

**High Speed Rail: Consultation on the route from the
West Midlands to Manchester, Leeds and beyond**

Sustainability Statement

Appendix A - Equality Analysis

A report by Temple-ERM for HS2 Ltd



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1. INTRODUCTION

- 1.1.1. This report has been prepared to support the HS2 Phase Two Proposed Scheme for Consultation Sustainability Statement (the Sustainability Statement), a report which describes the extent to which the Government's proposed scheme for HS2 supports objectives for sustainable development. This document is a technical appendix which summarises the appraisal method for the Equality Analysis (EqA), informing the Sustainability Statement main report (Volume 1). The Sustainability Statement places emphasis on the key impacts only. This technical report summarises all the conclusions relating to the EqA.
- 1.1.2. The remainder of this report is structured as follows:
- Section 2 sets out the purpose of the EqA and the legal and policy framework in place. It describes the approach and methodology that was undertaken in the EqA process, including the relationship of the EqA with earlier sifting stages of the AoS, and summarises the limitations of the approach taken;
 - Section 3 provides a summary of the EqA findings and details of next steps;
 - Section 4 provides a bibliography of published research and other documents used to inform the EqA;
 - **Annex 1** provides details of locations of individual clusters of people with protected characteristics (PPCs);
 - **Annex 2** provides details of proportions of PPCs in station catchments; and
 - **Annex 3** sets out the issues and evidence relating to potential equality impacts, and the detailed analysis findings.

2. SCOPE AND METHOD

2.1. Purpose

- 2.1.1. The purpose of this analysis is to establish an initial view on the extent to which people with protected characteristics (PPCs), as defined by the Equality Act 2010, may be differentially affected (i.e. affected more than people without these characteristics) by the Government's proposed scheme for HS2 Phase Two (the proposed scheme). It identifies the extent to which the proposed scheme is likely to promote or inhibit equality of opportunity, either as a whole or at specific locations affected by a particular scheme element. The analysis is based on the Appraisal of Sustainability (AoS) work carried out to date, and its findings will feed into any further scheme refinement and inform the incorporation of mitigation measures. This will also form the basis for more detailed EqA analysis at a future design stage.
- 2.1.2. Although the requirement for EqA is normally triggered by the potential for significant differential adverse effects, there are some aspects of the proposed scheme that are likely to result in a beneficial effect on PPCs. Such effects have been highlighted in this EqA report where relevant.

2.2. What is an EqA?

- 2.2.1. EqA is a way of assessing the effects that a proposed policy, strategy or project is likely to have on PPCs (as defined in **Figure 1**). In addition to the PPCs protected by law, EqA can

be expanded to cover social inclusion issues such as effects on lone parent families and people living in areas affected by multiple aspects of deprivation.

- 2.2.2. Some equality issues are typically addressed as part of other required assessments, such as Sustainability Appraisal (SA) and Environmental Impact Assessment (EIAs). However, EqAs provide a more detailed look at the implications of proposals on diversity and equality for particular groups of PPCs.
- 2.2.3. An Equality Impact Assessment (EqIA) Screening study was undertaken for the AoS of HS2 Phase One scheme, and this analysis builds on that work.

2.3. Legal and policy framework

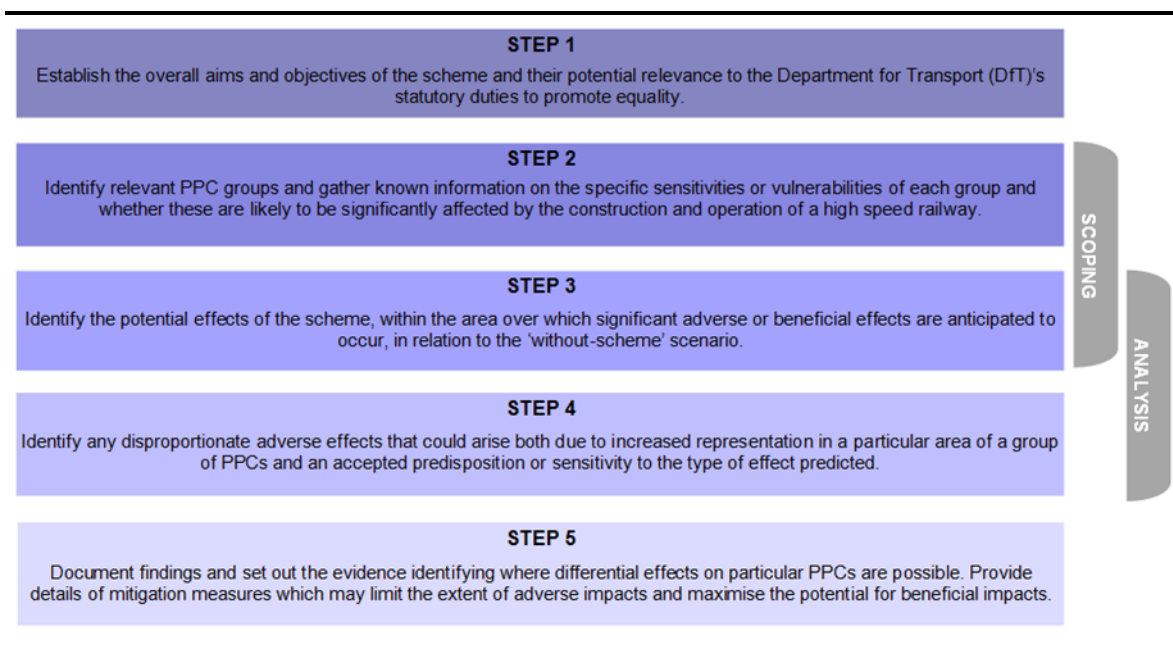
- 2.3.1. Since the methodology was developed for the EqIA Screening which supported the AoS of HS2 Phase One, the legal and policy framework has changed largely as a result of the Equality Act 2010 (the Act) coming into force. The Act brought together all previous equality legislation and introduced a new public sector equality duty replacing the separate duties relating to race, disability and gender equality. This came into force on 6th April 2011. This EqA is designed to address the range of equality issues including the public sector duty now required by the Act.
- 2.3.2. The Equality and Human Rights Commission has provided five guidance documents¹ on the equality duty which are helpful for this EqA. These are:
- The essential guide to the public sector equality duty;
 - Meeting the equality duty in policy and decision-making: A guide for public authorities;
 - Engagement and the equality duty: A guide for public authorities;
 - Equality objectives and the equality duty: A guide for public authorities; and
 - Equality information and the equality duty: A guide for public authorities.

¹ Available from <http://www.equalityhumanrights.com/advice-and-guidance/public-sector-equality-duty/guidance-on-the-equality-duty/>

- 2.3.3. Additional information sources used to inform the EqA are listed in Section 4 (bibliography).
- 2.3.4. The Act also introduced a change in terminology from Equality Impact Assessment to Equality Analysis [EqA] or, more specifically in the Act, ‘an analysis of the effects on equality’. The change in terminology is intended to focus more attention on the quality of the analysis and how it is used in decision-making, and less on the production of a report as an end in itself. Under the new equality duty, there is no requirement to follow a specific methodology or template to undertake an EqA. There is, however, a duty requiring public bodies to publish sufficient² information to demonstrate that they have complied with the general equality duty.

2.4. Overview of steps in the EqA

- 2.4.1. A review of the methodology used for the EqIA for HS2 Phase One Equality Impact Assessment: Screening Report has been undertaken in light of the changes brought in by the Act. Whilst the methodology remains sound, it has been developed and amended for this EqA on the basis of current understanding and research, data availability and the change in legal and policy context.
- 2.4.2. The main steps of the analysis remain consistent with those for the HS2 Phase One Screening:



² There is no clear guidance on what would be considered sufficient in this context.

2.4.3. Further details of each step are provided in the following sections.

2.5. Establishing the overall aims and objectives (Step 1)

2.5.1. In order to understand how the proposed scheme will potentially affect equality issues it is helpful to have a clear link between the aims and purpose of the proposed scheme and, therefore, some clear equality objectives.

2.5.2. HS2 Ltd's³ Sustainability Policy⁴ sets out its aims to support a number of Government goals, including to:

“Enable more equal distribution of opportunity, connect communities and encourage regeneration”.

The Policy sets out key themes which form the focus of HS2 Ltd's work and includes the commitment to:

“Promote diversity, openness and fairness”.

2.5.3. The Department for Transport (DfT) also sets out an equality objective within its 'Transport for Everyone' action plan.⁵

“To deliver better access to jobs and key services through an accessible and socially inclusive transport system, by removing the barriers to travel and ensuring that social impacts are addressed in policy development and service delivery”.

2.6. Identifying groups of PPCs (Step 2 - method)

2.6.1. The following page sets out the details of how groups of PPCs of relevance to the EqA were identified.

³ HS2 Ltd is the company responsible for developing and promoting the UK's new high speed rail network and is wholly owned by the Department for Transport.

⁴ HS2 Sustainability Policy, HS2 Ltd (2013)
http://assets.hs2.org.uk/sites/default/files/pdf/es_maps_docs/Sustainability%20Policy.pdf

⁵ Transport for Everyone: An Action Plan to Promote Equality, DfT (2012)
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/36211/equality-action-plan.pdf

The Equality Act 2010 ('The Act')

Sections 4-12 of the Equality Act 2010 define 'protected characteristics' within nine strands:

- age;
- disability;
- gender reassignment;
- marriage and civil partnership;
- pregnancy and maternity;
- race;
- religion or belief;
- sex; and
- sexual orientation.

Marriage and civil partnership has been scoped out of this analysis since this group is protected in terms of employment rights, which do not form part of the proposed scheme as assessed in the AoS or in this EqA.

The Equality Act requires public bodies to consider both direct and indirect effects on PPCs.

The guidance uses an umbrella term of 'policy' to cover practices, activities and decisions.

On 17 November 2010 the socio-economic duty contained in S1 of the Act was removed. S1 had stated that when making decisions of a strategic nature, due regard had to be given to the desirability of reducing inequality due to socio-economic disadvantage. Despite revocation of the socio-economic duty, information on socio-economic deprivation still provides useful information since PPCs tend to cluster in areas of socio-economic deprivation. Indices of Multiple Deprivation (IMD) have therefore been used to provide an indication of where socio-economic deprivation occurs and where, through finer grain analysis, relating to PPCs, from the 2011 Census and other data sets, potential equality effects are more likely to occur.

Another group which is not afforded specific protection by the Act is lone-parent families. This group forms an important subset of the sex category (both genders, although lone parents with dependent children are much more commonly female¹) and age category (children). The needs of people within lone-parent families are often exacerbated; in particular this group has much higher poverty rates than the UK average². Due to the particular needs of this group and since it doesn't fall within any of the single PPC categories listed above, lone-parent families are considered in this EqA as a separate PPC group.

Where groups are not identifiable through existing datasets (as indicated in below Table 2.1), effects are considered in the EqA in general terms rather than assessing spatial effects.

¹ In 2011, women accounted for 92% of lone parents with dependent children and men accounted for 8% of lone parents with dependent children in the UK (ONS, 2011).

² Poverty and Social Exclusion in Britain, JRF (2000) <http://www.jrf.org.uk/sites/files/jrf/185935128x.pdf>

Overview of EqA Scoping Stages

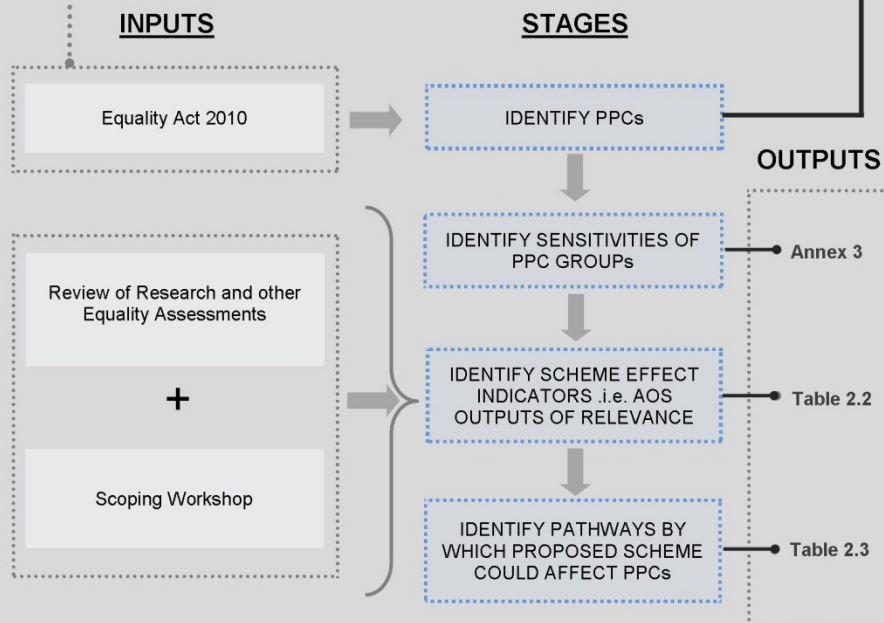


Table 2.1 Data Sources for Identifying PPC Distributions within the Study Area³

Equality Strand	Protected Characteristic	Data Source	Resolution
Age	Children and young people (0-15; 16-24)	Source: ONS (2011 Census Data)	Lower Layer Super Output Area
	Older people(65+) ⁴	Table: Age Structure, 2011 (KS102EW)	
Disability	People defined as disabled	Disability Living Allowance Source: ONS, Table: Benefits Data – Summary Statistics, 2010	Lower Layer Super Output Area
		Adults accessing mental health services Source: ONS, Table: Mental Health – Adults accessing NHS mental health services in England 2010/2011	Local Authority
		Employment and Support Allowance or Incapacity Benefit or Severe Disability Allowance Claimants (ESA)⁵ Source: ONS, Table: Benefits Data – Working Age Client Group November 2011	Lower Layer Super Output Area
Gender reassignment	Trans people	No useful spatial data available	N/A
Pregnancy and maternity	Pregnant women and nursing mothers	No useful spatial data available ⁶	N/A
Race	Black, Asian and Minority Ethnic (BAME) groups ⁷	Source: ONS (2011 Census Data), Table: Ethnic Group, 2011 (QS201EW)	Lower Layer Super Output Area
		Source: DCLG, Table: Count of Gypsy and Traveller caravans: July 2012 (Table 1)	Postcode Data
		Source: ONS, Table: Jobseeker's Allowance Claimants by Ethnicity, October 2010 - September 2011	Local Authority
	Refugees and Asylum seekers	No useful spatial data available relating to refugees and asylum seekers	
Faith (religion /belief)	Faith groups	Source: ONS (2011 Census Data), Table: Religion, 2011 (QS208EW)	Lower Layer Super Output Area
Gender (sex)	Women, men	Source: ONS (2011 Census Data), Table: Usual Residential Population, 2011 (KS101EW)	Lower Layer Super Output Area
Sexual Orientation	Lesbians, gays and bisexual people	Source: ONS (2011 Census Data), Table: Same Sex Couples, 2001 (UV93) NB: Dataset only relates to cohabiting couples	Lower Layer Super Output Area
Socio-economic Deprivation (additional indicator)	People living in the 20% most deprived areas	Source: ONS, Table: Indices of Deprivation 2010 for Super Output Areas	Lower Layer Super Output Area
	People living in social housing	Source: ONS (2011 Census Data), Table: Tenure, 2011 (KS402EW)	Lower Layer Super Output Area
Lone Parent families (additional indicator)	-	Source: ONS (2011 Census Data) Table: Household Composition 2011 (KS105EW) ⁸	Lower Layer Super Output Area

³ Data sources are publically-available national datasets which have been identified as being most useful in identifying the presence of PPCs and areas of socio-economic deprivation within a defined area. No regional or local datasets have been identified that are collected in a consistent manner across the whole of the study area. Census output is Crown copyright and is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland under Open Government Licence <http://www.nationalarchives.gov.uk/doc/open-government-licence/open-government-licence.htm>

⁴ Young people are commonly categorised in studies as dependent children aged 0-15 and those aged 16-24. The definition of older people varies much more between studies. DfT's Webtag guidance for social and distribution analysis defines older people as 70+, however census data is not available for the 70+ category; for this reason, and to align with the current UK average retirement age for men (ONS, 2012), older people are defined in this EqA as those over 65.

