A57 Link Roads
TR010034
6.3 Environmental Statement
Chapter 12 Population and Human Health

APFP Regulation 5(2)(a)

Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Infrastructure Planning

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A57 Link Roads

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6.3 ENVIRONMENTAL STATEMENT

CHAPTER 12 POPULATION AND HUMAN HEALTH

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12. Population and human health

12.1 Introduction

12.1.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) requires Environmental Statements to include, among other topics, assessment of potential effects upon population and human health, including potential impacts/effects on physical, mental, and social wellbeing.

12.1.2 This chapter assesses the potential impacts on population and human health from construction, operation and maintenance of the Scheme. It follows the requirements and methodology set out in Design Manual for Roads and Bridges (DMRB) LA 112 Population and Human Health'[1], and LA 104 Environmental Assessment and monitoring, using professional judgement, best practice and knowledge from the assessment of other highways schemes. This chapter summarises the regulatory and policy framework related to population and human health, details the methodology followed for the assessment and describes the existing environment in the area surrounding the Scheme. Following this, the design, mitigation and residual effects of the Scheme are presented.

12.2 Legislative and policy framework

12.2.1 National, regional and local policy relevant to the assessment is set out in Table 12.1. This has guided the design of the scheme, the decision-making process and allowed consideration of appropriate mitigation.

[redacted]

Table 12.1: Legislation, regulatory and policy framework for population and human health

Scale	Legislation	Summary of requirements
	National Networks National Policy Statement (NPS NN)	The Government's vision and strategic objectives for the national networks include improving overall quality of life, journey quality, reliability and safety and linking up communities. Junction improvement is cited as a measure which will be used to enhance the existing national road network towards this vision (Paragraph 2.23). The NPS NN establishes the expectation that delivery of new schemes will improve quality of life and avoid and mitigate environmental and social impacts in line with the principles set out in NPPF and the Government's planning guidance (Paragraph 3.3). Schemes will also be expected to improve accessibility and inclusivity and reduce community severance, to contribute to a network that provides a range of opportunities and choices for people to connect with jobs, services and friends and family (paragraph 3.19). Although it does not provide specific guidance for people and communities impacts, the NPS NN outlines the approach to land use which is of relevance to this assessment. Applicants should identify existing and proposed land uses, including best and most versatile agricultural land, near the Scheme and the likely effects on these (Paragraphs 5.165 and 5.168). It is acknowledged in the NPS NN that new or enhanced national networks infrastructure can have direct (paragraph 4.79) and indirect (paragraph 4.80) impacts on health, well-being and the quality of life of the population. It further states that (paragraph 4.81) where a proposed project has likely significant environmental impacts that would have an effect on human beings, any environmental statement should identify and set out the assessment of any likely significant adverse health impacts. And that the applicant should identify measures to avoid, reduce or compensate for adverse health impacts as appropriate (paragraph 4.82).
National	National Planning Policy Framework NPPF) 2019	The NPPF sets out Government's planning policies to achieve sustainable development under three overarching objectives, these are economic, social and environmental objectives. The economic objective aims to support a prosperous rural economy; planning should promote the sustainable growth and expansion of all types of businesses in rural areas, through: conversion of existing buildings and well-designed new buildings; the diversification of agricultural and land based rural businesses; sustainable rural tourism and leisure developments which respect the character of the countryside; and the retention and development of accessible local services and community facilities such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship (Paragraph 83). The social objective aims to support strong, vibrant and healthy communities (…) by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being. Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, considering both local business needs and wider opportunities for development. (Paragraph 80). Chapter 8 'Promoting Healthy and Safe Communities' communities sets that planning policies and decisions should aim to achieve healthy, inclusive and safe places which a) promote social interaction, including opportunities for meetings between people who

Scale	Legislation	Summary of requirements
		might not otherwise comes into contact with each other; b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion; and c) enable and support healthy lifestyles, especially where this would address identified local health and well-being needs. Planning should thus promote safe, accessible environments and to enhance the sustainability of communities and residential environments. There should be positive planning for the use of public areas and shared space, and protect valued facilities and services including open space, sports venues, public houses, places of worship and local established shops (Paragraph 91-93). Existing open space, sports and recreational buildings and land, including playing fields, should not be built on unless for specific conditions (Paragraph 97). Paragraph 98 states policies should protect and enhance public rights of way (PRoW) and access, Local authorities should seek opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails. The NPPF states that the system needs to be balances in favour of sustainable transport modes, where significant development should be focused on locations which are, or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. Chapter 9 'Promoting Sustainable Transport' emphasises how transport should be considered early within the context of planning decisions and sustainable development. This policy encourages solutions that seek to reduce congestion, greenhouse gas emissions and serve to facilitate the use of sustainable transport, transport technology options and parking and patterns of movement to be integrated into the design for the environmental and social benefits (paragraph 102). Furthermore, local planning authorities (LPAs) are required to identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development. Other sections of the NPPF that influence people and communities, are described below: NPPF11 Making effective use of land: safeguarding and improving he environmental and ensuring safe and healthy living conditions; and securing well-designed, attractive and healthy places. NPPF12 Achieving well-designed places: creating places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience. NPPF15 Conserving and enhancing the natural environment: ensuring that new development is appropriate for its location taking into account the likely effects of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development; and mitigating and reducing to a minimum potential adverse impacts resulting from new development – and avoid noise giving rise to significant adverse impacts on health and quality of life. NPPF17 Facilitating the sustainable use of minerals: sets out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on (…) human health.
	Countryside and Rights of Way Act 2000	The Countryside and Rights of Way Act 2000 (CRoW) regulates all Public Rights of Way (PRoW) and ensures access to them. It requires local highway authorities to publish a Rights of Way Improvements Plan (RoWIP), which should be reviewed every 10 years. The Act also obliges the highway authority to recognise the needs of the mobility impaired when undertaking improvements.

Scale	Legislation	Summary of requirements
	Road Investment Strategy (RIS) 2015 – 2020 and Strategic Business Plan	The RIS aims to improve connectivity, safety, air quality and road user satisfaction, boost the economy whilst reducing noise and negative environmental impacts all of which will have an impact on local communities and people. It also recognises the importance of the network accounting for the needs of walkers and cyclists, and not act as a deterrent to active travel options. The network must be easier to get over, under or around to ensure that roads do not divide communities, and that the associated health and wellbeing benefits of walking and cycling are felt as widely as possible.
	RIS2 2020 - 2025	RIS2 builds on the long-term strategic vision set out in previous RIS and details a stronger focus on the differing needs of road users and adoption of new working practices and technologies. It aims to ensure road users experience a smoother, more consistent journeys. By making the most of green infrastructure and good design, seeks to enable people to live alongside the network and experience less noise, light and air pollution.
	Health and Social Care Act 2012	This is a wide-ranging piece of legislation that places a duty of care to protect and improve public health on the Secretary of State for Health as well as other bodies directed by the Secretary of State for Health such as local authorities, including Directors of Public Health, and NHS (Sections 11. 12, 18, 22, 20, 31 and 60).
	Public Health Outcomes Framework	This sets out the national vision and targets for public health and how public health is being improved and protected. Key target indicators include: reducing killed and seriously injured casualties on England's roads; reducing percentage of the population affected by noise; increasing utilisation of outdoor space for exercise/health reasons; increasing proportion of physically active adults; reducing the fraction of mortality attributable to particulate air pollution; reducing mortality rate from causes considered preventable; and reducing numbers of 16-18-year olds not in education, employment or training.
	Public Health England (PHE) Strategy 2020 - 2025	The PHE Strategy aims to both protect and help people live longer in good health. The strategy focuses on reducing inequalities and improving outcomes so that by 2025 England is healthier, safer, fairer and stronger. The ten priorities are: 1. Smoke-free society 2. Healthier diets, healthier weight 3. Creating cleaner air 4. Better mental health 5. Best start in life 6. Effective responses to major incidents 7. Reduced risk from antimicrobial resistance 8. Predictive prevention 9. Enhanced data and surveillance capabilities 10. New national science campus

Scale	Legislation	Summary of requirements
Regional	Tameside Metropolitan Borough Council Rights of Way (2007)	The draft Rights of Way Improvement Plan (RoWIP) 2007 – 2016 is the constituent plan for the for the Countryside and Rights of Way Act 2000. This serves as a means for the local highway authority to identify improvements and management changes to be made to the local rights of way network in order to meet the Government's aim of better provision for walkers, cyclists, equestrians and people with mobility problems.
	Tameside Metropolitan Borough Council, High Peak Borough Council and Derbyshire County Council	A range of health and wellbeing strategies and public health documents relating to these Borough and County Council areas. This includes those relating to the Joint Strategic Needs Assessment for these areas.
	Greater Manchester Spatial Framework (GMSF) Publication Plan October 2020 (Draft)	The GMSF focuses on: a good start in life for everyone; good opportunities for our young people to equip them for life, good work and the best jobs in a valuable, productive, zero carbon economy; safe secure housing in inclusive and diverse communities; a good cultural and leisure offer for everyone; a green city-region; good health and support for people to live fulfilling lives, with quality care for those who need it; to be a good place to grow older and to be a place where everyone is connected – socially, digitally and by a clean, integrated and accessible transport system. Note that the GMSF is no longer being progressed.
	Derbyshire County Council Rights of Way (2013)	The Rights of Way Improvement Plan (RoWIP) 2013 – 2017 Statement of Action is the constituent plan for the for the Countryside and Rights of Way Act 2000. This serves as a means for the local highway authority to identify improvements and management changes to be made to the local rights of way network in order to meet the Government's aim of better provision for walkers, cyclists, equestrians and people with mobility problems.

