planting or external finish.

Tunnelled sections

- 1.4.6 Following any change in alignment within the limits of deviation, detailed modelling would be undertaken to confirm the ground-borne noise effects. If any significant effects are confirmed, all reasonably practicable steps will be taken to mitigate them.

2 Assessment of likely significant effects

2.1 Introduction

- 2.1.1 This section assesses the potential for the creation of new or different likely significant effects, or the removal of such effects, at specific locations along the route of the scheme where changes have been introduced as part of the SES2 and AP2 ES. The following AP2 amendments have the potential to give rise to new or different significant effects if the works are moved within their limits of deviation:
- Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014);
 - Additional land permanently required for the extension of Metrolink provisions at Manchester Airport High Speed station (AP2-006-022);
 - Change to Bill powers required for relocation of vent shaft and headhouse from Palatine Road to The Hollies (AP2-007-003);
 - Change in Bill powers required for the modifications to the Wilmslow Road vent shaft (AP2-007-004); and
 - Change in Bill powers required for the modifications to the Birchfields Road vent shaft (AP2-007-005).
- 2.1.2 The effects reported in the main ES and the SES1 and AP1 ES Wider effects reports (see Volume 5, Appendix: CT-006-00000 of each) remain applicable for all community areas, unless explicitly superseded in this section.
- 2.1.3 The following sections describe the new or different significant effects that could arise within relevant community areas. The assessment has generally followed the structure below:
- the title of the AP2 amendment;
 - the changes to the scheme proposed by the AP2 amendment;
 - an overview of the significant effects assessed at this location in the main ES and SES2 and AP2 ES, Volume 2, Community Area reports;
 - the potential for movement within the limits of deviation associated with the AP2 amendment;
 - a description of any new or different significant effects generated by any such movement; and
 - a description of any potential mitigation options and their efficacy.

2.2 Hulseheath to Manchester Airport (MA06)

Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)

- 2.2.1 The route of the original scheme would be located close to the M56 but, with the exception of realignment works to the slip roads at junction 6, there would be no permanent impact on the layout of the motorway itself. In the AP2 revised scheme, the M56 has been realigned by up to 30m to the south of its current alignment. Junction 6 will be reconfigured, with the introduction of a new grade-separated six-arm gyratory located 600m to the south-west of the existing junction 6. Related works will include the introduction of a direct, grade-separated link to the Manchester Airport High Speed Station, a direct link to the A538 Wilmslow Road and the A538 Hale Road and the construction of overbridges to accommodate the reconfigured junction. These changes have been made in response to engagement with National Highways and to issues raised by local Greater Manchester stakeholders. The design of the M56 Junction 6 has been revised to improve forecast traffic flows associated with the Manchester Airport High Speed station.
- 2.2.2 Variations to the reconfigured M56 Junction 6 within the limits of deviation have the potential to change the significant effects reported for landscape and visual and operational traffic noise.
- 2.2.3 As described in the main ES Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06), the visual effects on most receptors in the vicinity of M56 Junction 6 were considered to be major adverse in year 1 and moderate adverse in year 15 (both significant), reducing to non-significant by year 30 as a result of maturing mitigation planting. For the viewpoint east from the A538 Hale Road (VP 332-02-006) visual effects would remain major adverse (significant) in years 1, 15 and 30.
- 2.2.4 The SES2 and AP2 ES Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06) states that the amendment introduced as part of the AP2 revised scheme has the potential to significantly affect 12 viewpoints, of which six are new viewpoint locations that will be affected by the AP2 revised scheme. Of those viewpoints, four will experience different operational significant effects after implementation of mitigation:
- viewpoint west by Yew Tree House on Sunbank Lane (VP 332-02-003);
 - viewpoint east from Burnside Warburton Green (VP 332-02-005);
 - viewpoint east from the A538 Hale Road (VP 332-02-006); and
 - viewpoint south-east from Brooks Drive (VP 332-02-008).
- 2.2.5 New significant effects, after the implementation of proposed mitigation planting, have been identified at a further three viewpoints:

- viewpoint south from Footpath Hale 10 (VP 331-03-014);
 - viewpoint north-east from Footpath Hale 10 (VP 331-03-014); and
 - viewpoint south from Chapel Lane, day-time and night-time (VP 332-02-009).
- 2.2.6 There are no new or different residual significant effects from operational noise or vibration as a result of the amendment as stated in the SES2 and AP2 ES Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06).
- 2.2.7 There is scope to move the horizontal alignment of parts of M56 Junction 6 to the north-west within the limits of deviation by a further 45m and to raise the vertical alignment by up to 3m.
- 2.2.8 This combined horizontal and vertical change to M56 Junction 6 would result in an increase in adverse effects for the following viewpoints to the west of the AP2 revised scheme:
- viewpoint south from Chapel Lane, daytime and night-time (VP 332-02-009);
 - viewpoint south-east from Bankside (VP 332-02-010);
 - viewpoint east from Burnside Warburton Green (VP 332-02-005); and
 - viewpoint east from the A538 Hale Road (VP 332-02-006).
- 2.2.9 These viewpoints represent residents on the edge of Warburton Green, users of Footpaths Hale 12 and 13 and Footpath Ringway 9, and residents on the A538 Hale Road. Existing moderate significant effects would change to major at viewpoint south from Chapel Lane (VP 332-02-009) and viewpoint east from the A538 Hale Road (VP 332-02-006), and new significant effects would be created, in year 15 and year 30 for the viewpoint south-east of Bankside (VP 332-02-010) and year 30 for viewpoint east from Burnside (VP 332-02-005).
- 2.2.10 A combined horizontal westward and vertical increase to M56 Junction 6 would also result in changes to operational noise impacts associated with motorway vehicle movements for residential receptors on the east edge of Warburton Green. Further detailed noise modelling would be undertaken to confirm if the design changes would change the operational noise impacts.
- 2.2.11 Mitigation measures to provide landscape and visual screening have been included as part of the AP2 revised scheme, including the provision of landscape earthworks and mitigation planting. A horizontal change to M56 Junction 6 west would reduce the space available for mitigation. An increase in the vertical alignment of M56 Junction 6 and a reduction in its distance from visual receptors would increase the time it would take for mitigation planting to mature sufficiently to provide a screening benefit and may reduce its overall efficacy. This would result in new and/or potentially different significant effects in year 15 and year 30 for visual receptors in Warburton Green and Hale Road.
- 2.2.12 In the event of any proposed variation to the highway alignment, further detailed noise modelling would be undertaken to confirm whether new significant effects are likely to

occur. HS2 Ltd would seek reasonably practicable measures to reduce or avoid any new or increased significant adverse effects. If such mitigation is not available, affected landowners would be entitled to make a claim in line with the compensation code.

Additional land permanently required for the extension of Metrolink provisions at Manchester Airport High Speed station (AP2-006-022)

- 2.2.13 The route of the original scheme includes a section of viaduct 216m long and 15m above existing ground level to enable future provision of a Metrolink station. East and west approaches to the viaduct were not included in the original scheme Bill design. The AP2 revised scheme will include a 330m section of retaining wall with a turnback facility, Thorley Lane west approach viaduct (320m in length), Metrolink Station approach bridge west (60m in length), Metrolink station viaduct (130m in length), Metrolink station approach east bridge (30m in length), M56 viaduct (140m in length), Thorley Lane East approach viaduct (170m in length) and Thorley Lane east approach retaining wall (127m in length).
- 2.2.14 Variations to the extended Metrolink provisions within the limits of deviation at this location have the potential to change the significant effects reported for landscape and visual.
- 2.2.15 As described in the main ES Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06), local visual receptors in this location, as represented by viewpoints east from Davenport Green Hall on Brooks Drive (VP 333-02-001), and south from Davenport Green (VP 333-03-009,) will experience a moderate adverse visual effect (significant) in year 1 of operation. Visual effects will reduce to non-significant in year 15 and 30 as a result of maturing mitigation planting.
- 2.2.16 The SES2 and AP2 ES Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06) states that new significant visual effects will occur in year one for viewpoint south-east from Footpath Hale 26 (VP 333-02-003), and for a new viewpoint north-west from Keepers Cottage, Runger Lane (VP 333-02-012). New significant effects will occur in years 15 and 30 for viewpoint east from Davenport Green Hall on Brooks Drive (VP 333-02-001), and in year 15 for viewpoint south-east from Footpath Hale 26 (VP 333-02-003) and viewpoint north-west from Keepers Cottage, Runger Lane (VP 333-02-012).
- 2.2.17 There is scope to raise the vertical alignment of the Metrolink station viaduct approaches within the limits of deviation by a further 3m in this area. The limits of deviation in this section restrict the potential for any substantial horizontal movement of the Metrolink alignment.