⁵ The indicator for ESA does not solely relate to unemployed people defined as disabled who are able to access employment, however is the best available national indicator for this group. It is used in this EqA to identify areas where people who are defined as disabled are not currently in employment, a proportion of these may be able to access certain types of jobs.

⁶ Research has shown that fertility trends within individual local authorities are wide ranging and can differ quite substantially from the trends of the region within which they are located (see <http://www.ons.gov.uk/ons/rel/population-trends-rd/population-trends-rd-133--autumn-2008-have-national-trends-in-fertility-between-1986-and-2008-occurred-evenly-across-england-and-wales-.pdf>). Current or recent birth rate statistics are therefore not considered a reliable indicator of future trends in pregnancy or maternity.

⁷ BAME groups are classified in accordance with the 2011 census categories, these being Gypsy/Traveller, Indian, Pakistani, Bangladeshi, Chinese, Other Asian, Black African, Black Caribbean, Other Black, Arab and mixed race people

⁸ Indicator: lone parents with dependent children

**Figure 1
Identifying Groups of PPCs (Step 2)**

2.7. Identifying potential impacts on PPCs (Step 3)

- 2.7.1. A scoping workshop was held in February 2013, attended by specialist assessors and representatives of HS2 Ltd, to agree the proposed data sources (as set out in **Table 2.1**) and review the key equality concerns of PPCs. The EqIA Screening Report produced as part of the AoS for HS2 Phase One formed the starting point for this review, with updates made on the basis of current understanding and research, data availability and the change in legal and policy context.
- 2.7.2. The key equality concerns identified for PPCs were then aligned with scheme impact indicators (measures of the extent to which the proposed scheme may beneficially or adversely affect each group of PPCs). Wherever possible, measurable indicators have been used. The range of impact indicators used in this EqA (set out in **Table 2.2**) is broadly similar to those assessed as part of the EqIA Screening Report produced as part of the AoS for HS2 Phase One.
- 2.7.3. **Table 2.3** identifies the key equality concerns⁶ that were identified during the scoping workshop as being of relevance to each group of PPCs, and the potential impacts on these groups which may arise as a result of the proposed scheme. A review of research relating to equality impacts, and further explanation of the nature of potential impacts (structured in terms of the different sustainability themes listed in Section 2.12) is set out within the detailed analysis tables in **Annex 3**.
- 2.7.4. This EqA assumes that all access routes crossed by the proposed scheme will be maintained. If any access routes are not reinstated or re-provided, or where access routes are severed on a temporary basis during construction, subsequent analysis of potential adverse effects on groups of PPCs would be required.⁷

Table 2.2 - Potential scheme impact indicators identified in the AoS

Potential Scheme Impacts (measurable indicators)	Scheme Element - Stations/ Line of Route (LoR)
Estimated number of new dwellings supported around stations	Stations
Number of dwellings demolished	Stations and LoR
Direct effects on existing Gypsy and Traveller caravan sites	Stations and LoR
Number of dwellings at high risk of isolation/severance	Stations and LoR
Number of dwellings in areas at risk of experiencing a sense of isolation	Stations and LoR
Number of community facilities demolished	Stations and LoR
Number of community facilities at high risk of isolation/severance	Stations and LoR
Number of health care facilities demolished	Stations and LoR
Number of health care facilities at high risk of isolation/severance	Stations and LoR
Faith-related community facilities demolished	Stations and LoR

⁶ A 'concern' in this context refers to an issue that a PPC group has a greater need for, or sensitivity to, compared to the general population.

⁷ Where the scheme or its construction would potentially sever rights of way, new crossings or temporary access would be provided where practicable, subject to discussions with the local authorities.

Potential Scheme Impacts (measurable indicators)	Scheme Element - Stations/ Line of Route (LoR)
Faith-related community facilities at risk of isolation/severance	Stations and LoR
Construction jobs supported (direct employment)	Stations and LoR
Operational jobs supported (direct and indirect employment)	Stations and LoR
Commercial, retail or industrial properties demolished	Stations and LoR
Potential to improve public transport interchanges	Stations
Loss of playspace or landtake from open access areas	Stations and LoR
Noise appraisal findings	Stations and LoR
Air quality appraisal findings	Stations and LoR
Health analysis findings	Stations and LoR

Table 2.3 PPCs - Key equality concerns and potential impacts

Equality strand	PPC group	Key equality concern		Relevant potential impacts
Age	Children and young people (0-15)	Spatial analysis	Access to affordable housing	<ul style="list-style-type: none"> Number of dwellings demolished or at high risk of isolation/severance Estimated number of new dwellings supported around stations
			Access to community and health care facilities	<ul style="list-style-type: none"> Number of community facilities demolished or at high risk of isolation/severance, where known Number of health care facilities demolished or at high risk of isolation/severance, where known
			Access to public transport	<ul style="list-style-type: none"> Potential to improve public transport interchanges
			Potential marginalisation	<ul style="list-style-type: none"> Exacerbation of existing poor health in areas of deprivation
	Children and young people (16-25)	High-level analysis	Access to affordable housing	<ul style="list-style-type: none"> Potential property value increases as a result of the proposed scheme
			Personal safety	<ul style="list-style-type: none"> Potential for improving safety through station design and scheme operation design Potential for accidents involving construction traffic
	Older people (65+)	Spatial analysis	Outdoor playspace provision	<ul style="list-style-type: none"> Loss of playspace or landtake from open access areas
			Noise impacts on learning	<ul style="list-style-type: none"> Noise appraisal findings
		Heightened sensitivity to poor air quality	<ul style="list-style-type: none"> Air quality appraisal findings 	
	Sub-Group: Older people (65+)	Spatial analysis	Isolation including sense of isolation	<ul style="list-style-type: none"> Number of community facilities demolished or at high risk of isolation/severance Number of health care facilities demolished or at high risk of isolation/severance Number of dwellings in areas at risk of experiencing a sense of isolation

Equality strand	PPC group	Key equality concern		Relevant potential impacts
		High-level analysis	Heightened sensitivity to poor air quality	<ul style="list-style-type: none"> Air quality appraisal findings
Disability	People defined as disabled	Spatial analysis	Access to employment	<ul style="list-style-type: none"> Construction jobs supported (direct employment) Operational jobs supported (direct and indirect employment) Job losses associated with demolition of commercial, retail or industrial properties
			Access to affordable housing	<ul style="list-style-type: none"> Number of dwellings demolished or at high risk of isolation/severance Estimated number of new dwellings supported around stations
			Access to community and health care facilities	<ul style="list-style-type: none"> Number of community facilities demolished or at high risk of isolation/severance, where known Number of health care facilities demolished or at high risk of isolation/severance, where known
			Access to public transport	<ul style="list-style-type: none"> Potential to improve public transport interchanges
		High-level analysis	Access to affordable housing	<ul style="list-style-type: none"> Potential property value increases as a result of the proposed scheme
			Personal safety Hate crime and harassment (construction and operation)	<ul style="list-style-type: none"> Potential for improving safety through station design and scheme operation design Potential for conflict between construction workforce and local population
			Heightened sensitivity to poor air quality ⁸	<ul style="list-style-type: none"> Air quality appraisal findings

⁸ This concern is of relevance to people defined as disabled who have reduced breathing capacity as a consequence of their disability.

Equality strand	PPC group	Key equality concern		Relevant potential impacts
	Sub-Group: Wheelchair users and people with severe walking difficulties ⁹	Spatial analysis	Shortage of accessible housing	<ul style="list-style-type: none"> • Number of dwellings demolished or at high risk of isolation/severance • Estimated number of new dwellings supported around stations
		High-level analysis	Availability and cost of accessible housing	<ul style="list-style-type: none"> • Potential for proper compensation of individuals displaced from accessible homes
	Sub-Group: People with mental health problems or learning disabilities ¹⁰	High-level analysis	Noise sensitivities	<ul style="list-style-type: none"> • Noise appraisal findings
Race	Black, Asian and Minority Ethnic (BAME) groups including refugees and asylum	Spatial analysis	Access to employment	<ul style="list-style-type: none"> • Construction jobs supported (direct employment) • Operational jobs supported (direct and indirect employment) • Job losses associated with demolition of commercial, retail or industrial properties
			Access to affordable housing and housing for larger families ¹¹	<ul style="list-style-type: none"> • Number of dwellings demolished or at high risk of isolation/severance • Estimated number of new dwellings supported around stations

⁹ This sub-group is not specifically identified within the Act but comprises a sub-group of people with particular housing-related needs that may be affected by the scheme.

¹⁰ Some studies have suggested that railway suicide locations may cluster around psychiatric facilities, however evidence is conflicting, therefore risk of suicide amongst people in this protected group has been scoped out of the assessment (Improving suicide prevention measures on the rail network in Great Britain - Literature Review , RSSB (2000) http://www.rssb.co.uk/sitecollectiondocuments/pdf/reports/research/T845_LitRev_final.pdf)

¹¹ Access to housing is a key concern for Black Caribbean, Black African, Other Black and mixed race groups. Access to housing for larger families is a key concern for Black Caribbean, Black African, Other Black and Asian race groups

Equality strand	PPC group	Key equality concern		Relevant potential impacts
	seekers		Access to community and health care facilities	<ul style="list-style-type: none"> • Number of community facilities demolished or at high risk of isolation/severance, where known • Number of health care facilities demolished or at high risk of isolation/severance, where known
Access to public transport			<ul style="list-style-type: none"> • Potential to improve public transport interchanges 	
Potential marginalisation			<ul style="list-style-type: none"> • Exacerbation of existing poor health in areas of deprivation 	
Land availability for Gypsy and Travelling Communities			<ul style="list-style-type: none"> • Direct effects on existing Gypsy and Traveller caravan sites 	
High-level analysis		Access to affordable housing	<ul style="list-style-type: none"> • Potential property value increases as a result of the proposed scheme 	
		Hate crime and harassment (construction and operation)	<ul style="list-style-type: none"> • Potential for improving safety through station design and scheme operation design • Potential for conflict between construction workforce and local population 	
		Land availability for Gypsy and Travelling Communities	<ul style="list-style-type: none"> • Potential impacts on availability of land being used or available for use by Gypsy and Travelling Communities at the time of construction 	
		Personal safety ¹²	<ul style="list-style-type: none"> • Potential for accidents involving construction traffic 	
		Loss or impairment of BAME ownership/employee profile business activities	<ul style="list-style-type: none"> • Potential demolition or isolation of BAME owned/employee profile businesses or amenity impacts on business activity 	
Faith (religion or belief)		Faith groups	Spatial analysis	Access to housing for larger families
	Access to faith-related facilities			<ul style="list-style-type: none"> • Number of faith-related community facilities demolished or at high risk of isolation/severance

¹² Road Safety of London's Black and Asian Minority Ethnic Groups: A report to the London Road Safety, London School of Hygiene and Tropical Medicine Unit (2007) <http://www.tfl.gov.uk/assets/downloads/road-safety-of-londons-black-asian-minority-ethnic-groups.pdf>

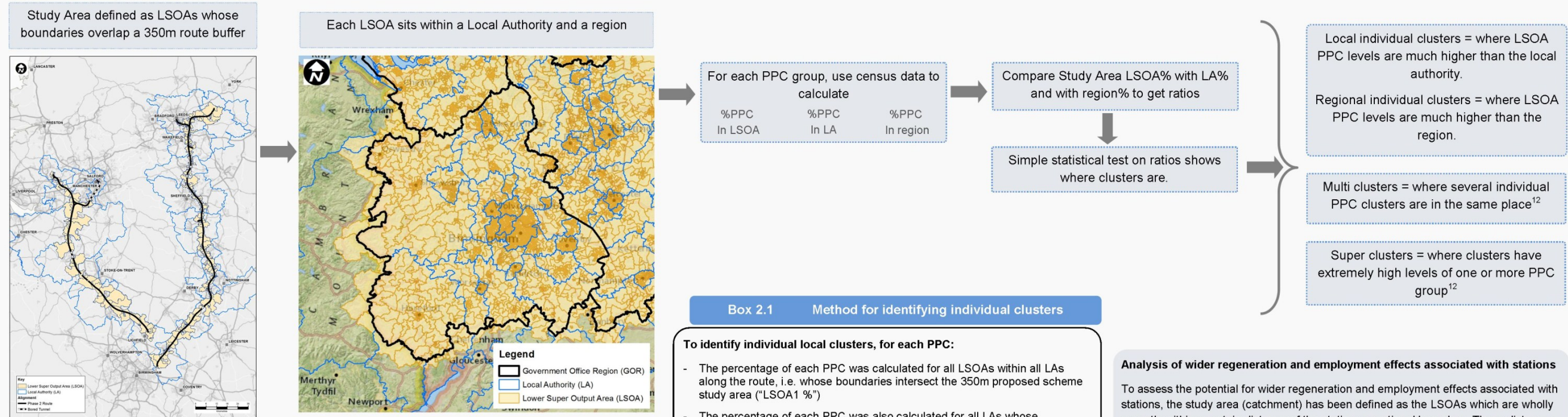
Equality strand	PPC group	Key equality concern		Relevant potential impacts
			Access to specialised retail outlets	<ul style="list-style-type: none"> • Number of commercial or retail properties demolished
		High-level analysis	Access to housing for larger families	<ul style="list-style-type: none"> • Potential property value increases as a result of the proposed scheme
			Availability of burial space	<ul style="list-style-type: none"> • Potential direct impacts on burial space
			Hate crime and harassment (construction and operation)	<ul style="list-style-type: none"> • Potential for improving safety through station design and scheme operation design • Potential for conflict between construction workforce and local population
Gender	Women including during pregnancy and maternity		Spatial analysis	Access to community and health care facilities
		Access to public transport		<ul style="list-style-type: none"> • Potential to improve public transport interchanges
		High-level analysis	Personal safety on public transport (lone travelling) Harassment (construction)	<ul style="list-style-type: none"> • Potential for improving safety through station design and scheme operation design • Potential for conflict between construction workforce and local population
Sexual Orientation and gender reassignment	Lesbians, gays, bisexual people and trans people	High-level analysis	Hate crime and harassment (construction and operation)	<ul style="list-style-type: none"> • Potential for improving safety through station design and scheme operation design • Potential for conflict between construction workforce and local population