Scale	Legislation	Summary of requirements
	Derbyshire County Council, Health and Wellbeing Strategy, 2018 - 2023	Health and Wellbeing Strategy sets out 5 priorities for improving health and wellbeing across Derbyshire, focusing on action to address the wider determinants of health. The 5 priorities are: • Enable people in Derbyshire to live healthy lives. • Work to lower levels of air pollution. • Build mental health and wellbeing across the life course. • Support our vulnerable populations to live in well-planned and healthy homes. • Strengthen opportunities for quality employment and lifelong learning. Addressing these priorities will help us work to achieve our overarching outcomes for Derbyshire: increased healthy life expectancy, reduced differences in life expectancy and healthy life expectancy between communities.
	Tameside Metropolitan Borough Council, Health and Wellbeing Strategy 2013 - 2016	This is the first Joint Health and Wellbeing Strategy for Tameside and set out the overarching plan through which the public, private, community and voluntary sectors, as well as residents themselves, were anticipated to work together to improve the health and wellbeing for and with local people.
	Tameside Unitary Development Plan (2004)	Tameside is preparing a new Local Plan which will be the main land use planning document for the Borough. The Local Plan will replace the Councils currently adopted Unitary Development Plan, adopted in 2004 and will incorporate the strategic policies and allocations as they evolve in the draft Greater Manchester Spatial Framework (GMSF). The following policies of Unitary Development Plan for Tameside Metropolitan Borough Council are of relevance to the considerations for Population and Human Health: 1.1 Capturing Quality Jobs for Tameside People 1.2 Maintaining an Integrated Transportation Strategy 1.3 Creating a Cleaner and Greener Environment 1.4 Providing More Choice and Quality of Homes 1.5 Following the Principles of Sustainable Development 1.6 Securing Urban Regeneration 1.7 Supporting the Roles of Town Centres 1.8 Retaining and improving opportunities for sport, recreation and leisure

Scale	Legislation	Summary of requirements
		1.9 Maintaining Local Access to Employment and Services 1.10 Protecting and Enhancing the Natural Environment 1.11 Conserving Built Heritage and Retaining Local Identity 1.12 Ensuring an Accessible, Safe and Healthy Environment 1.13 Meeting Obligations on Minerals, Waste and Energy
	One Equality Scheme 2018 - 2022	The Scheme sets out how Tameside Metropolitan Borough Council strive to reduce the impact of inequality and to improve the lives of the most vulnerable members of the community by: 1. Reducing inequality and improving outcomes 2. Meeting obligations under the Equality Act 2010 3. Equality training, development and awareness 4. Consultation and engagement 5. Understanding service use and access.
	High Peak Local Plan (2016)	The following strategic objectives policies of High Peak Local Plan are of relevance to the considerations for Population and Human Health: Policy S1: Sustainable Development Policy Policy S3: Strategic Housing Development Policy S4: Maintaining and Enhancing an Economic Base Policy EQ2 Landscape Character Policy EQ3 Rural Development Policy EQ10 Pollution Control and Unstable Land Policy E1 New Employment Development Policy E2 Employment Land Allocations Policy E3 Primary Employment Zones Policy H1 Location of Housing Development Policy CF3 Local Infrastructure Provision Policy CF4 Open Space, Sports and Recreation Facilities Policy CF5 Provision and Retention of Local Community Services and Facilities Policy CF6 Accessibility and Transport

12.3 Assessment methodology

Scoping opinion

12.3.1 An overview of the Planning Inspectorate's Scoping Opinion on the proposed scope of the population and human health assessment is provided in Appendix 4.1 (TR010034/APP/6.5).

12.3.2 Any additional consultation responses or changes to assessment methodology due to the latest DMRB standards or design changes are also detailed in Appendix 4.4 (TR010034/APP/6.5).

12.3.3 It should be noted that, when the Environmental Scoping Report (ESR) was produced prior to DMRB LA 112 being published and there was no formal methodology for the Population and Human Health assessment at the time. The ESR scoped in a 'People and communities' assessment, in accordance with DMRB, Volume 11, Section 3, Part 8, which was adapted to include consideration of health. In accordance with DMRB LA 112, the 'People and communities' chapter has been superseded with this Population and human health technical chapter.

Assessment approach

12.3.4 The assessment has considered the requirements of the EIA Regulations 2017 and general guidance documents including the Guidelines for Environmental Impact Assessment, published by the Institute of Environmental Management and Assessment (IEMA).

12.3.5 The assessment follows the requirements and methodology set out in DMRB LA 112, which provides a framework for assessing, mitigating and reporting the effects of highways projects on population and human health.

12.3.6 The assessment establishes the baseline population and human health conditions within the areas likely to be affected by the Scheme. The assessment then ascertains the likely positive and negative effects of the construction, operation and maintenance of the Scheme, and opportunities for improving health and reducing inequalities.

Identification of study area

12.3.7 As noted by DMRB LA 112, in terms of Land Use and Accessibility, there is a requirement for the study area to be based on the construction footprint / project boundary (including compounds and temporary land take) plus a 500m area surrounding the project boundary. This area was identified using a Geographical Information System (GIS) and applicable mapping of the project boundary.

12.3.8 In relation to Human Health, DMRB LA 112 notes that the study area shall be defined based on the extent and characteristics of the project and the communities / wards directly and indirectly affected by the project. Therefore, in respect of Human Health, consideration was made of the population of a wider study area used to define the characteristics of population and human health and health inequalities, including the area within which the local and regional National Health Service (NHS) organisations operate. Consideration was also made of both Tameside and High Peak Local Authority areas as a whole (including for example Public Health England Local Authority Profiles and data sourced from Joint Strategic Needs Assessments), as well as through consideration of applicable Ward level data, in addition to information at Lower Super Output Area (LSOA) . Note that consideration was also made of the study areas defined in specialist topics such as air quality.

12.3.9 As such, by using these DMRB LA 112 study area requirements, along with professional judgement, industry best practice and knowledge from other transportation schemes, it is considered that these study areas will capture any significant population and human health effects resulting from the Scheme, including those on physical and mental health and social wellbeing.

Land use and Accessibility

Sensitivity of Receptors

12.3.10 Using DMRB LA 112, the sensitivity of land use and accessibility receptors (i.e. private property and housing, community land and assets, development land and businesses, agricultural land holdings, and walkers, cyclists and horse-riders) is determined by their location within the study area, proximity to the Scheme, characteristics and capacity to cope with change. This sensitivity criteria are set out in more detail in Table 12.2 below.

Table 12.2: Environmental value (sensitivity) and descriptions

Receptor Value (sensitivity)	Description
Very high	**Private property and housing**: 1) Existing private property or land allocated for housing located in a local authority area where the number of households are expected to increase by >25% by 2041 (ONS data); and/or Existing housing and land allocated for housing (e.g. strategic housing sites) covering >5ha and / or >150 houses
	Community land and assets where there is a combination of the following: 1) Complete severance between communities and their land/assets, with little/no accessibility provision; 2) Alternatives are only available outside the local planning authority area; 3) The level of use is very frequent (daily); and 4) The land and assets are used by the majority (>=50%) of the community

Receptor Value (sensitivity)	Description
	Development land and businesses: 1) Existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >5h
	Agricultural land holdings: 1) Areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a frequent basis (daily)
	Walkers, cyclists and horse-riders (WCH): 1) National trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient WCH route. Little/no potential for substitution. 2) Routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. 3) Rights of way for WCH crossing roads at grade with >16,000 vehicles per day.
High	**Private property and housing** 1) Private property or land allocated for housing located in a local planning authority area where the number of households are expected to increase by 16-25% by 2041 (ONS data); and/or 2) Existing housing and land allocated for housing (e.g. strategic housing sites) covering >1-5ha and/or >30-150 houses
	Community land and assets where there is a combination of the following: 1) There is substantial severance between community and assets, with limited accessibility provision; 2) Alternative facilities are only available in the wider local planning authority area; 3) The level of use is frequent (weekly); and 4) The land and assets are used by the majority (>=50%) of the community.
	Development land and businesses: 1) Existing employment sites (excluding agriculture) and land allocated for employment (e.g. strategic employment sites) covering >1 -5ha.
	Agricultural land holdings: 1) Areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a frequent basis (weekly).