- 2.2.18 An increase in the vertical alignment of the Metrolink station viaduct approaches by up to 3m would result in an increase in adverse effects for viewpoints to the east and west of the AP2 revised scheme at this location, representing residents in Davenport Green, users of Footpaths Hale 23 and 26, residents at Keepers Cottage, and users of the National Cycle Network Route 85 and Manchester Airport Orbital Cycleway. Existing moderate significant effects would increase to major in year 1 for VP 333-02-003 and VP 333-03-009, in year 15 for viewpoints VP 333-02-001, VP 333-02-003 and VP 333-02-012 and in year 30 for VP 333-02-001. New significant effects would be created in year 15 for viewpoint VP 333-03-009 and in year 30 for viewpoints VP 333-02-003, VP 333-03-009 and VP 333-02-012.
- 2.2.19 Mitigation measures to provide landscape and visual screening have been included as part of the AP2 revised scheme, including the provision of landscape mitigation planting on both sides of the east and west approaches to the Metrolink station viaduct. An increase in the vertical alignment of the Metrolink station viaduct approaches would reduce the space available for mitigation as the footprint of the embankments would widen, increasing the time it would take for mitigation planting to mature sufficiently to provide screening, potentially reducing its overall efficacy. This would result in new operational adverse significant visual effects in year 15 and year 30 to the east and west of the AP2 revised scheme at this location.

2.3 Davenport Green to Ardwick (MA07)

Change to Bill powers required for relocation of vent shaft and headhouse from Palatine Road to The Hollies (AP2-007-003)

- 2.3.1 Since the main ES, design development has identified the need to relocate the Palatine Road vent shaft from the Withington Golf Club, off Palatine Road, to the disused playing fields to the north-west of the Britannia Country House Hotel. Due to this relocation, the vent shaft has been renamed The Hollies vent shaft.
- 2.3.2 A horizontal change to the headhouse position within the limits of deviation at this location has the potential to change the significant effects reported for both landscape and visual and water resources and flood risk.
- 2.3.3 As described in the SES2 and AP2 ES, Volume 2, Community Area report: Davenport Green to Ardwick (MA07), the visual effects of the AP2 revised scheme in this location will comprise a mix of major adverse (significant), moderate adverse (significant) and non-significant during construction and operation year 1, reducing to non-significant for all receptors by operation year 15. If the location of the headhouse were to be moved horizontally, this would affect areas of proposed planting that have been designed to mitigate the visibility of the scheme for residential and recreational receptors during

construction and operation. Whilst there would be no new significant effects reported during construction, the magnitude of visual impacts would increase for receptors brought closer to the structure by any location change. New significant visual effects would be generated in year 15 and year 30, depending on the distance of any horizontal shift and the amount of mitigation screening that could be provided.

- 2.3.4 Mitigation measures to provide landscape and visual screening have been included as part of the scheme, including the provision of landscape mitigation planting around the vent shaft site. A horizontal change in the headhouse position would reduce the space available for mitigation and may reduce its overall efficacy. This would result in new operational adverse visual significant effects in year 15 and year 30, although the viewpoints affected would vary depending upon the direction of repositioning.
- 2.3.5 The vent shaft will be located in flood zone 2 and 3 of the River Mersey and has the potential to increase flood risk by displacing flood water. The hydraulic modelling of the River Mersey has indicated that the location of the vent shaft is sensitive as flood flows need to be safely managed around the raised compound to minimise local changes in flood flow routing. Any change in location would be hydraulically modelled to assess flow routing around the site which could lead to new or different effects in the immediate vicinity. Location changes may also alter the quantity of floodplain storage loss on the site and this has the potential to lead to new or different significant effects across the wider floodplain.