Equality strand	PPC group	Key equality concern		Relevant potential impacts
Socio-economic Deprivation	People living in the 20% most deprived areas ¹³ Lone Parent Families ¹⁴	Spatial analysis	Access to employment	<ul style="list-style-type: none"> • Construction jobs supported (direct employment) • Operational jobs supported (direct and indirect employment) • Job losses associated with demolition of commercial, retail or industrial properties
			Access to affordable housing	<ul style="list-style-type: none"> • Number of dwellings demolished or at high risk of isolation/severance • Estimated number of new dwellings supported around stations
			Access to community and health care facilities	<ul style="list-style-type: none"> • Number of community facilities demolished or at high risk of isolation/severance, where known • Number of health care facilities demolished or at high risk of isolation/severance, where known
			Potential marginalisation	<ul style="list-style-type: none"> • Exacerbation of existing poor health in areas of deprivation
			Access to public transport	<ul style="list-style-type: none"> • Potential to improve public transport interchanges
		High-level analysis	Access to affordable housing	<ul style="list-style-type: none"> • Potential property value increases as a result of the proposed scheme
			Heightened sensitivity to poor air quality (people living in the 20% most deprived areas)	<ul style="list-style-type: none"> • Air quality appraisal findings

¹³ Not a defined PPC group but useful high-level indicator of where clusters of relatively deprived people are located (see **Figure 1**)

¹⁴ Not a defined PPC group but a group which is susceptible to exacerbated levels of inequality related primarily to economic deprivation (see **Figure 1**)

Figure 2 - Identifying Differential Impacts on PPCs (Step 4)



Box 2.1 Method for identifying individual clusters

To identify individual local clusters, for each PPC:

- The percentage of each PPC was calculated for all LSOAs within all LAs along the route, i.e. whose boundaries intersect the 350m proposed scheme study area ("LSOA1 %")
- The percentage of each PPC was also calculated for all LAs whose boundaries intersect the 350m proposed scheme study area ("LA %")
- The relative proportion of PPCs within each LSOA was compared to the LA average by dividing the LSOA1% by the relevant LA% ("LSOA1%/LA%").
- Taking the complete dataset as the LSOA1%/LA% fractions for all LSOAs within the LAs along the route, a simple statistical method was used to identify outliers (unusually large numbers) within the dataset:

Threshold for large dataset outliers = Q3+1.5 x IQR⁶

where Q3 = the third quartile (75th percentile)⁷ and IQR = the interquartile range⁸

- Potential clusters were identified as the LSOAs whose LSOA1%/LA% fractions were above the threshold.⁹
- The LSOAs identified through this test each represent an individual cluster of PPCs, relative to the local authority.

To identify individual regional clusters, for each PPC:

- The percentage of each PPC was calculated for all LSOAs within the four regions intersected by the route ("LSOA2 %")
- The percentage of each PPC was also calculated for the four regions ("GoR %")
- The relative proportion of PPCs within each LSOA was compared to the regional average by dividing the LSOA2% by the relevant GoR% ("LSOA2%/LA%").
- Taking the complete dataset as the LSOA2%/GoR% fractions for all LSOAs within the GoRs along the route, the same statistical method was used to identify outliers (unusually large numbers) within the dataset:

Threshold for large dataset outliers = Q3+1.5 x IQR

- Potential clusters were identified as the LSOAs whose LSOA2%/GoR% fractions were above the threshold.⁹
- The LSOAs identified through this test each represent an individual cluster of PPCs, relative to the region.

Analysis of wider regeneration and employment effects associated with stations

To assess the potential for wider regeneration and employment effects associated with stations, the study area (catchment) has been defined as the LSOAs which are wholly or partly within a certain distance of the station operational boundary. These distances are 1km for the new Manchester Piccadilly station and Leeds New Lane station and 2km for the new Manchester Airport High Speed Station, East Midlands Hub and Sheffield Meadowhall station.¹⁰

The equality profile of the study area, i.e. the average proportion of PPCs for affected LSOAs, was compared with equivalent measures for the local authority or region. This information is presented within **Annex 2**.

GIS methods were then used to review the potential for beneficial or adverse employment or housing effects to occur for each of the stations, based on the following considerations:

- the location of the stations (based on relevant effect indicators in Table 2.2);
- the PPC profile of the study area for each station;
- the ways in which current population distributions are likely to change in future;¹¹ and
- the key equality concerns of PPCs within these areas (as set out in Table 2.3).

Scheme-wide Analysis

Where spatial analysis of effect likelihood was not possible based on available data, a high-level scheme-wide appraisal of impact potential and possible effects has been undertaken and is also presented within **Annex 3**.

Analysis Workshop

An analysis workshop was held in April 2013, attended by specialist assessors and representatives of HS2 Ltd, to discuss the provisional analysis findings and ensure the analysis was being undertaken in a robust way.

Use of Clusters to assess Potential Direct and Local Indirect Equality Effects

The analysis of potential direct and local indirect effects involved identifying locations where the line of route or stations would potentially have a disproportionate effect on PPCs. Such effects would require PPCs to be present in relatively high numbers – i.e. clusters – in locations where potential scheme impacts would occur, having a negative effect on those PPCs because of their key equality concerns (see Table 2.3).

This EqA considers clusters in terms of 'Lower Layer Super Output Areas' (LSOAs), which are the smallest area for which census data relating to England is available¹. Between 1,000 and 3,000 people live in each LSOA. By analysing the numbers of PPC groups within these small units, a fine-grain analysis can be undertaken giving powerful information about the exact locations of PPC groups and potential impacts.²

Identifying Clusters and Analysing the Potential for Local Impacts

The study area for the analysis of potential direct and local indirect effects was defined as the collection of LSOAs whose boundaries fall partly or completely within a 350 metre corridor either side of the line of route³. This allows for the identification of both direct and indirect effects, e.g. severance of a particular concentration of a faith group from the place of worship.

A simple statistical method was used to identify individual PPC clusters as outliers within each set of data relative to either the local authority or region - details of this method are provided in Box 2.1. Using GIS, multi-clusters and super-clusters were also identified. GIS methods⁴ were then used to review the potential for beneficial or adverse effects to occur for the line of route, based on the following considerations:

- the location and likely size of potential scheme impacts (based on relevant impact indicators in Table 2.2);
- the current spatial distribution of PPCs (individual clusters, multi-clusters and super-clusters);
- the ways in which current population distributions are likely to change in future⁵; and
- the key equality concerns of PPCs within these areas (as set out in Table 2.3)

Where impacts are expected to occur at a very specific location (for example, demolition of properties), the analysis considers the ways in which current population distributions are likely to change in future. Therefore, some groups of PPCs would be potentially affected by an impact if they currently cluster in adjacent LSOAs, if future expansion of current clusters is likely.

¹ Office for National Statistics, 2011 Census: Digitised Boundary Data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: <http://edina.ac.uk/ukborders>

² There are on average approximately 100 LSOAs within each local authority (i.e. local plan or unitary plan area) in England, with more densely populated local authorities containing more LSOAs.

³ The 350m buffer represents a broad approximation of the area within which scheme impacts are likely to be felt, however the EqA will consider the likely extent of each impact according to its nature. The line of route is taken to exclude sections of bored tunnel, but extends to the end of all station platforms.

⁴ Geographic Information Systems.

⁵ Based on a review of research and analysis of demographic trends.

⁶ How Significant Is A Boxplot Outlier? Journal of Statistics Education Volume 19, Number 2(2011) <http://www.amstat.org/publications/jse/v19n2/dawson.pdf>

⁷ For a set of data, the third quartile (Q3) is a number for which 75% of the data is less than that number.

⁸ The interquartile range is a number defined as the difference between the first quartile (Q1) and third quartile (Q3) of a set of data.

⁹ Individual clusters where PPC groups represented less than 2% of the LSOA population (corresponding to 20-35 people depending on the LSOA size) were generally excluded from the analysis, since small numbers of individuals in isolation are not considered to represent 'meaningful' clusters'. This was considered on a case-by-case basis for the individual clusters identified.

¹⁰ These are the catchment areas defined within the Socio-economic assessment (within Appendix C of the Sustainability Statement).

¹¹ Based on a review of research and analysis of demographic trends.

¹² Further explanation of multi-clusters and super-clusters is provided in Section 2.8.

2.8. Identifying differential impacts on PPCs (Step 4)

2.8.1. As set out in **Figure 2**, a clustering methodology was used to identify potential scheme impacts on PPCs. Three types of PPC cluster have been defined for this study:

- Individual PPC clusters. As detailed in Box 2.1, these contain unusually large proportions of PPCs compared to the wider area. Local clusters are defined as LSOAs containing large proportions of PPCs compared to the local authority average. Regional clusters are defined as LSOAs (or local authorities, when data was not available at the LSOA level) containing large proportions of PPCs compared to the regional¹⁵ average.
- Multi-clusters. These are areas where three or more individual clusters of PPCs are co-located (either local or regional); such that impacts on a range of PPCs would potentially be experienced in a single area.
- Super-clusters. These are LSOAs where a particular PPC represents at least 10% of the LSOA total population and at least three times the average regional percentage for that PPC. These are therefore areas where particularly high proportions of PPCs are located, for groups which usually form a much smaller percentage of the population.¹⁶

2.8.2. The findings set out in Section 3 and **Annex 3** do not seek to distinguish between local or regional clusters in all cases, since both types of cluster indicate that a particularly high proportion of a PPC is present in an area. Information about the types of clusters located in particular areas is provided within **Annex 1** for reference.

2.9. Limitations of the analysis approach

2.9.1. The EqA findings should be understood on the basis of the following limitations associated with the approach taken:

- **Data availability.** The analysis relies on population data as set out in **Table 2.1**. Data relating to some groups was not available, and for some data was only available at local authority level. Future analysis should consider, where possible, likely effects on any relevant groups of PPCs not captured within this study.
- **Limitations of data categories.** It is difficult to clearly define groups of PPCs because definitions and categories vary between studies and the ways in which people chose to define themselves are also highly variable. Therefore, even where datasets are available for a PPC group, they are still approximate in nature and have value as broad indicators only. The value of the categories marked 'other' in the census is also limited, since these categories encompass people with an unknown and potentially diverse set of characteristics.
- **Uncertainties in future trends.** The population data used only reflects the distribution of the population at the time it was collected (2011, for most datasets used in this EqA). While the analysis takes account of likely future trends in population distributions where possible, accurate predictions cannot be made.
- **Other future development.** It is possible that future development projects or schemes unrelated to HS2 may lead to changes in population distributions which cannot be

¹⁵ "Region" refers to the Government Office Region

¹⁶ Super-clusters were identified using **Table 2.1** datasets relating directly to primary PPC group characteristics rather than secondary characteristics such as employment status.

foreseen at this stage. Analysis at a later stage would be necessary to understand the implications of future development on the findings set out in this report.

- **Information limited by scheme design stage.** Available information is commensurate with the stage of scheme design, and therefore necessarily limited.
- **Limitations of the clustering methodology** – the methodology employed in this analysis was chosen as a simple way of identifying areas where PPC groups occur in disproportionately large numbers, compared to the local authority or region. Careful review of the data has suggested the methodological approach is useful and meaningful. However, the methodology does have limitations which include the following:
 - *Variable range of cluster size.* For some PPCs (notably BAME and faith groups), the range of population size within clusters varied between approximately 25 people in some LSOAs (approximately 2% of the LSOA population) and several hundred in others (over 50% of the population). To understand where the largest groups are, super-clusters were identified;
 - *Variation in clustering tendencies.* Some groups of PPCs (notably BAME and faith groups) tend to cluster for socio-demographic reasons, whereas in other PPC groups (such as protected age groups, disabled people or lone parent families) the clustering tendency is much weaker, but may occur in some places due to common needs. This is reflected by the fact that the greatest number of clusters was identified for BAME and faith groups and relatively few clusters were identified for the other groups;
 - *Non-independence of data sets.* Each PPC characteristic is considered separately in the EqA, although the datasets are not independent. For example, an individual might fall within protected age, race, faith and gender groups whilst also being a lone parent and jobseeker. Therefore, for example in the case of multi-clusters, it would not be meaningful to combine population numbers associated with different characteristics as this may lead to double counting; and
 - *Limitations of cross-boundary comparison.* The reliability of the clustering methodology for comparison between adjacent LSOAs is limited at the boundaries between local authorities (for the local clusters) and between regions (for the regional clusters). This is due to the different baselines for comparison (see Box 2.1) for adjacent LSOAs within different local authorities or regions, which may result in identification of artificial distinctions between adjacent LSOAs in these areas. A careful manual review of the population data at these boundaries was undertaken to overcome this limitation.

2.10. Relationship with earlier sifting stages of the AoS

- 2.10.1. Equality analysis should be undertaken at a stage that ‘enables equality considerations to be taken into account before a decision is made’.¹⁷ Equality indicators relating to the seven sustainability themes listed in Section 2.12 were included in the AoS framework (see **Appendix B**) at an appropriate scale of enquiry to allow equality issues to be considered implicitly alongside other social, economic and environmental issues to inform the decision-making process during the option sifting stage.
- 2.10.2. The definition of route and station options for the scheme was carried out in four main sifts and culminated in the identification of a proposed scheme. The types of information appraised at each stage of the options appraisal are set out in the Sustainability Statement and summarised in the next section.

2.11. Using equality impact indicators to influence scheme refinement

- 2.11.1. During option development, from Sift 2 onwards, equality matters were considered implicitly through consideration of areas of relatively high deprivation, within which people were deemed to be more vulnerable to impact.
- 2.11.2. At Sift 2 the optioneering process focussed on avoiding direct impacts in the form of demolitions and landtake and on matching potential station options to potential growth and regeneration areas. It also highlighted route alignment and station options likely to affect the 20% most deprived areas on the basis that people living in these areas are potentially more susceptible to impact due, in part, to potential concentrations of PPCs.
- 2.11.3. Sift 2.5 drew on more detailed appraisal findings, considering the numbers and types of demolitions, general areas at high risk of isolation, impacts on public open spaces, impacts on planned growth areas and regeneration areas and combined impacts on the 20% most deprived areas, again recognising the greater vulnerability of people in deprived areas to some types of impact.
- 2.11.4. In instances where particularly significant adverse impacts were identified in terms of demolitions, landtake or absolute numbers of people affected, relating to the line of route, further engineering work was conducted to refine the profile or alignment of the option concerned to avoid or reduce the identified impacts. Where residual impacts were still expected, these locations were identified as needing further design work. The options that emerged from Sift 2.5 were largely those to be proposed to the Secretary of State, subject to some refinement at Sift 3 to reduce or mitigate certain impacts.
- 2.11.5. HS2 Ltd has been in discussions with local authorities on station options at regular intervals during the development of the scheme. These have continued and included discussions the line of route following announcement of the initial preferred scheme in January 2013. However, no consultation on specific equality matters has yet been undertaken.
- 2.11.6. Having identified the proposed scheme through the AoS process, this EqA seeks to draw out the possibility of any significant residual effects, in relation to specific PPCs. The findings of this EqA will therefore feed into any further scheme refinement, inform the incorporation of mitigation measures into the proposed scheme, and form the basis for more detailed EqA at a future design stage.