Receptor Value (sensitivity)	Description
	WCH: 1) Regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution; and/or 2) Rights of way for WCH crossing roads at grade with >8,000 - 16,000 vehicles per day.
Medium	**Private property and housing**: 1) Houses or land allocated for housing located in a local authority area where the number of households are expected to increase by >6-15%by 2041 (ONS data); and/or 2) Existing housing and land allocated for housing (e.g. strategic housing sites) covering <1ha and / or <30 houses
	Community land and assets where there is a combination of the following: 1) There is severance between communities and their land/assets but with existing accessibility provision; 2) Limited alternative facilities are available at a local level within adjacent communities; 3) The level of use is reasonably frequent (monthly); and 4) The land and assets are used by the majority (>50%) of the community.
	Development land and businesses: 1) Existing employment sites (excluding agriculture) and land allocated for employment (e.g., strategic employment sites) covering >1ha
	Agricultural land holdings 1) Areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly)
	WCH 1) Public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys, and / or 2) Rights of way for WCH crossing roads at grade with >4000 – 8000 vehicles per day.
Low	**Private property and housing:** 1) Proposed development on unallocated sites providing housing with planning permission/in the planning process.

Receptor Value (sensitivity)	Description
	Community land and assets where there is a combination of the following: 1) Limited existing severance between community and assets, with existing full Disability Discrimination Act (DDA) (Ref 2.N)[2] compliant accessibility provision; 2) Alternative facilities are available at a local level with the wider community; 3) The level of use is infrequent (monthly or less frequent); and 4) The land and assets are used by the minority (>=50%) of the community.
	Development land and businesses: 1) Proposed development on unallocated sites providing employment with planning permission/in the planning process.
	Agricultural land holdings: 1) Areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent)
	WCH 1) Routes which have fallen into disuse through past severance or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes, and/or 2) Rights of way for WCH crossing roads at grade with <4000 vehicles per day.
Negligible	**Private property and housing:** 1) N/A
	Community land and assets where there is a combination of the following: 1) No or limited severance or accessibility issues; 2) Alternative facilities are available within the same community; 3) The level of use is very infrequent (a few occasions yearly); and 4) The land and assets are used by the minority (>=50%) of the community;
	Development land and businesses: 1) N/A
	Agricultural land holdings: 1) Areas of land which are infrequently used on a non-commercial basis 2) Previously developed formerly in 'hard-uses' with little potential to return to agriculture.
	WCH: N/A

Table Source: DMRB LA 112

[2] This has been repealed and replaced by the Equality Act 2010 (except in Northern Ireland)

Magnitude of Impact

12.3.11 Identifying and assessing the likely impacts of the Scheme (both beneficial and adverse) depends on the sensitivity of the receptors to changes to the baseline conditions.

12.3.12 In accordance with DMRB LA 112, the magnitude of any change to the baseline conditions will be reported according to the criteria set out in Table 12.3, with bespoke criteria added by a competent expert for agricultural holdings to help aid understanding of this aspect.

Table 12.3: Magnitude of impact criteria

Magnitude of impact (change)	Description
Major	**Private property and housing, community land and assets, development land and businesses:** Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements e.g. direct acquisition and demolition of buildings and direct development of land to accommodate development; and/or Introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. **Agricultural holdings** Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements e.g. direct acquisition and demolition of buildings and direct development of land to accommodate development; and/or Introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. *The identified impacts are predicted result in very severe damage to a farm business or rural land-based enterprise and may compromise its viability.* **WCH** • >500m increase (adverse) / decrease (beneficial) in WCH journey
Moderate	**Private property and housing, community land and assets, development land and businesses:** Partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or Introduction (adverse) or decrease (beneficial) of severe severance with limited/moderate accessibility provision. **Agricultural holdings** Partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or

Magnitude of impact (change)	Description
	Introduction (adverse) or decrease (beneficial) of severe severance with limited/moderate accessibility provision. *The identified impacts are predicted to result in severe damage to a farm business or rural land-based enterprise, but with changes to management it should remain viable.* **WCH:** • >250m – 500m increase (adverse) or decrease (beneficial) in WCH journey length
Minor	**Private property and housing, community land and assets, development land and businesses** A discernible change in attributes, quality or vulnerability; minor loss of, or alteration to one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property businesses, community assets or agricultural holdings; and/or Introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. **Agricultural holdings** A discernible change in attributes, quality or vulnerability; minor loss of, or alteration to one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property businesses, community assets or agricultural holdings; and/or Introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. *The identified impacts are predicted to result in some damage to a farm business or rural land-based enterprise, but with minor changes to management it should continue as before.* **WCH** • >50m – 250m increase (adverse) or decrease (beneficial) in WCH journey length
Negligible	**Private property and housing, community land and assets, development land businesses** Very minor loss or detrimental alteration to one or more characteristics, features or elements, e.g. acquisition of non-operational land or buildings nor directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or Very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. **Agricultural holdings** Very minor loss or detrimental alteration to one or more characteristics, features or elements, e.g. acquisition of non-operational land or buildings nor directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or

Magnitude of impact (change)	Description
	Very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. *The identified impacts are predicted to result in little or no damage to a farm business or rural land-based enterprise.* **WCH** • <50m increase (adverse) or decrease (beneficial) in WCH journey length
No change	• No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction

Table Source: DMRB LA 112 Note text in italics denotes additional clarifications developed by agricultural specialist.

12.3.13 As noted in DMRB LA 112, the significance of effect shall be derived by combining the assigned value (sensitivity) of receptors with the magnitude of change arising from a project, in accordance with the following table from DMRB LA104.

Table 12.4: Significance of effect

Environmental value (sensitivity)	Magnitude of impact (degree of change)				
	No change	Negligible	Minor	Moderate	Major
Very high	Neutral	Slight	Moderate or large	Large or very large	Very large
High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

Table Source: DMRB LA 104

12.3.14 The significance of effect shall be determined for each element of the land and accessibility sub-topic affected by the project and the following descriptors given:

Table 12.5: Significance of Effects Descriptors

Significance	Descriptors
Very large	Effects at this level are material in the decision-making process.
Large	Effects at this level are likely to be material in the decision-making process.
Moderate	Effects at this level can be considered to be material in the decision-making factors.
Slight	Effects at this level are not material in the decision-making process.
Neutral	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

Table Source: DMRB LA 104

12.3.15 Using the described significance of effect matrix classification in Table 12-5, professional judgement, industry best practice and knowledge from the assessment of other transportation schemes, any significance of effects of the Scheme considered to be Very Large, Large or Moderate are deemed to be **significant** and those Slight or Neutral, to be **not significant**.

12.3.16 Land use effects are assessed for the construction period and for the first year of operation (future year scenario).

Human health

12.3.17 As per DMRB LA 112, there is a need to establish baseline health profiles of the communities of the study area and it is noted that this shall include the following data:

- Percentage of community with increased susceptibility to health issues (vulnerable members, e.g. <16 & >65)
- Percentage of community with pre-existing health issues (e.g. respiratory disease/chronic obstructive pulmonary disease (COPD))
- Deaths from respiratory diseases
- Percentage of community with long term illness or disability
- General health
- Life expectancy
- Income deprivation

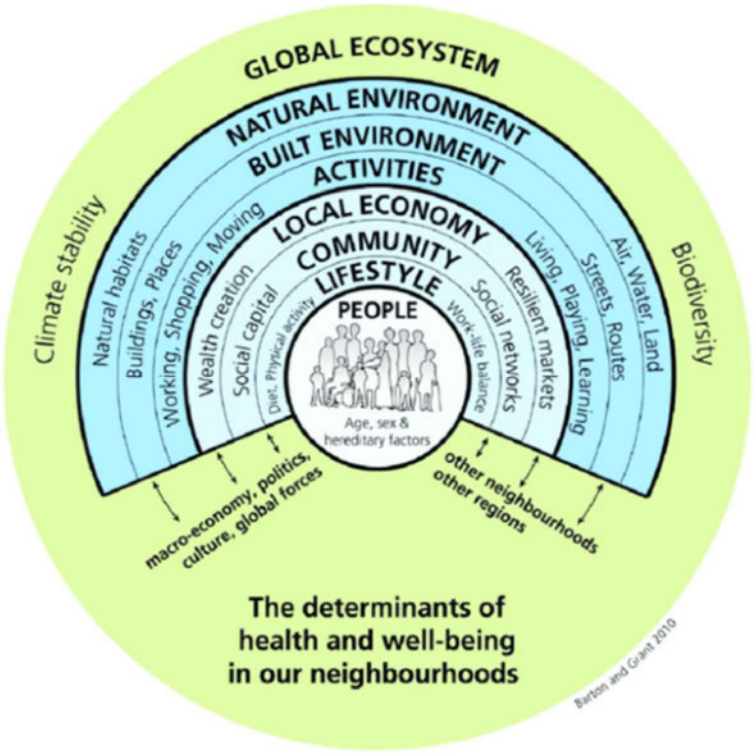
12.3.18 Baseline data which contains the above noted information (along with a range of other health and wellbeing indicators) for the study area is contained with Section 12.6.