Change in Bill powers required for the modifications to the Wilmslow Road vent shaft (AP2-007-004)

- 2.3.6 In the AP2 revised scheme the Wilmslow Road vent shaft headhouse is increased in height from 7.3m to 12.7m. This increase in height by 5.4m is to accommodate a redesign of the tunnel ventilation system and the addition of a parapet around the roof of the structure.
- 2.3.7 Variations to the position and/or height of the headhouse within the limits of deviation at this location have the potential to change the significant effects reported for landscape and visual.
- 2.3.8 As described in the main ES Volume 2 Community Area report: Davenport Green to Ardwick (MA07), the visual effects of the original scheme in this location will in general be moderate adverse (significant) during construction for receptors closest to the site. Operational visual effects for these receptors will be moderate adverse in year 1, reducing to non-significant in year 15.
- 2.3.9 The SES2 and AP2 ES Volume 2 Community Area report: Davenport Green to Ardwick (MA07) states that significant moderate adverse operational visual effects would be

introduced in year 15 and year 30 at viewpoint VP 336-02-011 (view west from Lynway Drive) and viewpoint VP 336-02-012 (view south-west from Parkville Road).

- 2.3.10 There is scope to move the headhouse horizontally in any direction within the limits of deviation at this location. There is also scope to raise the height of the headhouse building by up to 3m.
- 2.3.11 Raising the height of the headhouse by up to 3m, or moving it horizontally north, south, east or west within the limits of deviation in this location, would increase the prominence of the headhouse in local views. Different significant visual effects would be generated in year 1, year 15 and year 30 for viewpoints VP 336-02-011 and VP 336-02-012, depending on the distance of any horizontal shift and the amount of mitigation screening that could be provided.
- 2.3.12 Landscape mitigation planting is proposed on all sides of the headhouse to reduce its visibility and to integrate it into the landscape. It is likely that a combination of additional landscape planting and landscape earthworks would be required to mitigate the effects of raising the height of the headhouse by up to 3m, and to maintain the effectiveness of mitigation screening. If the height of the headhouse were to be raised, mitigation planting would take longer to provide screening. Should a horizontal change be made within the limits of deviation, it would reduce the space available for landscape mitigation planting around the headhouse. Consequently, increased significant effects would be introduced at operation year 15 and year 30 for receptors on the B5093 Wilmslow Road and Ferndene Road represented by VP 336-02-009 (view north-east from the B5093 Wilmslow Road).

Change in Bill powers required for the modifications to the Birchfields Road vent shaft (AP2-007-005)

- 2.3.13 In the AP2 revised scheme the Birchfield Road vent shaft headhouse is reduced in height from 7.75m to 5.8m compared to the original scheme. This reduction in height by 1.95m is to accommodate a redesign of the tunnel ventilation system. Landscape mitigation planting is increased from the design included in the main ES and provided on the north, south and west sides of the site. The vent shaft permanent compound area and perimeter security fence will be expanded from 0.4ha to 0.6ha.
- 2.3.14 Variations to the position and/or height of the headhouse within the limits of deviation at this location have the potential to change the significant effects reported for landscape and visual.
- 2.3.15 As described in the main ES Volume 2 Community Area report: Davenport Green to Ardwick (MA07), the visual effects of the original scheme in this location represented by viewpoint VP 337-02-001 (view east from Footpath Manchester 156 and the A34

Birchfields Road) and viewpoint VP 337-02-002 (view looking north-east from A34 Birchfields Road) will in general be moderate adverse (significant) or minor adverse (non-significant) during construction and operation year 1, reducing to non-significant by operation year 15.

- 2.3.16 The SES2 and AP2 ES Volume 2 Community Area (MA07) reports that no new or different significant landscape or visual effects have been identified compared to the main ES.
- 2.3.17 There is scope to move the headhouse horizontally in any direction within the limits of deviation at this location. There is also scope to raise the height of the headhouse building by up to 3m.
- 2.3.18 Raising the height of the headhouse by up to 3m, or moving it horizontally north, south or west within the limits of deviation in this location, would increase the prominence of the headhouse in local views. This would give rise to new significant visual effects for the relevant receptors in year 15 and year 30, primarily residential properties on A34 Birchfield Road, located adjacent to the site, and Birchfields Primary School, which adjoins the site to the north.
- 2.3.19 Landscape mitigation planting is proposed on all sides of the headhouse to reduce its visibility and to integrate it into the landscape. It is likely that a combination of additional landscape planting and landscape earthworks would be required to mitigate the effects of raising the height of the headhouse by up to 3m and to maintain the effectiveness of mitigation screening. If the height of the headhouse were to be raised, mitigation planting would take longer to provide screening. Should a horizontal change be made within the limits of deviation, it would reduce the space available for landscape mitigation planting around the headhouse. Consequently, new significant visual effects would be introduced during operation year 15 and year 30 for receptors adjacent to the site, as represented by the viewpoints identified above.

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