¹⁷ Equality objectives and the equality duty: A guide for public authorities, EHRC (2011)
http://www.equalityhumanrights.com/uploaded_files/EqualityAct/PSED/ehrc_psed_objectives_web.pdf

2.12. Documenting findings (Step 5)

2.12.1. A summary of the EqA findings are presented within Section 3 of this report according to seven sustainability themes:

- Access to housing;
- Access to key services and amenities;
- Community integrity;
- Safety and security;
- Noise;
- Air quality; and
- Socio-economic impacts.

2.12.2. The full details of the findings are provided in **Annex 3**.

3. FINDINGS

3.1. Overview

3.1.1. Maps showing where PPC groups are clustered, with a summary of the main EqA findings, are shown in **Figure 3** and **Figure 4**.

3.1.2. The broad locations of PPC clusters along the line of route are shown in **Annex 1**.

3.1.3. The proportions of PPC groups in the station catchments, compared to the local authority and regional averages, are set out in **Annex 2**.

3.1.4. The full details of the EqA findings are set out in **Annex 3**.

3.1.5. Along the western leg of the proposed scheme, PPCs are clustered mostly at the northern part of the route around Warburton Green (adjacent to Manchester Airport High Speed Station), Culcheth and Manchester Piccadilly/West Gorton. There is an additional multi-cluster mid-way along the route at Crewe.

3.1.6. Along the eastern leg of the route, individual clusters are spread more evenly along the route, with particular multi-clusters at Nuthall/Broxtowe, Tinsley/Wincobank, and Central Leeds (Pottery Field).

3.1.7. As set out in **Figures 3** and **4**, the proposed scheme has the potential to affect groups of PPCs in a range of ways. The greatest potential effects – both beneficial and adverse – are likely to be realised by groups of PPCs living near the stations.

3.1.8. Details of scheme construction are not known at this stage, although the proposed adoption of a code of construction practice (as is being employed on Phase One) will be essential in helping to minimise disruption, to the benefit of PPCs and local communities generally. The extent of noise and air quality impacts associated with station construction are also not yet known, though good site practice measures will be applied to minimise any potential effects. The extent of any such effects would need to be assessed at a later stage of scheme design.

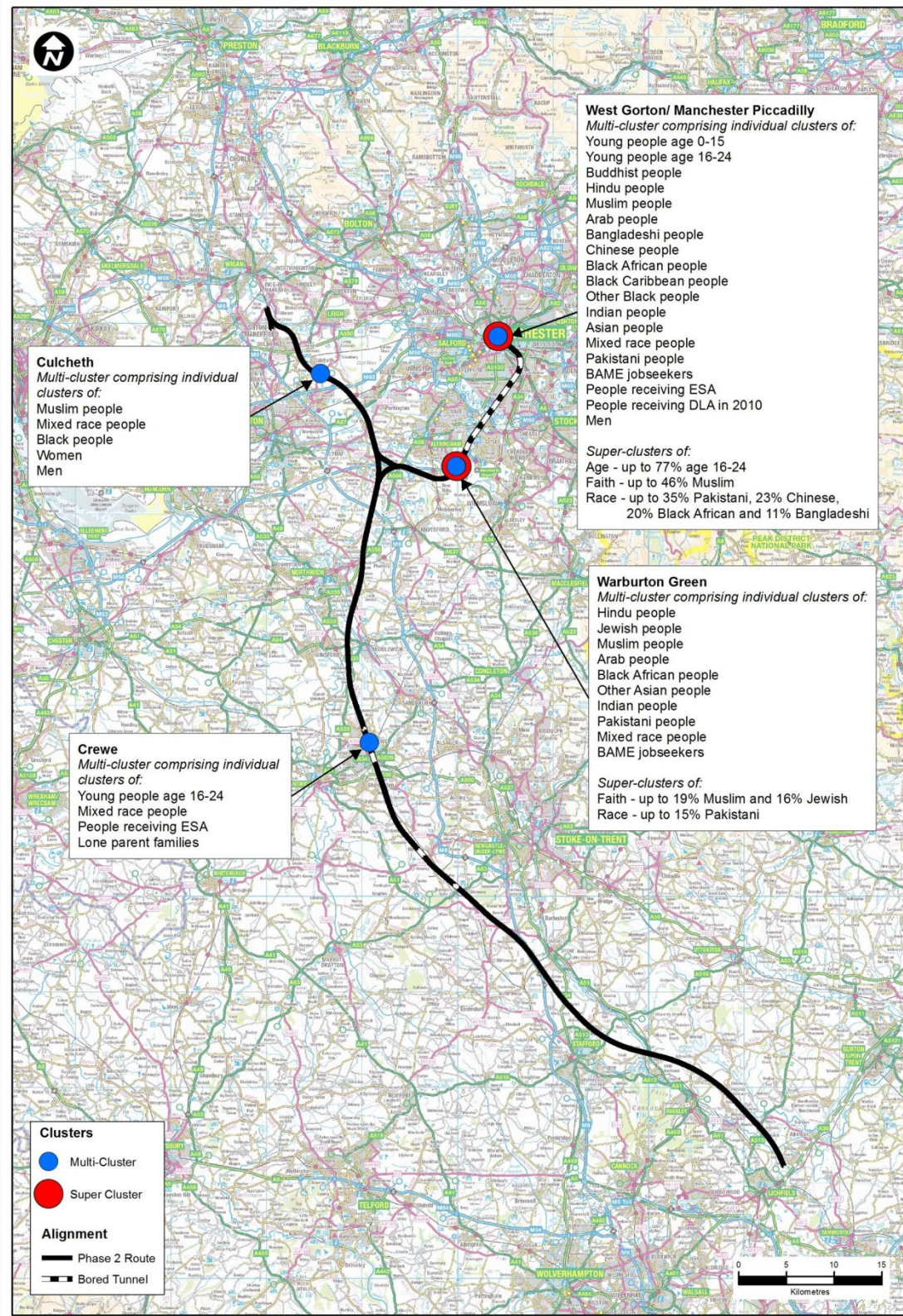
3.2. Next steps

3.2.1. The findings of this EqA provide a useful indication of the extent to which the proposed scheme is likely to promote or inhibit equality of opportunity, as a whole or at specific locations affected by a particular scheme element. The findings of this EqA will feed into

any further scheme refinement and inform consultation, during which comments from PPC groups identified in this report would be elicited and key concerns identified.

- 3.2.2. The outcomes of consultation in relation to equality matters will be considered in identifying further scheme refinements and incorporation of additional mitigation measures into the proposed scheme, and will form the basis for a more detailed EqA at a later stage, if necessary.

Figure 3 - Location-Specific Equality Impacts: Western Leg



Broad locations of PPC clusters and of scheme impacts are described, however the presence of a PPC cluster in an area (as indicated above and in Annex 1) does not necessarily mean the cluster is expected to be affected by scheme impacts that area.

West Gorton (Manchester Piccadilly Station area)

Compared to the local and regional averages, Manchester Piccadilly Station catchment has higher proportions of young people (16-24), BAME people (particularly Arab, Chinese, Indian and Other Asian) and Hindu people. Access to affordable housing (including housing for larger families) is pertinent to these groups, and access to employment is an issue for young people (16-24) and BAME groups. Regeneration-related benefits are likely to be felt by these groups in particular, through jobs associated with station construction and operation (direct benefits), as well as indirect benefits through net increases in jobs and housing within the station catchment. Opportunities exist to maximise the accessibility of new jobs and housing to people within these groups of PPCs.

The immediate area of the new Manchester Piccadilly station is a race and faith super-cluster, being home to relatively large proportions of people from BAME groups (including BAME jobseekers) and faith groups. There is potential for adverse effects relating to demolition of housing and of commercial, retail and industrial property in the immediate area of this station since access to affordable housing (including for larger families) and access to specialised retail outlets are key concerns amongst these groups. Access to employment is also a key concern for people in BAME groups and while some of the jobs held by PPCs which are displaced by the scheme are likely to be taken up by employment created elsewhere as an indirect result of the scheme, it is not necessarily the case that all will be.

There is also a high proportion of young people (16-24) in the immediate vicinity of this station. Access to affordable housing and employment is a key concern of people in this age bracket, as is access to community and health care facilities. This age group is therefore likely to be particularly vulnerable to adverse effects associated with demolition of housing and of commercial, retail and industrial property in the immediate area of Manchester Piccadilly station.

The area around the station currently has a relatively poor health profile, and the greatest likely adverse health effects associated with the western leg of the scheme are also focussed on this station area. Adverse health effects in this location may lead to further marginalisation of affected PPC groups. In particular, there is potential for further marginalisation of any PPC groups affected by the demolition of a group of approximately 50 dwellings north of Manchester Piccadilly to facilitate station construction; dispersion of the affected community could also potentially have adverse health and wellbeing impacts.

Warburton Green (Manchester Airport High Speed Station area)

The immediate area of the new Manchester Airport High Speed Station is a race and faith super-cluster (faith and BAME groups, as for Manchester Piccadilly) and there is potential for adverse effects relating to demolition of housing and of commercial or retail property in this area. The extent of any adverse effects is likely to be on a smaller scale than for Manchester Piccadilly station, since fewer properties will be demolished in the vicinity of the new Airport station.

As with Piccadilly, there is also a risk of potential marginalisation of these PPCs as a result of adverse health effects which may be experienced in the area.

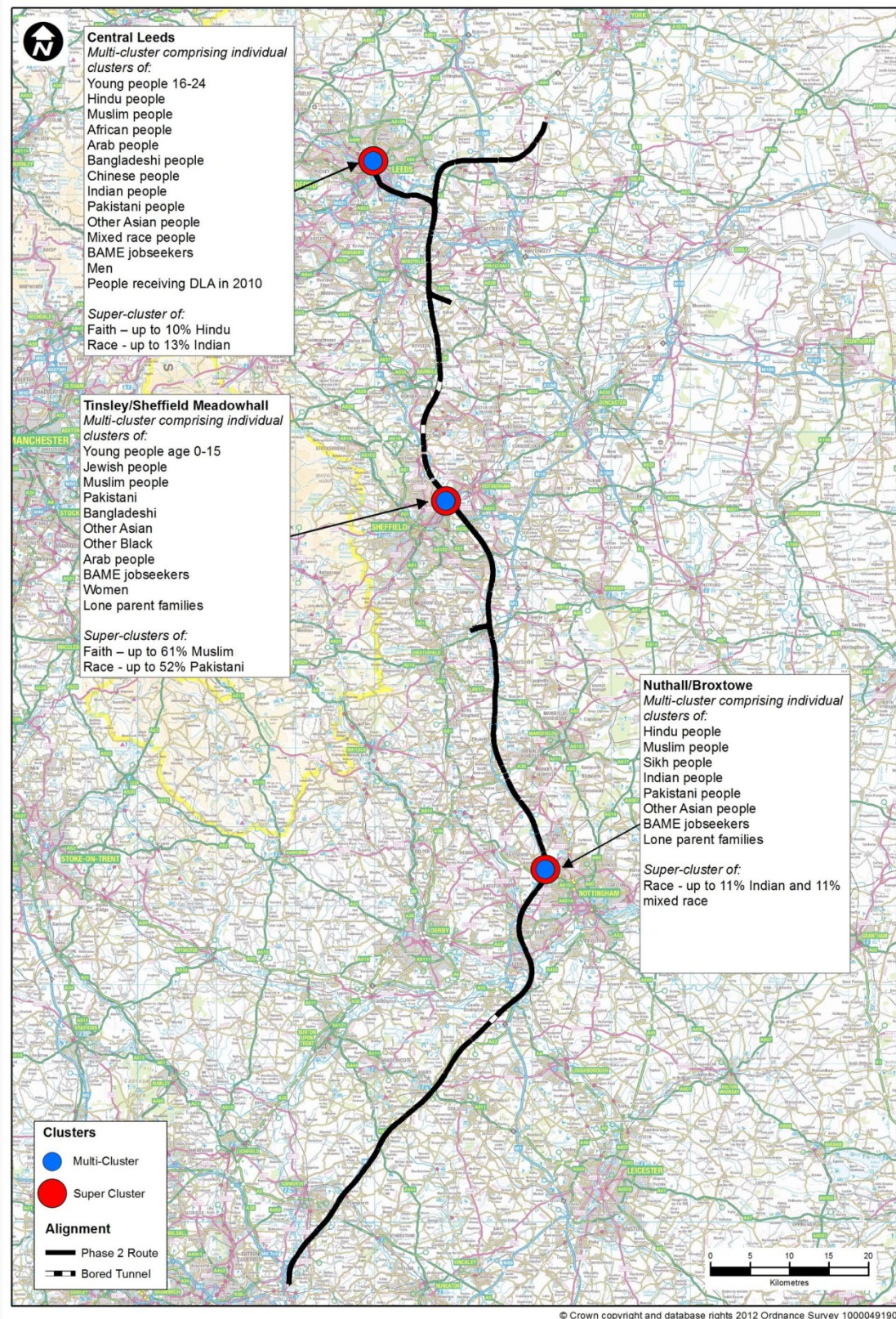
Crewe

No significant equality impacts.

Culcheth

There may be adverse effects affecting groups of PPCs living close to the line of route at Culcheth, in terms of potential job loss and reduced access to specialised retail outlets as a result of demolition of commercial, retail and industrial property on the Taylor Industrial Estate. The Culcheth area is home to high numbers of Muslim, Black and mixed race people, who have a particular sensitivity to these types of effect.

Figure 4 - Location-Specific Equality Impacts: Eastern Leg



Broad locations of PPC clusters and of scheme impacts are described, however the presence of a PPC cluster in an area (as indicated above and in Annex 1) does not necessarily mean the cluster is expected to be affected by scheme impacts in that area.

Central Leeds (Leeds New Lane Station area)

Compared to the local and regional averages, Leeds New Lane Station catchment has higher than average proportions of young people (16-24) and BAME, Muslim and Hindu people. Access to affordable housing (including housing for larger families) is pertinent to all these groups, and access to employment an issue for young people (16-24) and BAME groups. Positive regeneration-related benefits are likely to be felt by these groups, in particular through jobs associated with station construction and operation (direct benefits), as well as indirect benefits through net increases in jobs and housing.