12.3.19 DMRB LA 112 also notes the requirement to identify health determinants. Wider health determinants are a diverse range of social, economic and environmental factors which influence people's mental and physical health and social wellbeing.

12.3.20 DMRB LA 112 provides a range of indicative types of health determinants:

- The location and type of community, recreational and education facilities and severance/separation of communities from such facilities
- The location of green/open space and severance/separation of communities from such facilities
- The location of healthcare facilities and severance/separation of communities from such facilities
- Outline spatial characteristics of the transport network and usage in the area, including the surrounding road network, Public Rights of Way (including bridleways), cycle ways, non-designated public routes and public transport routes
- Air quality management areas and ambient air quality
- Areas recognised as being sensitive to noise (e.g. noise important areas, noise management areas) and the ambient noise environment
- Sources and pathways of potential pollution (e.g. land/water contamination)
- Landscape amenity
- Safety information associated with the existing affected road network (e.g. numbers of killed and seriously injured).

12.3.21 DMRB LA 112 also notes that where available, information collated from stakeholders consultation should also be used. In this instance, liaison with bodies such as Public Health England raised a number of health and wellbeing issues that it was considered important to address e.g. in relation to loss of housing. Therefore, in addition to those indicative health determinants noted within DMRB LA 112, it was considered precautionary to examine a wider range of health determinants considered relevant to the scheme. IEMA guidance on wider health determinants, along with the Barton and Grants 'Determinants of Health' mode (shown in Insert 12.1 below), was used to identify wider environmental, social and economic aspects considered relevant to the Scheme.



Insert 12-1 Determinants of health model

(Source: Barton and Grant 2010)

12.3.22 By including both the DMRB LA 112 indicative health determinants and the wider range of health determinants noted through IEMA guidance, etc., it was possible to identify the full range of health determinants to be examined in relation to this Scheme. These are as follows:

Table 12.6: Health receptor sensitivity to health determinants

Aspect	Wider health determinants noted in LA 112 and IEMA
Natural environment	**Air pollution** – to include air quality management areas and ambient air quality **Soil and water pollution**– to include areas of contamination and known sources and pathways
Built environment	**Risk of injuries and death** – to include safety information associated with the existing affected road network (numbers killed and seriously injured)
Activities	**Housing** **Transport options** and outline spatial characteristics of the transport network and usage in the area and including road network and public transport routes **Active travel** to include PRoW, bridleways, cycleways, non-designated public routes
Landscape	**Landscape amenity**
Local economy	Work and training to include **Development land and business**

Community	Location and type of **Education, healthcare services and other community facilities** and to include severance / separation from such facilities Location and type of **Open space, recreation and leisure-time activities** and to include severance / separation from such facilities Social cohesion and lifetime neighbourhoods
Lifestyle	**Noise pollution and vibration** – to include noise important areas and noise management areas and ambient noise environment

Table Source: Derived from DMRB LA 112 and IEMA Guidance

12.3.23 Note that within the above table, the text marked in bold denotes the headings used in this Report, with the additional text provided for clarity to show the issues addressed within. All aspects of the indicative health determinants provided within DMRB LA 112 have been included within this assessment approach.

Sensitivity of Receptors

12.3.24 As noted in DMRB LA 112, there is a need to identify the health profile of affected communities, identifying vulnerable groups / communities. This also reflects IEMA guidance for assessing health impacts in EIA, that recommends that specific attention should be paid to impacts on vulnerable groups. These groups are likely to be more susceptible to the changes to health determinants than other social groups and are defined by their age, health status and income. Identification of vulnerable groups has been made through examining relevant plans and policies in respect of the study area to identify key health and wellbeing issues, but also through examining the baseline data gathered for the study area and consideration of the nature of the scheme. The identification of the vulnerable groups is reported in Table 12.12 with these groups carefully considered in the assessment. It is important to note that vulnerable groups identified are not mutually exclusive; an individual may fit into one or more of these categories.

12.3.25 DMRB LA 112 notes that once the health profile of communities has been established, the sensitivity of a community / population to change shall be identified and supported with evidence. The sensitivity of a community / population shall be reported as:

- Low
- Medium
- High

12.3.26 The sensitivity of an individual or population sub-group encompasses their ability to withstand exposures and the range of associated impacts or effects, and the physiological (e.g. co-morbidities or disabilities) and socio-economic factors that increase their susceptibility to the exposure. The following table notes the wider and vulnerable groups sensitivity to health determinants – please see also Table 12.13 for the rationale behind the determination of sensitivity in respect of this Scheme.

Table 12.7: Health receptor sensitivity to health determinants

Community / Population within study area	Determinant and sensitivity
Wider groups within Longdendale, Hadfield South and Hadfield North	Air Pollution – High Soil and water pollution – Medium Risk of injuries and death - Medium Housing - Medium Access to community land and assets - Medium Transport options - Medium Active travel - Medium Work and training - Low Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration - High
Children and adolescent within Longdendale, Hadfield South and Hadfield North	Air pollution - Very High Soil and water pollution - High Risk of injuries and death - High Housing - High Access to community land and assets - High Transport options - Medium Active travel - Medium Work and training - Low Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration - High
Older people within Longdendale, Hadfield South and Hadfield North	Air pollution - High Soil and water pollution - Medium Risk of injuries and death - High Housing - High Access to community land and assets - High Transport options - High Active travel - Medium Work and training - Low Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration - High
People who are disabled and/or with other health problems within Longdendale, Hadfield South and Hadfield North	Air pollution - High Soil and water pollution - High Risk of injuries and death - Medium Housing - High Access to community land and assets - High Transport options - High Active travel - Medium Work and training - Medium Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration – High
Low-income groups within Longdendale, Hadfield South and Hadfield North	Air pollution – High Soil and water pollution - Medium Risk of injuries and death - Medium Housing - High Access to community land and assets - High

Community / Population within study area	Determinant and sensitivity
	Transport options - High Active travel - Medium Work and training - High Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration - High
Ethnic minority groups within Longdendale, Hadfield South and Hadfield North	Air Pollution – High Soil and water pollution – Medium Risk of injuries and death - Medium Housing - Medium Access to community land and assets - High Transport options - Medium Active travel - Medium Work and training - Low Social cohesion and lifetime neighbourhoods - Medium Noise pollution and vibration - High

Table Source: Adapted from Table 3.2N Environmental value (sensitivity) and descriptions in DMRB LA 104

12.3.27 In accordance with DMRB LA 112, in relation to the human health elements, the assessment does not assign a significance to effects, rather it utilises a qualitative approach to identify changes to health determinants as a result of the Scheme, with evidence provided to support conclusions. The identification of Health Outcomes has been determined by using the results of specialist technical assessments on aspects such as air quality, professional judgement, best practice and knowledge from the assessment of other highways schemes and are set out in Table 12.8 below.

Table 12.8: Health Outcome Category

Health Outcome Category	Descriptors
Positive	A beneficial health impact is identified
Neutral	No discernible health impact is identified
Negative	An adverse health impact is identified
Uncertain	Where uncertainty exists as to the overall health impact

Table Source: DMRB LA 112

12.3.28 Note that health effects have been assessed during construction and up to year 15 of operation (future year scenario).

Consultation

12.3.29 Details of consultation undertaken to inform this assessment are presented in the Introduction chapter (Chapter 1) and the Consultation Report (application document TR010034/APP/5.1).

12.3.30 A number of consultees were contacted to comment on the scope and methodology required for the assessment. These consultees included Tameside Metropolitan Borough Council (MBC), High Peak Borough Council and Public Health England. Full details of the consultation process that has been undertaken in respect to the Scheme is provided in the Consultation Report (application document TR010034/APP/5.1).

12.3.31 Agricultural landowners and lifetime tenants were given a questionnaire asking for particulars of their farms relevant to the assessment of the Scheme impacts. These were sent out between the 7th and 15th October 2020. Full details of the consultation process that has been undertaken across the wider community are detailed within the Consultation Report (application document TR010034/APP/5.1).

12.3.32 Specific consultation also took place with a range of bodies concerned with Walking, Cycling and Horse Riding, for example, Sustrans and the TransPennine Trail Partnership as well as a range of local schools. This is detailed in the Walking, Cycling and Horse Riding assessment report and responses made have been considered in this assessment.

12.3.33 Two consultation meetings with Public Health England (PHE) were held to discuss and agree the assessment methodology approach. One meeting was during the statutory consultation period (Teams call, 7th December 2021) and the other was a follow-up call (Teams call, 9th April 2021).

12.4 Assessment assumptions and limitations

12.4.1 It has been assumed during the assessment that the Scheme description detailed within Chapter 2: The Scheme, will be constructed. This has taken into account the lateral and vertical limits of deviation defined on the Works Plan (TR010034/APP/2.3) in order to establish a realistic worst-case assessment scenario, taking into account the potential for the Scheme to impact land use and access (WCH, residential and commercial properties, community facilities and agricultural land holdings) and human health through the development of the Scheme.

12.4.2 Nevertheless, it is also anticipated that notwithstanding any potential deviation, all population and human health mitigation measures embedded in the design of the Scheme would still be deliverable within the limits of deviation (refer to Chapter 2: The Scheme) and would still fulfil their intended function.

12.4.3 It is to be noted that much of the public health information available is based on Census 2011 results. A new Census has been carried out in 2021 however results are not yet available. It is considered that this information is still relevant, and consideration was also made of more up to date strategies and health and wellbeing information, where available.

12.4.4 As of December 2020, the Greater Manchester Spatial Framework (GMSF) is no longer being progressed however, potential site allocations and other development opportunities were still considered as it is likely that these could be progressed in any subsequent Plan.

12.4.5 The impact of COVID-19 on public health and wellbeing is still uncertain and will remain so for some time.

12.4.6 Information on the location of field drains and water supplies is not available at this stage. The assumption is that the agricultural liaison officer appointed by the appointed Principal Contractor will identify these before construction begins so that they can be replaced or diverted.

12.4.7 Land is required for the Scheme – the Scheme's temporary and permanent land take requirements have been identified through the preliminary design, consultation and through engagement with landowners that would be affected by its progression. These are defined by the Order Limits within the DCO application and are illustrated on the Land plans.

12.4.8 The Scheme's temporary and permanent land take requirements have been identified through the preliminary design, consultation and through engagement with landowners that would be affected by its progression. These are defined by the Order Limits within the DCO application and are illustrated on the Land Plans (TR010034/APP/2.2). For the Scheme approximately 41.9 ha would be required permanently, and 12.9 ha would be subject to temporary possession with use of land and 7.4 ha will be permanent acquisition of rights over land.

12.4.9 Although the Applicant is endeavouring to acquire land by agreement, the necessary rights to gain the land required to deliver the Scheme are being sought by the Applicant through the DCO application and accompanying compulsory purchase process, to ensure that the Scheme can be delivered effectively.

12.5 Study area

12.5.1 As noted by DMRB LA 112, in terms of Land Use and Accessibility, there is a requirement for the study area to be based on the construction footprint / project boundary (including compounds and temporary land take) plus a 500m area surrounding the project boundary. Where likely effects are identified outside the 500m area surrounding the project boundary, the study area should be extended accordingly. Where effects are unlikely to occur within the 500m area surrounding the project boundary, the study area should be reduced accordingly. Therefore, in respect of Land Use and Accessibility, the study area extends 500m from the DCO Boundary. Within this area, the level of potential disruption effects to Land Use and Accessibility will generally be considered on the basis that the closer the proposed works occur to sensitive receptors (for example, for Housing), the more mitigation may be required (e.g. close to the proposed works or directly affected, as opposed to 500m away). However, impacts from changes to some receptors the potential to result in effects that could extend further or beyond the core study area and this has also been considered in the assessment.

12.5.2 In relation to Human Health, DMRB LA 112 notes that the study area shall be defined based on the extent and characteristics of the project and the communities / wards directly and indirectly affected by the project. Therefore, in respect of Human Health, consideration was made of the population of a wider study area used to define the characteristics of population and human health and health inequalities, including the area within which the local and regional National Health Service (NHS) organisations operate. Consideration was also made of both Tameside and High Peak Local Authority areas as a whole (including for example Public Health England Local Authority Profiles and data sourced from Joint Strategic Needs Assessments), as well as through consideration of applicable Ward level data, in addition to information at Lower Super Output Area (LSOA) .

12.5.3 As such, by using these DMRB LA 112 study area requirements, along with professional judgement, industry best practice and knowledge from other transportation schemes, it is considered that these study areas will capture any significant population and human health effects resulting from the Scheme, including those on physical and mental health and social wellbeing.

12.5.4 The study areas defined in the assessment methodology sections for each of the respective technical chapters will also apply. These study areas are as follows:

- Air quality (Chapter 5) – for human health receptors, within a 350 m buffer from the Scheme boundary; or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance
- Noise and vibration (Chapter 8) – 300 m for construction activity noise and 100 m for construction activity vibration. 25 m around diversionary routes and 50 m for construction traffic. Operationally a 600 m for road traffic noise and identified noise sensitive receptors outside the 600 m buffer

- Water environment (Chapter 11) – within a 1 km buffer around the Scheme boundary
- Geology, soils and land contamination (Chapter 12) – within a 250 m buffer around the Scheme boundary.

12.6 Baseline conditions

12.6.1 As noted, baseline conditions have been established through a desk-based study and consultation with landowners and the wider community. Information (including through site surveys such as that carried out for WCH and PRoWs Alternatives Assessment) was also gathered by relevant specialists as part of their survey work and this was used to inform this assessment where appropriate. Note that restrictions due to COVID-19 pandemic restricted potential for a full range of surveys to be carried out, though it was considered that these were unnecessary as the direct impact on sensitive receptors by the proposed route is limited and information was available from public data to ascertain typical usage and sensitivity of the receptors across the study area. Those direct receptors impacted were subject to agricultural investigation, or further clarification on access and usage was sought (for example in relation to the former Cricket Ground and the Mottram showground).

12.6.2 A range of data sources were also used, including Public Health England Health Profiles and other online sources of information such as Joint Strategic Needs Assessments (JSNA). In addition, Ordnance Survey and Bing mapping (various scales), as well as Multi-Agency Geographic Information for the Countryside (MAGIC) maps, aerial photography available in the public domain and Google Streetview were also used. These were used to help identify land use relationship, community land and facilities.

Land use and access

Private property and housing

12.6.3 Private property and housing are defined as *"land, buildings and infrastructure for the purpose of residential use"*. There a few settlements of note located in and around the study areas. These settlements include Hattersley, Mottram in Longendale, Hollingworth, Hadfield and Gamesley. Several residential property and associated land are located within the Draft Order Limits. The location and number of properties at risk of demolition, or from which land will be required/accessed affected by the Scheme are listed in Section 12.7.

12.6.4 Current traffic flows on the existing A57/Mottram Moor through Mottram result in congestion on this route. For properties accessed directly off the existing A57 in Mottram Moor these traffic flows and resulting congestion can make it difficult for residents to enter and exit their driveways safely during peak flows.

12.6.5 Private property and housing that have been identified within 500m of the Scheme are shown on Figure 12.1 Community Facilities and Commercial Assets (TR010034/APP/6.4) and are reported below as Table 12-9.

12.6.6 The emerging Greater Manchester Spatial Framework (GMSF 2020)[3] included a number of draft allocations for residential and employment land uses. GMSF 2020 was being produced following extensive consultation with stakeholders. Four consultations have already taken place. The first, in November 2014 was on the scope of the plan, the second in November 2015, was on the vision, strategy and strategic growth options, and the third, on a Draft Plan in October 2016 and the most recent consultation in 2019 which informed the development of GMSF 2020. However, it is now understood that the GMSF will no longer be progressed.[4] Whilst the GMSF is not being progressed, it is known that Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan councils will all be asked to agree to form a joint committee to prepare Places for Everyone - a joint development plan for jobs, new homes and sustainable growth across their boroughs. As such, it was considered prudent to continue to note allocations that were in the process of being made through the GMSF as there is a chance that these allocations could be made in later plans.

12.6.7 The now-abandoned Greater Manchester Spatial Framework (GMSF) proposed 2,790 homes in Tameside, this included the Godley Green development. However, it is understood that Tameside is progressing a planning application for Godley Green independently of work on any Greater Manchester plan, and a public consultation exercise on the proposals took place between February and March 2021. It should be noted that these allocations have not been made and may be subject to change.

12.6.8 High Peak Local Plan Allocations 'Land off Melandra Castle Road (G25) and Roughfields Hadfield (G3)'[5] will be allocated for residential dwellings. Allocation G25 is located 1km south of the Scheme will be allocated for 35 dwellings. Allocation G3 is located 1.6km east of the Scheme.