The immediate area of Leeds New Lane Station is a race and faith super-cluster, being home to relatively large proportions of people from BAME groups (including BAME jobseekers) and faith groups. Access to affordable housing (including for larger families) and access to specialised retail outlets are key concerns for these groups; access to employment is also a key concern for people in BAME groups. The area also has a high proportion of young people (16-24) and a small location with a high proportion of lone parent families; access to affordable housing and employment are also key concerns of these groups. PPCs in the area of this station are therefore likely to be particularly vulnerable to any adverse effects associated with demolition of housing and to job loss associated with demolition of commercial, retail and industrial property. There is also potential for further marginalisation of people in these groups of PPCs as a result of the exacerbation of adverse health effects in the area as a result of the scheme.

Tinsley (Sheffield Meadowhall Station area)

Compared to the local and regional averages, Sheffield Meadowhall Station catchment has relatively high numbers of children and young people (0-15), BAME and Muslim people, and lone parent families. Access to affordable housing is pertinent to all these groups, with access to employment also being a concern for BAME people and lone parent families. Regeneration-related benefits are therefore likely to be felt by these groups in particular, through jobs associated with station construction and operation (direct benefits), as well as indirect benefits through net increases in jobs and housing within the station catchment. Opportunities exist to maximise the accessibility of new jobs and housing to people within these groups of PPCs.

There is potential for adverse effects relating to demolition of housing and of commercial, retail and industrial property in the immediate area of Sheffield Meadowhall station. This is also a race and faith super-cluster, being home to relatively large proportions of people from BAME groups (including BAME jobseekers) and faith groups. Access to affordable housing (including for larger families) and access to specialised retail outlets are key concerns amongst these groups. The high proportion of children and young people (0-15) in the immediate vicinity also have a particular need for access to affordable housing. Access to employment is also a key concern for people in BAME groups and while some of the jobs held by PPCs which are displaced by the scheme are likely to be taken up by employment created elsewhere as an indirect result of the scheme, it is not necessarily the case that all will be.

The area around the station has a relatively poor health profile, and the greatest likely adverse health effects associated with the eastern leg of the scheme are focussed on this station areas. Adverse health effects in this location may lead to further marginalisation of affected PPC groups. In particular, there is potential for further marginalisation of any PPC groups affected by the demolition of a group of approximately 60 dwellings to facilitate station construction including 50 at South Tinsley; dispersion of the affected community could potentially have adverse health and wellbeing impacts.

Tinsley and Wincobank are identified in the Sustainability Statement as being at a relatively high risk of noise effects and are within an area with particularly high proportions of children and young people (0-15). Schools are located in the vicinity of the station, however it is expected that measures would be taken to mitigate any adverse noise effects on learning.

Nuthall/Broxtowe

There may also be adverse effects on groups of PPCs at Nuthall. This is a race super-cluster, being home to large numbers of people from BAME groups as well as high numbers of Muslim people and lone-parent families. There may be adverse effects associated with job loss as a result of demolition of commercial property at Nottingham Business Park, since PPC groups in this area are sensitive to this impact.

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- Understanding the travel needs of London's diverse communities: A summary of existing research, Transport for London (April 2012) <http://www.tfl.gov.uk/assets/downloads/corporate/travel-needs-of-london-communities.pdf>
- Urban regeneration in East Manchester: a process of gentrification? CRESC Working Paper Series- Working Paper No. 77 (December 2009) <http://www.cresc.ac.uk/sites/default/files/wp%2077.pdf>

ANNEX 1

Locations of PPC Clusters

Table A1.1 - Locations of PPC Clusters

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
Age	Children and young people (0-15)	Source: ONS (2011 Census Data) Table: Age Structure, 2011 (KS102EW)	Western Leg <ul style="list-style-type: none"> • Longsight (south of West Gorton) Eastern Leg <ul style="list-style-type: none"> • Tinsley 	No additional areas with clusters
	Children and young people (16-24)	Source: ONS (2011 Census Data) Table: Age Structure, 2011 (KS102EW)	Western Leg <ul style="list-style-type: none"> • East of Stafford • Southern Crewe • North of Crewe • Manchester Piccadilly (super-cluster) Eastern Leg <ul style="list-style-type: none"> • Ratcliffe-on-Soar • Central Leeds 	No additional areas with clusters
	Older people (65+)	Source: ONS (2011 Census Data) Table: Age Structure, 2011 (KS102EW)	Western Leg No areas with clusters Eastern Leg <ul style="list-style-type: none"> • East of Swillington • Hollinhorpe and Swillington Common • North-west Garforth 	No additional areas with clusters

¹⁸ Individual clusters listed in this summary all relate to LSOAs for which properties are currently located within 350m of the scheme line of route.

¹⁹ To avoid repetition, regional clusters are only listed where they are not also listed as 'local clusters'.

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
	People defined as disabled	Disability Living Allowance (DLA) ²⁰ Source: ONS Table: Benefits Data – Summary Statistics, 2010	Western Leg <ul style="list-style-type: none"> • Lowton Common • Manchester Piccadilly Eastern Leg <ul style="list-style-type: none"> • No clusters 	Western Leg No additional areas with clusters Eastern Leg <ul style="list-style-type: none"> • East Pinxton • Hoyland • East Barnsley • East of Royston and Cold Hiendley
		Adults accessing mental health services Source: ONS Table: Mental Health – Adults accessing NHS mental health services in England 2010/2011	N/A (data unavailable)	Western Leg <ul style="list-style-type: none"> • No clusters Eastern Leg <ul style="list-style-type: none"> • West of Barnsley between Hoyland and Royston (Barnsley local authority)
		Employment and Support Allowance or Incapacity Benefit or Severe Disability Allowance Claimants (ESA) Source: ONS Table: Benefits Data – Working Age Client Group November 2011	Western Leg <ul style="list-style-type: none"> • Southern Crewe Eastern Leg <ul style="list-style-type: none"> • No clusters 	Western Leg <ul style="list-style-type: none"> • Manchester Piccadilly (super-cluster) Eastern Leg <ul style="list-style-type: none"> • Heath • Staveley
Race ²¹	Indian Pakistani	Source: ONS (2011 Census Data) Table: Ethnic Group, 2011 (QS201EW)	Western Leg <ul style="list-style-type: none"> • East of Stafford (Other Asian) 	Western Leg <ul style="list-style-type: none"> • Warburton (Indian and

²⁰ Since no clusters of people receiving DLA exceeded the 2% threshold described in Box 2.1, the threshold was reduced to 1.5% for this data set; therefore clusters of this PPC represent smaller proportions than for other PPCs.

²¹ For this equality strand, PPC names are emboldened where they are present in super-clusters.

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
			<p>Arab, Black African, Bangladeshi, Caribbean, Pakistani, Other Asian, Other Black and mixed race)</p> <ul style="list-style-type: none"> Central Leeds (BAME multi-cluster: Arab, Black African, Bangladeshi, Chinese, Indian, Pakistani, Other Asian and mixed race) 	
		<p>Source: ONS Table: Jobseeker's Allowance Claimants by Ethnicity, October 2010 - September 2011</p>	<p>N/A (data unavailable)</p>	<p>Western Leg</p> <ul style="list-style-type: none"> Manchester (Asian, Chinese, Black, mixed race) Salford (Black, mixed race) Trafford (Black, mixed race) <p>Eastern Leg</p> <ul style="list-style-type: none"> Nottingham (Asian, Chinese, Black, mixed race) Sheffield (Asian, Chinese, Black, mixed race) Leeds (Black, mixed race)
	<p>Gypsies and Travelling Communities</p>	<p>Source: ONS (2011 Census Data) Table: Ethnic Group, 2011 (QS201EW)</p> <p>Source: DCLG, Table: Count of Gypsy and Traveller caravans: July 2012 (Table 2.1)</p>	<p>Western Leg</p> <ul style="list-style-type: none"> No clusters or count data sites within 1.5km of the route <p>Eastern Leg</p> <ul style="list-style-type: none"> East of Wakefield <p>Review of count data - sites within 1.5km of the route:</p> <ul style="list-style-type: none"> 1.5km west of route at Alvecote (Pinxton) 600m west of route at 	<p>No additional areas with clusters</p>

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
			Holbrook (SE of Sheffield) <ul style="list-style-type: none"> • 1.3km north of the Crofton Depot 	
Faith (religion or belief)	Christian	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • Thorns Green Eastern Leg <ul style="list-style-type: none"> • Chapeltown • Swillington • North-west Garforth 	No additional areas with clusters
	Buddhist	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • Manchester Piccadilly Eastern Leg No areas with individual clusters	No additional areas with clusters
	Hindu	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • Warburton Green • Manchester Piccadilly Eastern Leg <ul style="list-style-type: none"> • Nuthall/Broxtowe • Central Leeds 	No additional areas with clusters
	Jewish	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • Warburton Green (super-cluster) • Davenport Green • Dunham/Warburton Eastern Leg <ul style="list-style-type: none"> • Tinsley 	No additional areas with clusters

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
	Muslim	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • Warburton Green (super-cluster) • Manchester Piccadilly/ West Gorton (super-cluster) • Culcheth Eastern Leg <ul style="list-style-type: none"> • Nuthall/Broxtowe • Tinsley (super-cluster) • Central Leeds 	Western Leg <ul style="list-style-type: none"> • Davenport Green Eastern Leg No additional areas with clusters
	Sikh	Source: ONS (2011 Census Data) Table: Religion, 2011 (QS208EW)	Western Leg <ul style="list-style-type: none"> • No clusters Eastern Leg <ul style="list-style-type: none"> • Nuthall/Broxtowe 	No additional areas with clusters
Gender (sex)	Women	Source: ONS (2011 Census Data) Table: Usual Residential Population, 2011 (KS101EW)	Western Leg <ul style="list-style-type: none"> • Culcheth Eastern Leg <ul style="list-style-type: none"> • No clusters 	Western Leg No additional areas with clusters Eastern Leg <ul style="list-style-type: none"> • Tinsley
	Men	Source: ONS (2011 Census Data) Table: Usual Residential Population, 2011 (KS101EW)	Western Leg <ul style="list-style-type: none"> • East of Stafford • Manchester Piccadilly • Culcheth (adjacent to individual cluster of women) Eastern Leg <ul style="list-style-type: none"> • Central Leeds 	No additional areas with clusters

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
Sexual Orientation	Lesbians, gays and bisexual people	Source: ONS (2011 Census Data) Table: Same Sex Couples, 2001 (UV93)	No individual clusters (fewer than 15 individuals recorded in every LSOA within the line of route study area)	
Socio-economic Deprivation (additional indicator)	People living in the 20% most deprived areas	Source: ONS Table: Indices of Deprivation 2010 for Super Output Areas	N/A (data unavailable)	<p>Western Leg</p> <ul style="list-style-type: none"> • Crewe • Warburton Green • Manchester Piccadilly /West Gorton • South west of Abram <p>Eastern Leg</p> <ul style="list-style-type: none"> • Long Eaton • Nuthall/Broxtowe • Huthwaite • Heath • Staveley • Treeton • Tinsley • Worsbrough • East Barnsley • Kirkthorpe • Central Leeds
Lone Parent Families (additional indicator)	Lone Parent Families	Lone Parents with Dependent Children Source: ONS (2011 Census Data) Table: Household Composition 2011 (KS105EW)	<p>Western Leg</p> <ul style="list-style-type: none"> • Crewe <p>Eastern Leg</p> <ul style="list-style-type: none"> • Tinsley (two individual clusters at Wincobank and 	<p>Western Leg</p> <ul style="list-style-type: none"> • Longsight (south of West Gorton) <p>Eastern Leg</p> <ul style="list-style-type: none"> • Broxtowe

Equality strand	PPC group	Data source	Locations of local clusters ¹⁸	Locations of regional clusters ¹⁹
			Shiregreen)	

ANNEX 2

Proportions of PPCs in Station Catchments

Table A2.1 - PPC proportions: Manchester Airport High Speed Station study area

		Study Area %	Local Authority %	Regional %
Age	0-15	21.4	19.0	18.8
	16-24	11.1	14.4	12.2
	65+	16.1	14.1	16.6
Disability	ESA	6.5	4.9	5.4
	DLA	0.9	0.7	0.8
	Mental health service access	-	2.1	2.5
Race	Black African	1.5	2.6	0.8
	Black Caribbean	0.6	1.3	0.3
	Other Black	0.6	0.8	0.2
	Indian	2.2	1.8	1.5
	Pakistani	2.2	4.6	2.7
	Bangladeshi	0.1	0.7	0.7
	Chinese	0.7	1.5	0.7
	Other Asian	1.0	1.4	0.7
	Arab	0.6	1.0	0.4
	Mixed Race	3.3	3.0	1.6
	Gypsy/ Traveller	0.0	0.1	0.1
	JSA claimants - Chinese	-	0.1	0.0
	JSA claimants – Asian	-	0.2	0.1
	JSA claimants – Black	-	0.3	0.1
JSA claimants – Mixed	-	0.1	0.0	
Faith	Christian	63.7	58.5	67.3
	Buddhist	0.4	0.5	0.3
	Hindu	1.0	0.8	0.5
	Jewish	2.7	0.5	0.4
	Muslim	4.1	8.6	5.1
	Sikh	0.2	0.4	0.1
Gender	Women	52.3	50.5	50.9
	Men	47.8	49.6	49.1
Sexual Orientation	Same-sex couples	0.1	0.2	0.1
Lone Parent Families	Lone Parent Families with dependent children	10.4	7.9	8.1

Table A2.2 - PPC proportions: Manchester Piccadilly station study area

		Study Area %	Local Authority %	Regional %
Age	0-15	9.9	19.4	18.8
	16-24	38.6	19.8	12.2
	65+	4.5	9.5	16.6
Disability	ESA	5.6	6.7	5.4
	DLA	0.4	0.7	0.8
	Mental health service access	-	2.6	2.5
Race	Black African	5.6	5.1	0.8
	Black Caribbean	1.9	1.9	0.3
	Other Black	1.7	1.6	0.2
	Indian	2.9	2.3	1.5
	Pakistani	2.8	8.5	2.7
	Bangladeshi	0.6	1.3	0.7
	Chinese	11.3	2.7	0.7
	Other Asian	3.5	2.3	0.7
	Arab	2.8	1.9	0.4
	Mixed Race	4.6	4.6	1.6
	Gypsy/ Traveller	0.1	0.1	0.1
	JSA claimants - Chinese	-	0.2	0.0
	JSA claimants – Asian	-	0.3	0.1
	JSA claimants – Black	-	0.5	0.1
JSA claimants – Mixed	-	0.2	0.0	
Faith	Christian	41.0	48.7	67.3
	Buddhist	2.3	0.8	0.3
	Hindu	1.6	1.1	0.5
	Jewish	0.4	0.5	0.4
	Muslim	10.7	15.8	5.1
	Sikh	0.5	0.5	0.1
Gender	Women	46.4	49.8	50.9
	Men	53.6	50.2	49.1
Sexual Orientation	Same-sex couples	0.4	0.2	0.1
Lone Parent Families	Lone Parent Families with dependent children	5.9	9.9	8.1