Community land and assets

12.6.9 The settlements of Mottram in Longdendale, Hollingworth, Hattersley, Gamesley and Hadfield include a variety of social and community infrastructure, including education and healthcare facilities, community centres, places of worship, libraries and sporting facilities. Facilities that have been identified within 500m of the Scheme are shown on Figure 12.1 and are reported below as Table 12-9. Cricket grounds (unnamed) were identified within the DCO boundary, but further clarification was sought and it is understood that these have been disused in excess of 15 years. Community facilities not within the DCO boundary but within the wider study area include Arundale Primary School (206 pupils), Hollingworth Primary School (210 pupils), Mottram Evangelical Church and the Awburn House Medical Practice (open 8am to 6.30pm Monday to Friday) and usage of these and other facilities in the area is considered to be as would be expected on a daily/weekly and monthly basis.

[redacted]

Development land and businesses

12.6.10 A number of commercial assets have been identified within and towards the east of the Scheme, including units at Roe Cross Industrial Estate (within the scheme boundary) and enterprises within Dinting Lodge Industrial Estate, Glossop Caravans and a BP Petrol Station (outside the scheme boundary). These have been summarised with other receptors identified in the wider study area, as Table 12.9. Of note the units at Roe Cross Industrial estate are relatively small (covering a site less than 1 ha in size) and this combined with the nature of the businesses means that absolute numbers of employees are anticipated to be low. It is anticipated that these businesses, as with others in the wider area, would be accessed on an ongoing and daily basis but would also be currently impacted in terms of accessibility by existing traffic congestion in the wider area.

12.6.11 The Mottram Agricultural Showground is located within the DCO boundary to the north of the Scheme. The Mottram Show, held by the Mottram and District Agricultural Society, takes places annually every summer and attracts thousands of visitors every year for a whole range of classes for sheep, cattle, dogs and horticulture, plus other activities including horse competitions, trade stands, craft and vintage engine displays.

12.6.12 The Mottram Show has acquired a new larger showground, to which it will be relocating within the next few years. Whilst further discussions will be required with the organisers of the show, it is anticipated that the new location of the showground will be adjacent the A560 and Apple Street. It is considered unlikely to be affected by the Scheme as it is approximately 1.3km south-west of the Scheme. This would be subject to confirmation, however the new location has been included in the baseline for the purposes of this assessment.

Table 12.9: Receptors within study area

Receptor	Within DCO boundary (count)	Within 250m of DCO boundary (count)	250m – 500m of DCO boundary (count)	Total within study area (count)
Residential Properties	30	2223	2013	4266
Community Facility	3 - Park - Undesignated open space - Cricket Grounds	17 including - Community services centres / offices at 'The Hub' - Playgrounds - Allotment Gardens - Police Station - Waste Management Services - Amusements - Public Parks / Gardens - Leisure Centre (including Centre Stage Dance Crew)	9 including - Playgrounds - Public Open Space / Nature Reserve - Cricket Grounds - Allotment Gardens	28
Place of Worship	-	1 (The Old Chapel)	2 - Parish Church of St. Michael and All Angels - Horeb Baptist Church	3
School	-	2 - Hollingworth Primary School - Arundale Primary School	3 - St James RC Primary School - Mottram C of E Primary School - Longendale High School	5
Nursery/Creche	-	1 (Arundale Nursery School)	-	1
Health Care Facility	-	42 including - Care / Nursing homes (residential) - Awburn House Dental Practice	1 (Hattersley Primary Care Centre)	43

Receptor	Within DCO boundary (count)	Within 250m of DCO boundary (count)	250m – 500m of DCO boundary (count)	Total within study area (count)
		- General Practice Surgery (Hollingworth Clinic) - Doctors Surgery (Awburn House)		
Walking/cycling route	17 - PROW TS|HYD|54/10 - PROW TS|LON|35/10 - PROW TS|LON|46/90 - PROW TS|LON|49/20 - PROW TS|LON|50/10,20 - PROW TS|LON|51/10,20 - PROW TS|LON|52/10,20, 30 - PROW TS|LON|87/10 - PROW TS|LON|88/60 - PROW TS|LON|90/10 / Transpennine Trail - PROW TS|LON|92/10 - PROW HP12/175/5	79 - PROW HP12/137/1,2 - PROW HP12/144/1 - PROW HP12/154/1 - PROW HP12/175/2,3,4,5,7 - PROW HP12/176/1,2,3,4 - PROW HP12/177/1,2,3,4 - PROW HP12/179/1 - PROW HP12/180/1 - PROW HP12/70/1,2,5,6 - PROW HP12/72/1,2,3,6 - PROW HP12/77/1 - PROW HP12/81/1,2 - PROW TS|HYD|54/10 - PROW TS|LON|104/10 - PROW TS|LON|108/10,20 - PROW TS|LON|109/10,20,30 - PROW TS|LON|21/10 - PROW TS|LON|25/10 - PROW TS|LON|26/10 - PROW TS|LON|27/10,20 - PROW TS|LON|28/10 - PROW TS|LON|29/10 - PROW TS|LON|30/10	63 - PROW HP12/154/1 - PROW HP12/162/1 - PROW HP12/173/1 - PROW HP12/175/1,2 - PROW HP12/70/2 - PROW HP12/72/3 - PROW HP12/78/1,2 - PROW HP12/83/1 - PROW TS|DUK|1/10 - PROW TS|HYD|46/40 - PROW TS|HYD|50/10 - PROW TS|HYD|52/10,20,30 - PROW TS|HYD|53/10 - PROW TS|LON|108/20,30,40 - PROW TS|LON|109/20 - PROW TS|LON|15/10 - PROW TS|LON|18/10 - PROW TS|LON|19/10 - PROW TS|LON|20/10,20 - PROW TS|LON|21/10 - PROW TS|LON|23/10 - PROW TS|LON|24/10 - PROW TS|LON|25/10	123 PROWs intersecting study area

Receptor	Within DCO boundary (count)	Within 250m of DCO boundary (count)	250m – 500m of DCO boundary (count)	Total within study area (count)
		- PROW TS|LON|31/10 - PROW TS|LON|32/10,20 - PROW TS|LON|34/10 - PROW TS|LON|35/10 - PROW TS|LON|36/10 - PROW TS|LON|38/10 - PROW TS|LON|41/10 - PROW TS|LON|46/10,20,30,40, 50,60,70,80,90 - PROW TS|LON|47/20 - PROW TS|LON|49/10,20,30 - PROW TS|LON|50/10,20 - PROW TS|LON|51/10,20 - PROW TS|LON|52/10,30 - PROW TS|LON|86/10 - PROW TS|LON|87/10 - PROW TS|LON|88/60 - PROW TS|LON|90/10 / Transpennine Trail - PROW TS|LON|91/10 - PROW TS|LON|92/10 - PROW TS|LON|93/10	- PROW TS|LON|28/10 - PROW TS|LON|29/10 - PROW TS|LON|34/10 - PROW TS|LON|37/10 - PROW TS|LON|38/10 - PROW TS|LON|39/10 - PROW TS|LON|41/10 - PROW TS|LON|42/10,20 - PROW TS|LON|44/10 - PROW TS|LON|45/10 - PROW TS|LON|46/70 - PROW TS|LON|47/10,20 - PROW TS|LON|48/10 - PROW TS|LON|49/30 - PROW TS|LON|62/10 - PROW TS|LON|63/20 - PROW TS|LON|64/10 - PROW TS|LON|85/10 - PROW TS|LON|86/10 - PROW TS|LON|88/10,20,30,60 - PROW TS|LON|89/10 - PROW TS|LON|90/10 / Transpennine Trail - PROW TS|LON|93/10 - PROW TS|LON|94/10 - PROW TS|LON|97/10 - PROW TS|LON|98/10 - PROW TS|LON|99/10	

Receptor	Within DCO boundary (count)	Within 250m of DCO boundary (count)	250m – 500m of DCO boundary (count)	Total within study area (count)
Bus/Railway Station	None however 5 bus shelters noted	None however 10 bus shelters noted	None however 12 bus shelters noted	None however 27 bus shelters noted
Local Business / Commercial	16. Predominantly commercial and industrial businesses associated with Roe Cross Industrial Estate and Hattersley Industrial Estate. Former Mottram Agricultural Showgrounds are also within the DCO boundary	278 including - Retail - Showgrounds - Office - Leisure (Private Members Club) - Hotel - Industrial - Animal centre - Restaurants - Workshops and Warehousing	137 including - Industrial - Leisure - Office - Retail - Restaurants - Transport (taxi) - Leisure (Private Members Club) - Showrooms - Workshops and Warehousing	431

12.6.13 For more information see Figure 12.1 Community Facilities and Commercial Assets (TR010034/APP/6.4).

12.6.14 In terms of development land, planning permission has been granted or is pending a decision on the wider study area of the Scheme for properties listed in Table 12.10.