Table A2.3 - PPC proportions: East Midlands Hub study area

		Study Area %	Local Authority %	Regional %
Age	0-15	18.2	17.8	18.5
	16-24	10.6	10.7	12.1
	65+	17.4	18.2	17.1
Disability	ESA	3.4	3.2	3.9
	DLA	0.7	0.7	0.7
	Mental health service access	-	2.0	2.5
Race	Black African	0.3	0.2	0.9
	Black Caribbean	0.5	0.3	0.6
	Other Black	0.1	0.1	0.2
	Indian	1.3	1.5	3.7
	Pakistani	0.2	0.6	1.1
	Bangladeshi	0.0	0.1	0.3
	Chinese	0.5	0.6	0.5
	Other Asian	0.4	0.5	0.8
	Arab	0.1	0.2	0.2
	Mixed Race	1.6	1.5	1.9
	Gypsy/ Traveller	0.0	0.0	0.1
	JSA claimants - Chinese	-	0.0	0.0
	JSA claimants – Asian	-	0.0	0.1
	JSA claimants – Black	-	0.0	0.1
JSA claimants – Mixed	-	0.0	0.1	
Faith	Christian	56.5	57.8	58.8
	Buddhist	0.3	0.3	0.3
	Hindu	0.7	0.7	2.0
	Jewish	0.1	0.2	0.1
	Muslim	0.5	1.1	3.1
	Sikh	0.6	0.6	1.0
Gender	Women	50.8	50.8	50.7
	Men	49.2	49.2	49.3
Sexual Orientation	Same-sex couples	0.1	0.1	0.1
Lone Parent Families	Lone Parent Families with dependent children	6.9	5.9	6.7

Table A2.4 - PPC proportions: Sheffield Meadowhall station study area

		Study Area %	Local Authority %	Regional %
Age	0-15	23.3	18.5	18.9
	16-24	11.9	17.9	12.6
	65+	14.1	16.1	16.6
Disability	ESA	6.2	4.7	4.3
	DLA	1.0	0.8	0.7
	Mental health service access	-	2.8	2.4
Race	Black African	3.4	1.6	0.9
	Black Caribbean	1.3	0.7	0.4
	Other Black	0.9	0.4	0.2
	Indian	0.7	0.8	1.3
	Pakistani	9.5	3.7	4.3
	Bangladeshi	0.7	0.4	0.4
	Chinese	0.4	1.0	0.5
	Other Asian	1.2	0.9	0.8
	Arab	2.5	1.1	0.4
	Mixed Race	2.8	2.0	1.6
	Gypsy/ Traveller	0.1	0.1	0.1
	JSA claimants - Chinese	-	0.1	0.1
	JSA claimants – Asian	-	0.2	0.2
	JSA claimants – Black	-	0.2	0.1
	JSA claimants – Mixed	-	0.1	0.0
Faith	Christian	52.8	57.0	59.5
	Buddhist	0.2	0.3	0.3
	Hindu	0.2	0.5	0.5
	Jewish	0.1	0.1	0.2
	Muslim	15.7	6.5	6.2
	Sikh	0.1	0.2	0.4
Gender	Women	51.0	50.8	50.8
	Men	49.0	49.3	49.2
Sexual Orientation	Same-sex couples	0.1	0.1	0.1
Lone Parent Families	Lone Parent Families with dependent children	10.3	7.3	7.2

Table A2.5 - PPC proportions: Leeds New Lane station study area

		Study Area %	Local Authority %	Regional %
Age	0-15	10.9	18.3	18.9
	16-24	34.1	15.4	12.6
	65+	6.4	14.6	16.6
Disability	ESA	5.1	4.1	4.3
	DLA	0.4	0.6	0.7
	Mental health service access	-	2.5	2.4
Race	Black African	3.8	2.0	0.9
	Black Caribbean	0.6	0.9	0.4
	Other Black	0.7	0.6	0.2
	Indian	4.1	2.2	1.3
	Pakistani	3.1	3.0	4.3
	Bangladeshi	1.7	0.6	0.4
	Chinese	2.6	0.8	0.5
	Other Asian	2.1	1.2	0.8
	Arab	2.3	0.5	0.4
	Mixed Race	3.6	2.6	1.6
	Gypsy/ Traveller	0.1	0.1	0.1
	JSA claimants - Chinese	-	0.1	0.1
	JSA claimants – Asian	-	0.2	0.2
	JSA claimants – Black	-	0.2	0.1
	JSA claimants – Mixed	-	0.1	0.0
Faith	Christian	43.4	55.9	59.5
	Buddhist	0.7	0.4	0.3
	Hindu	2.9	0.9	0.5
	Jewish	0.5	0.9	0.2
	Muslim	9.5	5.4	6.2
	Sikh	0.7	1.2	0.4
Gender	Women	47.8	51.0	50.8
	Men	52.2	49.0	49.2
Sexual Orientation	Same-sex couples	0.1	0.1	0.1
Lone Parent Families	Lone Parent Families with dependent children	5.6	7.6	7.2

ANNEX 3

Detailed Analysis Findings

Table A3.1 Sustainability theme: access to housing

<p>Key equality concern: access to affordable housing including housing for larger families</p>
<p>PPC Groups: children and young people (0-15; 16-25), older people (65+), people defined as disabled, BAME groups including refugees and asylum seekers, Muslim, Sikh and Hindu faith groups, people living in the 20% most deprived areas, lone parent families.</p>
<p>Issues and Evidence: Access to housing has been identified as a particular concern for many of the PPCs considered in this study, and is associated with higher levels of socio-economic deprivation amongst these PPC groups.²³ Black and Asian people are also more likely to have larger families than white and Chinese families, as are Muslim, Sikh and Hindu people,²⁴ which may lead to reduced access to housing of a suitable size. As well as a greater proportion of lone parent families living in affordable housing than average, studies have also shown that single mothers living in deprived areas have a lower probability of moving to a non-deprived area than those with a partner.²⁵</p> <p>Transport schemes which reduce the availability of affordable housing in areas where there are relatively high proportions of PPCs for whom this is a concern, are likely to have an adverse effect on these PPCs. Conversely, schemes which provide new housing either directly or indirectly through encouraging regeneration, are likely to have a positive effect on these PPCs as UK policy encourages provision of affordable housing as part of new residential development within the UK.²⁶</p> <p>The establishment of new transport links in an area can also increase the cost of housing in the area of stations by making it more desirable.²⁷ While homeowners are likely to benefit from this, it may have an adverse effect on vulnerable groups of PPCs renting or seeking to rent accommodation in the area if they are unable to afford increased rental costs. Increased house prices may also be associated with a wider process of 'gentrification', which is a controversial notion generally considered to refer to adverse effects on communities associated with affluent middle-class households becoming established in working-class, 'de-invested' areas.²⁸ Conversely, house prices can be adversely affected by close proximity to transport schemes, as a result of reductions in amenity value.</p>
<p>Potential for beneficial or adverse effects</p>
<p>Impacts associated with existing dwellings</p> <p><u>Western Leg</u></p> <p>Warburton Green: three groups of dwellings will be demolished in close proximity, affecting approximately 15 dwellings in total. PPCs at risk of adverse effects associated with reduced availability of affordable housing in this area are Black African, mixed race and Muslim people who are clustered in this area. This area is also within the 20% most deprived areas.</p> <p>Manchester Piccadilly/West Gorton: two groups of approximately 50 and 20 dwellings will be demolished in this area. Clusters of PPCs at risk of adverse effects associated with reduced availability of affordable housing in this area are Black African, Black Caribbean, Other Black and mixed race people, young adults (16-24 years) and people receiving DLA in 2010. Black African, Black Caribbean and Other Black people are also at risk of adverse effects associated with reduced availability of affordable housing for</p>

²³ Understanding Demographic, Spatial and Economic Impacts on Future Affordable Housing Demand, Paper 1 - The Profile of Affordable Housing Residents, Cambridge Centre for Housing and Planning Research, January 2008 <http://www.cchpr.landecon.cam.ac.uk/Downloads/paper%201%20-%20Profile%20of%20the%20sector.pdf>

²⁴ Socio-demographic comparison between those UK families with up to two children and those with three or more, Population Matters (2012) http://www.populationmatters.org/documents/family_sizes.pdf

²⁵ Disparities in residential mobility among women with children, McCulloch (2010)

²⁶ National Planning Policy Framework, DCLG (March 2012) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

²⁷ Crossrail Property Impact Study, GVA (October 2012) <http://www.crossrail.co.uk/assets/download/5971>

²⁸ Urban regeneration in East Manchester: a process of gentrification? CRESC Working Paper Series- Working Paper No. 77 (December 2009) <http://www.cresc.ac.uk/sites/default/files/wp%2077.pdf>

larger families in this area, as well as Muslim people and Asian people clustered in this area. Black African people are present in particularly high proportions (up to 20% of the LSOA populations within the study area). This area contains a particularly high proportion of social housing and is within the 20% most deprived areas.

Lowton Common: approximately five dwellings will be demolished in this area, within a local cluster of people receiving DLA in 2010, who are at risk of adverse effects associated with reduced availability of affordable housing in this area.

Eastern Leg

No particular equality effects are expected to be associated with demolition of groups of dwellings at Whateley, Long Eaton, East of Pinxton and Renishaw.

Nuthall: approximately five dwellings will be demolished in this area, which has a large proportion of Sikh and Muslim people and BAME people (Indian, Pakistani and Other Asian people)

Tinsley: approximately 60 dwellings will be demolished to accommodate the new Sheffield Meadowhall station, including approximately 50 dwellings at South Tinsley. PPCs at risk of adverse effects associated with reduced availability of affordable housing in this area are children and young people (0-15 years), Muslim people and Pakistani, Bangladeshi, Other Asian, Black (particularly Black African) and Arab people who are also clustered in this area.

No permanent adverse effects on access to affordable housing as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects may occur during construction however details of construction are not yet known so this would need to be assessed at a later stage of scheme development. The status of existing access routes should be monitored closely, and if any are threatened an impact test should be undertaken for that route at the time.

There may be potential benefits to PPCs in the areas where enhanced transport links around stations will improve access to jobs and facilities and potentially extend the area in which people are able to live in order to access employment and services.

It is not possible to predict how the proposed scheme would affect house prices in the area of the line of route or around stations – this would need to be assessed at a later stage.

Impacts associated with new dwellings

The socio-economic assessment (within **Appendix C**) describes the potential benefits associated with housing redevelopment within the station catchments following station construction (although benefits are expected to be much smaller for Manchester Airport High Speed Station). The PPC demography of each catchment is set out in **Annex 2** of this report; in particular, Manchester Piccadilly catchment has particularly high levels of young people (16-24), men, Chinese and Arab people; Sheffield Meadowhall catchment has relatively high proportions of children and young people (0-15), Asian people (particularly Pakistani and Bangladeshi people, and Arab people) and Leeds New Lane station catchment has particularly high levels of young people (16-24), and higher than average proportions of a range of BAME groups. The estimated numbers of new dwellings expected to be provided in the catchments of the stations are as follows: Manchester Piccadilly: 3100-4100 dwellings, East Midlands Hub: 150-800 dwellings, Sheffield Meadowhall: 250-300 dwellings, Central Leeds: 1700-2400 dwellings.

Key equality concern: availability and cost of accessible housing

PPC Groups: disabled people (subgroup: wheelchair users and people with severe walking difficulties)

Issues and Evidence: wheelchair users and people with severe walking difficulties have particular requirements for accessible housing, which has associated costs. Displacement of people from adapted housing as a result of a new transport scheme may adversely affect them due to the potential costs of adapting a new house. Conversely, those owning housing in areas benefitting from new transport links may experience a positive effect associated with the establishment of new transport links if housing prices increase. Beneficial effects can also result from increased provision of accessible housing as part of new housing development associated with a scheme (directly or indirectly).

Potential for beneficial or adverse effects

Western Leg

Manchester Piccadilly: approximately 50 dwellings will be demolished in an area with a particularly high proportion of people receiving DLA in 2010.

Lowton Common: approximately five dwellings will be demolished in an area with a particularly high proportion of people receiving DLA in 2010.

Eastern Leg

No particular equality effects relating to accessible housing are expected to be associated with groups of dwellings demolished on the eastern leg.

It is possible, particularly within the Manchester Piccadilly and Lowton Common areas, that some of the dwellings which will be demolished as a result of the proposed scheme may be wheelchair-accessible or adapted to accommodate the specific needs of wheelchair users or those with severe walking difficulties. If adverse effects are identified, suitable compensation for affected people will be considered on a case-by-case basis.

As noted above, it is not possible to predict how the proposed scheme would affect house prices in the area of the line of route or around stations – this would need to be assessed at a later stage. Since the proposed scheme is expected to support large numbers of new dwellings in the areas of stations (other than Manchester Airport High Speed Station), it is expected that the proposed scheme will have an indirect beneficial effect on this PPC group through provision of additional accessible housing as part of regeneration schemes.

Key equality concern: land availability for Gypsy and Travelling Communities

PPC Groups: Gypsy and Travelling Communities

Issues and Evidence: the lack of suitable, secure accommodation underpins much of the inequality that Gypsy and Traveller communities experience²⁹. Removal of currently occupied or potential accommodation sites for Gypsies and Travellers would therefore have a potential adverse effect on this PPC group.

Potential for beneficial or adverse effects

Western Leg

No individual clusters of Gypsy or Traveller people were identified along the western leg of the proposed scheme. The July 2012 DCLG count data suggests there are no known Gypsy or Traveller sites within 1.5km of the western leg of the proposed scheme.³⁰

Eastern Leg

An individual cluster of Gypsy or Traveller people exists to the east of Wakefield. A visual inspection of aerial mapping³¹ does not suggest any direct land take affecting currently occupied Gypsy or Traveller sites within this LSOA. The July 2012 DCLG count data indicates that there are currently three Gypsy or Traveller sites located between 500m and 1.5km from the eastern leg of the route.

Overall there is no evidence that any direct land take of known Gypsy or Traveller sites will occur, on the basis of data currently available. Further analysis will be undertaken at a later stage. The likelihood of reduction in land availability for potential future Gypsy or Traveller sites as a result of the proposed scheme cannot be assessed on the basis of currently available information.

²⁹ Inequalities experienced by Gypsy and Traveller communities: A review, Equality and Human Rights Commission, 2009
http://www.equalityhumanrights.com/uploaded_files/research/12inequalities_experienced_by_Gypsy_and_traveller_communities_a_review.pdf

³⁰ To understand the potential for any impacts to affect Gypsy or Traveller people, a search for registered sites within a broader area of 1.5km was undertaken to ensure any sites within the study area were identified and allow for any geographical inaccuracy associated with postcode data. The presence of sites beyond the 350m study area does not necessarily indicate a potential for impacts.

³¹ Google Maps satellite imagery accessed 16/04/2013 (<http://maps.google.co.uk/>)

Table A3.2 - Sustainability theme: access to key services and amenities

<p>Key equality concern: access to community and health care facilities</p>
<p>PPC Groups: children and young people (0-15; 16-25), older people (65+), people defined as disabled, BAME groups including refugees and asylum seekers, women including pregnant women and nursing mothers, people living in the 20% most deprived areas, lone parent families</p>
<p>Issues and Evidence: access to services is a key issue for a number of PPCs.^{32, 33} Transport schemes have the potential to improve access to services by directly or indirectly connecting people with existing services, or by encouraging regeneration which might lead to increased provision of community services in an area. Conversely, such a scheme might reduce access through demolition of local services or by severing access routes linking people to services, such as roads or footpaths.</p>
<p>Potential for beneficial or adverse effects</p>
<p>At this stage there are no likely adverse equality impacts anticipated as a result of expected demolition of community or healthcare facilities during construction of the proposed scheme.</p> <p>No likely permanent adverse effects on access to community or healthcare facilities as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects are likely to occur during construction however details of construction are not yet known so this would need to be considered at a later stage of scheme development. There may also be potential benefits to PPCs in the area of stations associated with enhanced transport links around stations improving access to community and health care facilities in the wider area.</p>
<p>Key equality concern: access to public transport</p>
<p>PPC Groups: children and young people (0-15; 16-25), older people (65+), people defined as disabled, BAME groups including refugees and asylum seekers, women including pregnant women and nursing mothers, people living in the 20% most deprived areas, lone parent families</p>
<p>Issues and Evidence: access to public transport encompasses availability of public transport (for those without access to a car), physical accessibility of public transport (such as for wheelchair users or parents with pushchairs) and affordability of public transport. Access to public transport has been identified as a key concern for a range of PPCs, although the nature of access barriers varies between PPC groups.³⁴ Gypsy and Traveller communities are particularly affected by this concern since the locations of Gypsy and Traveller sites are often poorly served by local transport services.³⁵ Transport schemes by definition have the potential to improve transport connections, both directly and indirectly. They can, however, also reduce transport accessibility, for example through disruption to local services during construction or by the replacement of existing services</p>

³² Quality in and Equality of Access to Healthcare Services in England, CHE Research Paper 40 (2008)

http://www.york.ac.uk/media/che/documents/papers/researchpapers/rp40_access_to_healthcare_services_in_england.pdf

³³ Briefing Paper: Vulnerable groups and access to health care, NCCSDO (October 2006) http://www.netssc.ac.uk/hsdr/files/project/SDO_BP_08-1210-025_V01.pdf

³⁴ Understanding the travel needs of London's diverse communities: A summary of existing research, Transport for London (April 2012)

<http://www.tfl.gov.uk/assets/downloads/corporate/travel-needs-of-london-communities.pdf>

³⁵ Inequalities experienced by Gypsy and Traveller communities: A review, Equality and Human Rights Commission, 2009

http://www.equalityhumanrights.com/uploaded_files/research/12inequalities_experienced_by_Gypsy_and_traveller_communities_a_review.pdf

with a less accessible alternative.
Potential for beneficial or adverse effects
As set out in the access issues appraisal (within Appendix E), local transport connections are particularly good in the catchments of Manchester Piccadilly, Sheffield Meadowhall and Leeds New Lane stations, and it is possible that improvements to local services would be supported as a result of the proposed scheme, to further enhance local connections in these areas. This may therefore have benefits for the relevant PPCs living in these areas for whom access to transport is a key concern, although the extent of adverse effects cannot be assessed at this stage. Similarly, details of station design have not yet been established; however there are opportunities to deliver large benefits to PPCs by maximising accessibility through careful station and scheme design, with principles of best practice being applied. ³⁶
Key equality concern: outdoor play space provision
PPC Groups: children and young people (0-15)
Issues and Evidence: play is important for the wellbeing and development of children, and it is important that they have access to a diversity of spaces to play. ³⁷ Access to local play space, which can be accessed on foot or bicycle, is especially important for children; therefore direct beneficial effects of transport schemes on access to play space are likely to be limited in general. Indirect beneficial effects may be associated with provision of additional play space as part of wider regeneration encouraged by such schemes. Adverse effects, however, in terms of access to play space may occur as a result of direct land take affecting play space, green spaces or open access areas, or by severing access ways linking residential areas with potential areas of play space.
Potential for beneficial or adverse effects
No likely land take from open access areas is expected as a result of the proposed scheme. A detailed review of available play space has not been undertaken at this stage; however the proposed scheme will result in land take within an area with a particularly high proportion of children and young people (0-15) on the eastern leg at Tinsley, associated with part of the route and Sheffield Meadowhall station. Any removal of play space in this area as a result of the proposed scheme would potentially have an adverse effect; however this would need to be assessed at a later stage to determine the extent of any necessary re-provision.
Key equality concern: access to faith-related facilities
PPC Groups: faith groups
Issues and Evidence: regular attendance at and access to faith-related facilities is important for many members of faith groups, for both spiritual and social reasons. As for access to community and health care facilities, transport schemes have the potential to improve access by faith groups to faith-related facilities by directly or indirectly connecting people with existing facilities. Conversely, such a scheme might reduce access through demolition of such facilities or by severing access routes linking people to facilities, such as roads or footpaths.
Potential for beneficial or adverse effects
No faith-related community facilities have been identified as likely to be demolished, on the basis of currently available information; however this would need to be assessed at a

³⁶ Accessing Public Transport, Post note Number 432, Parliamentary Office of Science and Technology (March 2013) <http://www.parliament.uk/briefing-papers/POST-PN-432>

³⁷ Play for a Change - Play, Policy and Practice: A review of contemporary perspectives, Play England (2008) <http://www.playengland.org.uk/media/120519/play-for-a-change-summary.pdf>

more detailed stage once further information is available.

No likely permanent adverse effects on access to faith-related facilities as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects may occur during construction however details of construction are not yet known so this could only be assessed at a later stage of scheme development.

Any adverse effects identified on access to faith-related facilities would be particularly significant if they occurred within areas where particularly high proportions of faith groups have been identified. Locations where faith group clusters are located are set out in **Annex 1** with proportions being particularly high within the super-clusters of Warburton Green (up to 19% Muslim and up to 16% Jewish) and West Gorton/Manchester Piccadilly (up to 45% Muslim) on the western leg and at Tinsley (up to 61% Muslim) and Central Leeds (up to 16% Muslim) on the eastern leg.

There may also be potential benefits to faith groups in the areas around new stations associated with enhanced transport links around stations improving access to faith-related facilities in the wider area.

Key equality concern: access to specialised retail outlets

PPC Groups: BAME groups and faith groups

Issues and Evidence: areas with particularly large populations of BAME groups and faith groups often have relatively high proportions of specialised retail outlets, notably specialised food outlets. As for access to community and health care facilities, transport schemes have the potential to improve access to specialised retail outlets by directly or indirectly connecting people with existing outlets. Conversely, such a scheme might reduce access through demolition of such outlets or by severing access routes linking people to outlets, such as roads or footpaths.

Potential for beneficial or adverse effects

Western Leg

Manchester Piccadilly/West Gorton: approximately 50 commercial or retail demolitions. Particularly large proportions of Muslim people and BAME groups in this area (Black African, Black Caribbean and Other Black Asian, Arab, mixed race, Indian, Pakistani, Bangladeshi and Chinese people).

Culcheth: approximately 15 commercial or retail demolitions. Particularly large proportions of Muslim people, Black and mixed race people in this area.

Eastern Leg

No particular adverse effects on access to specialised retail outlets by PPCs are expected to be associated with commercial or retail demolitions at Measham, Long Eaton or Nuthall.

Catcliffe: approximately five commercial or retail demolitions. Particularly large proportions of Muslim people and BAME groups (Pakistani, Bangladeshi, Other Asian, Black African and Arab people) in this area.

Tinsley/Wincobank: approximately 30 commercial or retail demolitions associated with Sheffield Meadowhall station construction. Particularly large proportions of Muslim and Jewish people and BAME groups (Pakistani, Bangladeshi, Other Asian, Black Caribbean, Black African, Other Black, Arab and mixed race people) in this area.

Central Leeds (Pottery Field): approximately 20 commercial or retail demolitions. Particularly large proportions of Hindu, Jewish and Muslim people and BAME groups in this area (Indian, Pakistani, Bangladeshi, Chinese, Other Asian, Black African, Arab and mixed race people).

The detailed location of specialised retail provision is not known at this stage, therefore all commercial or retail property is considered to potentially fall within this category. No likely permanent adverse effects on access to specialised retail outlets as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects may occur during construction however details of construction are not yet known so this would need to be considered at a later stage of scheme development. There may also be potential benefits to faith and BAME groups at Manchester Piccadilly, Tinsley and Central Leeds associated with enhanced transport

links around stations improving access to specialised retail outlets in the wider area.

Key equality concern: availability of burial space

PPC Groups: faith groups

Issues and Evidence: England is facing a shortage of burial space.³⁸ Orthodox Judaism and Islam and some fundamentalist Christian groups do not allow cremation, therefore the need for burial space is particularly important for these faith groups. Transport schemes can have an adverse effect on burial space; either directly through land take of currently allocated burial space, or indirectly by reducing availability of potential future burial space.

Potential for beneficial or adverse effects

No instances of land take affecting current burial space have been identified, on the basis of currently available information; however this would need to be assessed at a more detailed stage once further information is available.

No likely permanent adverse effects on access to burial space as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects may occur during construction however details of construction are not yet known so this could only be assessed at a later stage of scheme development.

Any adverse effects identified on availability of burial space would be particularly significant if they occurred within areas where particularly high proportions of relevant faith groups have been identified. Locations where faith group clusters are located is set out in **Annex 1** with proportions being particularly high within the super-clusters of Warburton Green (up to 19% Muslim and up to 16% Jewish) and West Gorton/Manchester Piccadilly (up to 45% Muslim) on the western leg and at Tinsley (up to 61% Muslim) and Central Leeds (up to 16% Muslim) on the eastern leg.

³⁸ The Cemetery Research Group – Frequently Asked Questions (website accessed 24/04/2013) <http://www.york.ac.uk/chp/crg/crgcontext.htm#runningout>

Table A3.3 - Sustainability theme: community integrity

<p>Key equality concern: potential marginalisation</p>
<p>PPC Groups: children and young people (0-15; 16-25), older people (65+), BAME groups including refugees and asylum seekers, people living in the 20% most deprived areas, lone parent families</p>
<p>Issues and Evidence: marginalisation, also known as social exclusion, can be defined in a number of ways.³⁹ In addition to any specific effects on PPCs, transport schemes may contribute to marginalisation by causing adverse impacts in locations where relatively large proportions of PPCs at above-average risk of poverty⁴⁰ are located.</p>
<p>Potential for beneficial or adverse effects</p>
<p>The findings of the health analysis (Appendix E) indicate that potential beneficial and adverse effects on health are most likely to occur in the area of the five stations. All the stations except the East Midlands Hub have been identified in Section 2 of this EqA as locations of both multi-clusters and super-clusters since a large diversity and proportion of people with PPCs are located within these areas. Large groups of dwellings will also be demolished in the area of Manchester Piccadilly station on the western leg and Sheffield Meadowhall station on the eastern leg, dispersing these communities and potentially bringing adverse health and wellbeing impacts. The extent of any marginalisation of groups associated with adverse health effects in these locations would need to be assessed at a later stage in scheme development.</p>
<p>Key equality concern: isolation and sense of isolation</p>
<p>PPC Groups: older people (65+)</p>
<p>Issues and Evidence: transport schemes can create areas of isolation, if they enclose areas which are already partially bounded by existing infrastructure, if the necessary access routes are not provided to maintain connections with adjacent communities or facilities. This type of isolation is expected to be avoided through provision of access route links; however, an adverse 'sense of isolation' may nonetheless be experienced by residents of dwellings who are surrounded by infrastructure links. Older people are particularly vulnerable to adverse mental health effects associated with feelings of isolation.⁴¹</p>
<p>Potential for beneficial or adverse effects</p>
<p>No likely permanent adverse effects on older people as a result of isolation or severance have been identified, since it is the intention that all access roads will be maintained. Temporary adverse effects may occur during construction, however details of construction are not yet known so this would need to be assessed at a later stage of scheme development. The areas where dwellings may be at risk of experiencing a sense of isolation as a result of the proposed scheme (as set out in the Sustainability Statement) do not correspond to the areas where particularly high proportions of older people have been identified. However, it is not possible at this stage to identify whether those dwellings identified as being at risk of experiencing a sense of isolation include any dwellings which are specifically designed to accommodate older people (for example, sheltered housing or residential care homes). This would also need to be assessed at a later stage of scheme development.</p>

³⁹ Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups, Working Paper 1: User Needs Literature Review, Transport Studies Group - University of Westminster (updated June 2005) http://home.wmin.ac.uk/transport/download/SAMP_WP1_Literature_Review.pdf

⁴⁰ Poverty and Social Exclusion in Britain, JRF (2000) <http://www.jrf.org.uk/sites/files/jrf/185935128x.pdf>

⁴¹ Preventing loneliness and social isolation among older people, At a Glance (60), SCIE (May 2012) <http://www.scie.org.uk/publications/ata glance/ata glance60.pdf>

Table A3.4 - Sustainability theme: safety and security

<p>Key equality concern: personal safety</p>
<p>PPC Groups: children and young people (0-15; 16-25), older people (65+), people defined as disabled, Black people, women including pregnant women and nursing mothers</p>
<p>Issues and Evidence: personal safety in the context of this EqA is limited to consideration of the risk of harm to PPCs associated with opportunist mugging or assault, or the risk of harm associated with scheme construction works or road traffic. Personal safety risks associated with hate crime and harassment are considered separately below.</p> <p>Transport schemes may give rise to increased opportunity for opportunist muggings or assaults targeting PPCs who are less well able to defend themselves, depending on the design of construction sites and design of the proposed scheme itself (including stations).</p> <p>Construction of transport schemes can also potentially pose a risk to vulnerable people – especially children – gaining access to construction sites. Such schemes can also affect the rate of road-related injury or death. Such effects can be adverse – increasing the risk of injury as a result of construction traffic levels or by causing a local increase in road traffic levels by providing new car parks (enabling people to connect with services). However, effects could also be beneficial (in the case of non-road transport schemes), if they support a modal shift away from road transport (i.e. reducing the number of car journeys). Some studies have indicated that children and Black people in particular may have a particularly high risk of injury on the roads.^{42, 43}</p>
<p>Potential for beneficial or adverse effects</p>
<p>The health analysis (within Appendix E) concludes that the proposed scheme may have a positive impact overall in terms of safety (since rail travel is safer than road), however risk of injury levels may increase near the new stations due to increased traffic around these areas. The likelihood and extent of any effects relating to the risk of accidents associated with construction traffic, as well as the risk of assault within or around the construction or operational scheme area would need to be assessed at a later stage in scheme design.</p>
<p>Key equality concern: hate crime and harassment (construction and operation)</p>
<p>PPC Groups: people defined as disabled, BAME groups including refugees and asylum seekers, faith groups, lesbian, gay, bisexual and trans people, women including pregnant women and nursing mothers</p>
<p>Issues and Evidence: transport schemes may give rise to increased opportunity for hate crime and harassment, where certain PPCs are targeted on account of their appearance or behaviour.⁴⁴ During construction, the opportunities for hate crime and harassment associated with the development of a transport scheme would depend on the design of construction sites and measures in place to ensure that conflict between people within local communities and the construction workforce are minimised. During operation, the risk of incident relating to hate crime and harassment would depend on design of the proposed scheme itself (including in and around stations, in accessible trackside areas and on trains).</p>

⁴² Deprivation and Road Safety in London, a report to the London Road Safety Unit (2006) <http://www.tfl.gov.uk/assets/downloads/deprivation-and-road-safety.pdf>

⁴³ Road Safety of London's Black and Asian Minority Ethnic Groups: A report to the London Road Safety, London School of Hygiene and Tropical Medicine Unit (2007) <http://www.tfl.gov.uk/assets/downloads/road-safety-of-londons-black-asian-minority-ethnic-groups.pdf>

⁴⁴ Challenge it, Report it, Stop it: The Government's Plan to Tackle Hate Crime, H M Government (2012) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/97849/action-plan.pdf

Potential for beneficial or adverse effects

As set out in Annexes 1 and 2 of this report, each of the proposed stations and their catchments are home to particularly high levels of PPC groups identified as being at risk of hate crime and/or harassment, with additional clusters of vulnerable PPCs spread along the line of route. The risk of these PPCs experiencing hate crime or harassment within or around the construction or operational scheme would need to be assessed at a later stage in scheme design.