Table 12.10: Planning application list identified within study area

Application Reference	Description	Type	Status	Distance from Scheme boundary
HPK/2020/0107, HPK/2019/0133, HPK/2017/0198	Planning permission is sought to erect twenty-nine dwellings, with an access and associated hard surfacing on a brownfield site at Woolley Bridge, Hadfield.	Residential	12/03/2021 Approval of HPK/2020/0107reserved matters following outline approval HPK/2017/0198	Adjacent to Woolley Bridge Junction
HPK/2020/0073	Demolition of existing building, partial dismantling of second building, construction of new building elevation, realignment of existing kerbs, formation of new access road and on-site staff car parking facilities, bunded off-load area and extension of existing trailer park hardstanding area, covering an area of roughly 2.72 hectares	Industrial	HPK/2020/0073 Full planning permission approved 23/10/2020	0.5 km south
The Old Hattersley District Centre 19/00618/FUL	Construction of 15No. houses included associated infrastructure and area of public open space. Site 1 is bounded by Underwood Road, to the North, Hattersley Road East, to the west, Melandra Crescent to the East and St Barnabas Church to the South	Residential	Full planning permission approved	0.4 km south of M67 Junction
19/00963/FUL Full Planning permission approved 13/02/2020	Address: Hattersley District Centre, Beaufort Road, Hattersley. Residential development comprising of 91 no. apartments with associated access, car parking and landscaping. The site is part of the former District Centre and includes land off Hattersley Road East, Beaufort Road and Kingston Close. The site measures 0.66 hectare. The site is currently occupied by areas of waste ground and public open space.	Residential	19/00963/FUL Full Planning permission approved 13/02/2020	0.4 km south of M67 Junction 4
18/00016/FUL	The proposal for a new district centre in Hattersley. Full planning permission for 2,809 sqm parcel of land (for engineering purposes) to enable extension of development boundary of Hattersley retail park. The application site extends to 3.99 hectares (redline boundary) and is located at the junction of Stockport Road and Ashworth Lane, Hattersley. Chain Bar Lane runs through the site from Ashworth Lane. The site is subject to significant variance in levels with the western part of the site relatively flat before falling away considerably from west to east.	Retail	Site preparation started likely to be complete prior to 2025	0.11 km

Application Reference	Description	Type	Status	Distance from Scheme boundary
19/01090/REM	Approval of the reserved matters with respect to access, appearance, layout, scale and landscaping for the construction of 16 new dwellings. Site 28 forms Phase 7 of a wider regeneration programme being undertaken in Hattersley	Residential	Application pending – likely to be delivered before 2025	0.11 km
19/00555/FUL	Residential development comprising of 46 units (6 No. 2-bedroom houses; 21No. 3-bedroom houses; 9No. 4-bedroom houses & 10 No. 2-bedroom bungalows) including associated infrastructure. The layout shows the houses facing onto Hattersley Road East and the proposed through road that eventually connects to Kingston Close and Kenworthy Close.	Residential	Full Planning permission approved 20/12/2019	0.4 km south of M67 Junction 4
16/00946/OUT, 19/00723/REM	Hattersley Phase 6 - Site 24 Hattersley regeneration programme) The site extends to circa 0.88 ha - currently vacant rough ground and unmaintained rough grassland awaiting development The approved reserved matters is for the means of access, appearance, layout, scale and landscaping for the construction of 29 new dwellings.	Residential	19/00723/REM Reserved matters approved 19/12/2019	0.10 km

12.6.15 These applications cover the current planning history for the wider study area of the Scheme at December 2020. It is possible that other relevant planning applications may come forward during the DCO application process for the Scheme.

Agricultural land holdings

12.6.16 The principle land use within the footprint of the Scheme is agriculture. The land is predominantly under pasture for cattle and sheep, with some grass cut feed in the eastern part of the Scheme. Small areas of woodland are present, often as linear features along field boundaries.

12.6.17 Seven agricultural holdings are affected by the Scheme:

- Farm holding A is 48ha grassland farm of medium sensitivity, providing beef and sheep
- Mottram Showground occupies 5.6ha with annual grazing tenants who put sheep there between events. Being grazed only part-time, this holding is of low agricultural sensitivity
- Farm holding B is a 5 ha smallholding of medium sensitivity used for grazing sheep and beef cattle
- Farm holding C is a 5 ha equestrian and animal feed establishment with stabling, grazing and exercise areas. It is of high sensitivity as the enterprise is reliant on the spatial relationship of land to key infrastructure
- Farm holding D is a 5.5 ha smallholding that is mainly under grass and trees. It is of medium sensitivity
- Farm holding E is a c75 ha former dairy farm, now under grass for sheep and beef cattle and hay and silage making. It is of medium sensitivity
- Farm holding F is a 14 ha former dairy farm, now under grass for sheep and beef cattle and is of medium sensitivity.

Walkers, Cyclists and Horse-riders (WCH)

12.6.18 A Walkers, Cyclists and Horse-riders (WCH) Assessment, which is referred to Section 2.20 of the Case for the Scheme (TR010034/APP/7.1), was undertaken for the Scheme. This included user surveys with results used to inform the design of the scheme and this assessment. The following WCH information is further supplemented from ‘rowmaps’ an outline information source that uses Ordnance Survey mapping to display PRoW mapping. A web based GIS tool using freely available mapping data has also been used to inform the understanding of baseline conditions which includes data from Derbyshire County Council PRoW and Tameside MBC PRoW.

12.6.19 PRoW and other recreational routes including bridleways and cycle routes are present within the wider study area, including the Pennine Bridleway National Trail (which incorporates the Trans-Pennine National Cycle Route 62 along part of its route). There are sections of off-road route in the study area, however, these are limited to the National Cycle Network Route 62 – one section which runs on a gravel track between Stockport Road and Broadbottom Road and another on a surfaced path from Gamesley to Hollingworth. Whilst these sections are generally of good quality, they do not fully connect to suitable on-road routes for continuing journeys.

12.6.20 The main roads through the study area are the M67, A57, A560 and the A6018. There are no cycle facilities on the M67 as it is a motorway, and the cycle facilities on the A57, A560 and A6028 are not continuous. Where cycle facilities are provided, these tend to be of low quality (e.g. unprotected facilities). The A57 and A6018 are constrained in places in terms of carriageway width, meaning that the introduction of cycle facilities would be difficult to achieve. All four roads have high traffic volumes, which would result in on-road cycling not being comfortable or attractive for most users.

12.6.21 There is no cycle infrastructure on the A57 (Hyde Road, Mottram Moor and Woolley Lane) between Hattersley roundabout and Woolley Bridge.

12.6.22 Some junctions in the study area have advanced stop lines (ASLs), for example the junctions along the A57 Mottram Road in Hyde, as well as at Hattersley Stockport Road junction. However, there is no cycle infrastructure that links to these ASLs, reducing the benefit to cyclists.

12.6.23 There are cycle lanes on the A560 Stockport Road through Hattersley, which has a 40mph speed limit. However, there are issues with these cycle lanes, including the use of give-way markings at side roads in the cycle lanes. The cycle lanes are demarcated from vehicle traffic by a white hatching area but are not physically separated from traffic.

12.6.24 All PRoW are shown on the Streets, Rights of Way and Access Plans (TR010034/APP/2.4) and reported in Table 12.9. A summary of key PRoWs of note is provided below:

- The Pennine Bridleway National Trail is used by horse riders, cyclists and walkers and has two alternative sections of route in the vicinity of the Scheme. Section (a) incorporates the Etherow – Goyt Valley Way and Tameside Trail and passes between Broadbottom and Hollingworth. The route section crosses the A57(T) to A57 Link Road approximately 700m to the south of the A57 Mottram Moor to meet Woolley Lane to the east of Hollingworth. Section (b) incorporates the Trans-Pennine Trail National Cycle Route 62 and passes between Gamesley and the west side of Hadfield. The route section crosses the A57 at a point inside the Draft Order Limits. The crossing point corresponds with the junction of the A57 Link Road and existing A57 at Woolley Moor.

- PRoW LON/52/30 & LON/52/20 & LON/52/10 runs from the A57 Hyde Road near the M67 Terminal Roundabout, in a north east direction towards Old Mill Farm to the west of Mottram in Longdendale. PRoW LON/50/10 & LON/50/20 runs from the A57 Hyde Road near the M67 Terminal Roundabout, in a north west direction towards Edge Lane.
- PRoW LON/51/20 & LON/51/10 runs from the A57 Hyde Road in a north west direction towards Edge Lane in the north. PRoW LON/88/60 runs in a north south direction from the A57 Mottram Moor through Robin Hood Farm and links with the wider footpath network.
- PRoW LON/90/10 runs in a south west direction from Woolley Lane through Tara Brook Farm and links with the footpath wider network. PRoW LON/87/10 is towards the south of the Scheme. The PRoW runs in a north east/south west direction from the A57 Mottram Moor and links with PRoW LON/86/10 and runs in a westerly direction towards Market Street. PRoW LON/35/10 runs in a north-south direction along Old Hall Lane and Bridleway LON/108/10 runs approximately 150m to the north of the Scheme, along Coach Road in a north-west/south-east direction from Mottram Old Hall towards the A57 Mottram Moor.