Table A3.5 - Sustainability theme: noise

<p>Key equality concern: noise effects on learning</p>
<p>PPC Groups: children and young people (0-15)</p>
<p>Issues and Evidence: the large scale RANCH study,⁴⁵ which compared the effect of road traffic and aircraft noise on children’s cognitive performance in the Netherlands, Spain and the UK, found a linear exposure-effect relationship between chronic aircraft noise exposure and impaired reading comprehension and recognition memory, after taking a range of socio-economic and confounding factors into account. Although there are a lot of uncertainties in research conclusions to-date,⁴⁶ a precautionary approach (as advocated by the NPSE)⁴⁷ suggests that the preliminary findings of this study can be used to guide the impact assessment interpretations and conclusions. As such, it is considered that noise may have an adverse effect on children’s cognitive development.</p>
<p>Potential for beneficial or adverse effects</p>
<p><u>Western Leg</u> There are no known locations where particularly high proportions of children and young people (0-15) are co-located with areas at relatively high risk of noise effects on the western leg, based on currently available information. Seven schools are within 300m of the proposed scheme on the western leg although it is expected that measures would be taken to mitigate adverse noise effects on learning.</p> <p><u>Eastern Leg</u> Tinsley and Wincobank have been identified as being at a relatively high risk of noise effects and are within an area with particularly high proportions of children and young people (0-15). 12 schools are within 300m of the proposed scheme on the eastern leg, of which some are located to the south of Sheffield Meadowhall station and may be affected by the increased noise levels in this area. Again, it is expected that measures would be taken to mitigate adverse noise effects on learning. There are no other areas where particularly high proportions of young people (0-15) have been identified as being at relatively high risk of noise effects on the eastern leg, based on currently available information. The noise and vibration appraisal (within Appendix E) sets out further information. More detailed noise analysis will be carried out at a later stage in scheme development.</p>

⁴⁵ Aircraft and road traffic noise and children’s cognition and health: a cross-national study, Stansfeld *et al*, The Lancet. Vol. 365, 1942-49 (2005)
http://www.teamsofangers.org/publication/medical_journal_articles/Noise.pdf

⁴⁶ Estimating Dose-Response Relationships Between Noise Exposure and Human Health Impacts in the UK, Defra (2009)
<http://archive.defra.gov.uk/environment/quality/noise/igcb/documents/tech-report.pdf>

⁴⁷ Noise Policy Statement for England, Defra (2010) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

Key equality concern: noise sensitivities
PPC Groups: people with mental health problems or learning disabilities
Issues and Evidence: notwithstanding established relationships for annoyance and disturbance, there remains substantial uncertainty with regard to the effects of noise on mental health. ⁴⁸ Not least it is unclear whether noise might cause or worsen mental health problems or whether mental health problems increase the impacts of noise or reduce the ability to tolerate noise. In the latter case, noise annoyance is consistently found to be an important mediator with regard to mental health effects ⁴⁹ and evidence suggests that environmental noise exposure at higher levels is related to mental health symptoms and possibly raised anxiety. ⁵⁰ As such, people already suffering from certain mental health disorders may have an elevated sensitivity to elevated noise levels.
Potential for beneficial or adverse effects
Barnsley, on the eastern leg, is the only local authority where relatively high proportions of adults accessing mental health facilities are located (data is not available for this indicator at LSOA level). Places along the route through this local authority which have been identified as being at a relatively high risk of noise effects are Worsbrough, West Green, Cudworth and Royston. It is not known at this stage whether any mental health facilities are located close to the route, however, it is expected that measures would be taken to mitigate adverse noise effects on users of such facilities.

⁴⁸ Environmental Noise and Health in the UK - a report published by the Health Protection Agency on behalf of an ad hoc Expert Group on the Effects of Environmental Noise on Health (2009) http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1279888026747

⁴⁹ Estimating Dose-Response Relationships Between Noise Exposure and Human Health Impacts in the UK, Defra (2009) <http://archive.defra.gov.uk/environment/quality/noise/igcb/documents/tech-report.pdf>

⁵⁰ Night Noise Guidelines for Europe, World Health Organization (2009) http://www.euro.who.int/_data/assets/pdf_file/0017/43316/E92845.pdf

Table A3.6 - Sustainability theme: air quality

Key equality concern: heightened sensitivity to poor air quality
PPC Groups: children and young people (0-15), older people (65+), people defined as disabled ⁵¹ , people living in the 20% most deprived areas
Issues and Evidence: it is generally accepted that children’s developing lungs may be more susceptible to air pollution, although there is no evidence that short-term increases in air pollution have permanent effects on developing lungs. Elderly people have also been shown to have a lower capacity to deal with increases in air pollution than younger adults, and there is some evidence to suggest that people living in socio-economically deprived areas may show greater susceptibility to poor air quality (probably due to a combination of higher levels of chronic disease, poorer diet and greater exposure). ⁵² Older people and those living in socio-economically deprived areas may therefore be susceptible to short-term reductions in air quality levels as well as long-term significant impacts, which children would also be at greater risk from.
Potential for beneficial or adverse effects
<p>The air quality analysis presented in Appendix E concludes that potentially adverse effects from dust and road vehicle emissions during construction may occur at all five of the new stations associated with the proposed scheme as well as potentially adverse effects from road vehicle emissions during operation. However, the significance of effects would need to be assessed at a later stage when more detailed scheme information is available. Since particularly high proportions of older people are not located in the area of the stations, this PPC group would not be expected to be at particular risk of adverse effects associated with any deterioration in air quality. However, children and young people (0-15) are present in particularly high proportions at Tinsley, in the immediate location of the new Sheffield Meadowhall station – any significant operational air quality impacts at this station would therefore be likely to have a disproportionate effect on this PPC group. The five stations are all located within the 20% most deprived areas, therefore significant construction or operational air quality impacts at any of the stations may have a disproportionate effect on the various PPCs in these areas, by virtue of the local socio-economic deprivation levels.</p> <p>The likelihood and extent of any significant effects associated with reduced air quality would need to be assessed at a later stage in scheme design, once further details regarding construction and operation are known.</p>

⁵¹ This concern is of relevance to people defined as disabled who have reduced breathing capacity as a consequence of their disability

⁵² Review of the UK Air Quality Index- a report by the Committee on the Medical Effects of Air Pollutants, COMEAP, 2011 (http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317137023144)

Table A3.7 - Sustainability theme: Socio-economic impacts

Key equality concern: access to employment
PPC Groups: people defined as disabled, BAME groups including refugees and asylum seekers, lone parent families, people living in the 20% most deprived areas
Issues and Evidence: Disabled people, BAME groups and lone parent families in particular experience much higher levels of unemployment than average. ⁵³ Transport schemes can potentially provide employment benefits to PPCs, particularly in areas where unemployment levels are high, through providing jobs (either directly during the construction and operational stages, or indirectly). Such schemes can also have adverse effects on employment amongst PPCs through the displacement of jobs associated with demolition of commercial, retail or industrial property, in cases where businesses are unable to relocate and retain all existing employees, or where people losing jobs are unable to take up employment created elsewhere as a result of the proposed scheme.
Potential for beneficial or adverse effects
<p><u>Western Leg</u></p> <p>Warburton Green/Manchester Airport High Speed Station catchment: 300-700 uplift in jobs associated with commercial development within the station catchment. The station catchment falls partly within the local authority of Manchester which represents a multi-cluster of Asian, Chinese, Black and mixed race jobseekers and partly within the local authority of Trafford which has particularly high proportions of Black and mixed race people. The proportion of people receiving ESA is slightly higher than for the local authority and region, in this catchment.</p> <p>West Gorton/Manchester Piccadilly and station catchment: approximately 50 commercial or retail properties and one industrial property demolished, with possible associated job displacement. Particularly large proportions of BAME groups in this area (Black African, Black Caribbean and Other Black Asian, Arab, mixed race, Indian, Pakistani, Bangladeshi and Chinese people), as well as a particularly high proportion of people receiving ESA (as defined in Figure 1).</p> <p>29,700-42,900 uplift in jobs associated with commercial development within the station catchment.⁵⁴ The station catchment falls entirely within the local authority of Manchester which represents a multi-cluster of Asian, Chinese, Black and mixed race jobseekers.</p> <p>Culcheth: approximately 15 commercial or retail properties and one industrial property demolished, with possible associated job displacement. Particularly large proportions of Black and mixed race people in this area.</p> <p><u>Eastern Leg</u></p> <p>Nuthall: approximately 10 commercial or retail properties demolished, with possible associated job displacement. Particularly large proportions of BAME groups in this area (Indian, Pakistani and Other Asian people).</p> <p>Catcliffe: approximately five commercial or retail properties demolished, with possible associated job displacement. Particularly large proportions of Pakistani, Bangladeshi, Other Asian, Black African and Arab people in this area. This area is also within the local authority of Sheffield which has particularly high levels of Asian jobseekers.</p> <p>Tinsley/Wincobank/Sheffield Meadowhall station catchment: approximately 30 commercial or retail demolitions, with possible associated job displacement. Particularly large proportions of Pakistani, Bangladeshi, Other Asian, Black Caribbean, Black African, Other Black, Arab and mixed race people in this area. 4,000-5,400 uplift in jobs associated with commercial development within the station catchment. The station catchment falls partly within the local authority of Sheffield which represents a multi-cluster of Asian, Chinese, Black and mixed race jobseekers. The proportion of people receiving ESA, and the proportion of lone parents, are both higher in this catchment than for the local</p>

⁵³ Review of evidence on the impact of economic downturn on disadvantaged groups, Department for Work and Pensions, Working Paper No 68 (2009) <http://research.dwp.gov.uk/asd/asd5/WP68.pdf>

⁵⁴ See the socio-economic assessment set out within **Appendix C** for further information relating to estimates of net increase in jobs relating to regeneration around stations

authority and region.

Central Leeds: approximately 20 commercial or retail properties and two industrial properties demolished, with possible associated job displacement. Particularly large proportions of BAME groups in this area (Indian, Pakistani, Bangladeshi, Chinese, Other Asian, Black African, Arab and mixed race people). 13,200-19,700 uplift in jobs associated with commercial development within the station catchment. The station catchment falls entirely within the local authority of Leeds which has a particularly high proportion of Black and mixed race jobseekers. There is a particularly high proportion of people receiving ESA in Central Leeds (Pottery Field). The proportion of people receiving ESA is slightly higher than for the local authority and region, in this catchment.

Up to 10,000 jobs are expected to be provided at the peak of construction of the proposed scheme. An estimated 1,500 permanent jobs will be generated during operation, related to the running of stations and staffing of trains.

Although there is expected to be a large net increase in jobs associated with the proposed scheme (both direct and indirect), there may be local loss of jobs associated with the demolition of commercial, retail or industrial property. Consideration will be given at a later stage to the ways in which new jobs will be made accessible to BAME jobseekers and disabled people seeking work, in particular any who may lose their existing jobs as a result of scheme construction.

Key equality concern: loss or impairment of BAME ownership/employee profile business activities

PPC Groups: BAME groups

Issues and Evidence: areas with large populations of BAME groups are likely to have relatively high proportions of BAME ownership/employee profile businesses in the local area. Transport schemes might have direct adverse effects on these businesses as a result of demolition (where business cannot be relocated in a way that maintains or enhances levels of business activity). There may also be indirect beneficial or adverse effects on trade through changes in the amenity value of surrounding land or change in customer base (either a reduction due to severance of businesses from their customer base, or an increase due to trade from construction workers or scheme users during the operational stage).

Potential for beneficial or adverse effects

Western Leg

Manchester Piccadilly/West Gorton: approximately 50 commercial or retail properties and one industrial property demolished. Particularly large proportions of BAME groups in this area (Black African, Black Caribbean and Other Black Asian, Arab, mixed race, Indian, Pakistani, Bangladeshi and Chinese people)

Culcheth: approximately 15 commercial or retail properties and one industrial property demolished. Particularly large proportions of Black and mixed race people in this area.

Eastern Leg

Nuthall: approximately 10 commercial or retail properties demolished. Particularly large proportions of Indian, Pakistani and Other Asian people in this area.

Catcliffe: approximately five commercial or retail properties demolished. Particularly large proportions of Pakistani, Bangladeshi, Other Asian, Black African and Arab people in this area.

Tinsley/Wincobank/Sheffield Meadowhall station catchment: approximately 30 commercial or retail demolitions. Particularly large proportions of Pakistani, Bangladeshi, Other Asian, Black Caribbean, Black African, Other Black, Arab and mixed race people in this area.

Central Leeds (Pottery Field): Cluster of approximately 20 commercial or retail properties and two industrial properties demolished. Particularly large proportions of BAME groups in this area (Indian, Pakistani, Bangladeshi, Chinese, Other Asian, Black African, Arab and mixed race people)

No likely permanent adverse effects on access to BAME ownership/employee profile businesses as a result of isolation or severance have been identified, since it is assumed that all access roads will be maintained. Temporary adverse effects may occur during construction however details of construction are not yet known so this would need to be considered at a later stage of scheme development. Impairment of business activities associated with changes in the amenity value of surrounding land would also need to be

assessed at a more detailed stage of scheme design.