Human Health

12.6.25 The definition of baseline conditions follows published guidance provided in DMRB LA 112 to inform the assessment of the sensitivity of health determinants and receptors in the study area, particularly the presence of any vulnerable groups, which may be more susceptible to impacts.

12.6.26 The human health baseline focuses on the human health profile for the wider study area, including demographic profile, demographic trends, socio-economics, deprivation, health and wellbeing characteristics, and general characteristics of the natural and built environment.

12.6.27 There are two Local Authorities of relevance to the Scheme – Tameside Metropolitan Borough Council and High Peak Borough Council, with relevant Wards within these Local Authorities being Longdendale (Tameside) and Hadfield North and Hadfield South (High Peak). Note that the majority of the Scheme is located within Longdendale. This section provides an outline of the current health status of residents who are living in the wider Tameside and High Peak areas and provides a focus on those noted wards.

Tameside Metropolitan Borough Council

12.6.28 Public Health England profiles[6] show that the Tameside population (2019) is 226,500, of whom 140,700 are within the ages 16-64. Within Longdendale ward, the total population (2017) was 10,002 of whom 6,050 were within the ages 16-64. This therefore means that within Tameside as a whole, there is 85,800 people (37.8%) and within Longdendale (39.5%) who could be considered to have increased susceptibility to health issues.

[6] Public Health England, Local Health Profiles

12.6.29 The under 75 deaths from respiratory rate for Tameside is 53 per 100,000, which is a worse rate than the North West region and England as a whole, with a similar outcome for all ages and all persons, though is not considered to be significantly so. Longdendale has a limiting long-term illness or disability rate of 23.0%, which is worse than both Tameside as a whole (20.9%) and England as a whole (17.6%). Life expectancy for males in Longdendale is 77.5 years, which is significantly worse than England (79.5 years). It is, worse though not significantly so for female life expectancy – 81.9 years compared to 83.1 for England.

12.6.30 Deaths from circulatory disease within Longdendale is noted as being significantly worse than England as a whole.

12.6.31 With specific reference to the Longdendale ward, it is to be noted that Longdendale has the third highest level of self-reported poor health and limiting long term illness or disability out of all Tameside wards. Despite this however, life expectancy for both male and females within Longdendale is the 5th highest out of all Tameside wards and overall premature mortality rates are considerably lower than the Tameside average within the ward. However, the under-75 CVD mortality rate in Longdendale is 75% higher than the Tameside average. The diagnosed prevalence of CHD, stroke, diabetes, asthma, Heart Failure, Atrial Fibrillation and Peripheral Arterial Disease (PAD) are higher than the Tameside average[7].

12.6.32 According to the Tameside MBC Joint Strategic Needs Assessment (2018/2019), the main health and well-being challenges for Tameside include:

- Higher demand for health and social care services across the area as the population continues to grow, age and change
- Changes in the age profile of the population are currently contributing to the increased demand on health and social care services
- The health of people in Tameside is generally worse than the England average. Tameside is one of the 20% most deprived districts/unitary authorities in England and about 20% (8800) children live in low-income families.

12.6.33 Data from the 2011 Census highlighted that 44% of residents report their health status as ‘very good’, which is slightly lower than that for the north west as a whole. The proportion of residents who report their health status as ‘bad’ and ‘very bad’ within Tameside was 6% and 2% respectively, (which is comparable the north west as a whole).

12.6.34 The proportion of residents in Tameside with an activity limiting health problem or disability who consider their day-to-day activities to be ‘limited a little’ is 10%, which is the same for the north west as a whole. Those that consider their activities to be ‘limited a lot’ is slightly higher at 11% of residents in Tameside, which is slightly higher than for the north west as a whole.

[7] Health and Wellbeing Ward Profile – Longdendale

12.6.35 The suicide rate in Tameside is not significantly different than the England average.

12.6.36 When looking at levels of obesity, childhood obesity levels (based on children in Year 6 of primary school) for Tameside is not significantly different from the England average. However, when looking at adult rates of excess weight for Tameside, this is significantly worse than the England average.

12.6.37 Deprivation can be measured across seven different domains – income, employment, health, education, living environment, crime and barriers to services, using a wide range of indicators. These measures are aggregated to create an Index of Multiple Deprivation (IMD), which gives an indication of overall deprivation and ranks every small area in England (known as Lower Super Output Areas or LSOAs, based on the 2011 Census.

12.6.38 Analysis has shown that 35% of LSOAs in Tameside are within 20% most deprived in England. Further scrutiny of the data shows that there is a concentration of deprivation in the west of Tameside (which is where the study area is located). For example, one LSOA which is found towards the west of Tameside, is ranked at 0.9% most deprived LSOA in England. In addition, there are significant levels of deprivation which are found within the study area, for example one LSOA towards the west of the Scheme is in the 5% most deprived LSOA in England. Longdendale is noted by Public Health England as having an IMD score of 33, which is significantly worse than Tameside as a whole (29.4) or England as a whole (21.8). This situation is reflected in specific reference to child poverty and older people in deprivation.

12.6.39 Health deprivation is one specific domain that makes up the IMD. Analysis of this domain has shown that there is a disproportionate concentration of LSOAs found in the west of Tameside which score poorly on this domain. However again, there are significant pockets of health deprivation which are found in the immediate vicinity of the Scheme.

12.6.40 Tameside Joint Strategic Needs Assessment (2018/19) notes that black and minority ethnic groups in the UK have some of the worst health outcomes in many areas than the general population. Mid-year population estimates for Tameside and the rest of the country have increased and it is assumed that this increase will include people from minority populations, which accounted for 12% of the population in 2011. Estimates for Tameside suggest there is an overall 8% increase in the total ethnic population for all ages between 2016 and 2045. For children under 5 years the change will be slightly higher, with an estimated increase of 11% over the same period[8]. It is notable though that there is a smaller percentage of the population within the BME group (2.9%) than Tameside (9.1%) or England (14.6%) as a whole.

[redacted]

12.6.41 Overall, it is considered that the population within the Longdendale part of study area can be said to be typically living in greater levels of deprivation, with poorer health outcomes and lower life expectancy than both the Tameside Metropolitan Council area, the North West region or England as a whole, though of course there would be variations to be found on an individual or household level.

High Peak Borough Council

12.6.42 Public Health England profiles[9] show that the High Peak population (2017) is 92,063, of whom 57,526 are within the ages 16-64. Within Hadfield North ward, the total population (2017) was 2,560 of whom 1,673 were within the ages 16-64, while in Hadfield South ward, the total population was 4,163 of whom 2,570 were within the ages 16-64. This therefore means that within High Peak as a whole, there is 34,537 people (37.5%) and within Hadfield North (34.6%) and Hadfield South (38.3%) who could be considered to have increased susceptibility to health issues.

12.6.43 Hadfield North has a limiting long-term illness or disability rate of 22.0%, which is worse than both Derbyshire as a whole (20.4%) and England as a whole (17.6%). Hadfield South has a limiting long-term illness or disability rate of 18.1%, which is better than both Derbyshire as a whole (20.4%), though worse (but not significantly different) to England as a whole (17.6%).

12.6.44 Life expectancy for males in Hadfield North is 76.6 years, which is worse, though not significantly so, to England, while in Hadfield South it is 76.2 which is significantly worse than England (79.5 years). In terms of female life expectancy, it is 82.2 years in Hadfield North, while it is 82.4 in Hadfield South, both of which are worse, though not significantly so compared to 83.1 for England.

12.6.45 Deaths from circulatory disease within Hadfield North and Hadfield South are both noted as being worse than England as a whole, though not significantly so. The deaths for all ages and all persons from respiratory disease in Hadfield North is worse, though not significantly so to Derbyshire and England, while in Hadfield South it is marginally better. It is notable that in both Hadfield North and Hadfield South, behavioural risk factors such as smoking is lower than England as a whole.

12.6.46 With specific reference to the Hadfield North ward, it is to be noted that 8.1% of this population are considered to have bad / very bad general health, which is a higher percentage than High Peak (5.2%) or Derbyshire (6.2%) as a whole. This is particularly the case for females over 65 years. Members of the Black and Minority Ethnic population also have a notably higher percentage (9.3%) in bad health compared to High Peak (3.7%) or Derbyshire as a whole (4.0%).

[9] Public Health England, Local Health Profiles

12.6.47 Health profiles with respect to Hadfield South are improved in comparison to Hadfield North, with 5.3% of the population of this area are considered to have bad or very bad health, which is broadly similar to High Peak (5.2%), but less than Derbyshire as a whole (6.2%). There is also an improved health profile in respect of those members of the Black and Minority Ethnic population where 2.2% are considered in bad health compared to High Peak (3.7%) or Derbyshire as a whole (4.0%)[10].

12.6.48 According to Derbyshire County Council's Joint Strategic Needs Assessment, the main health and wellbeing challenges for High Peak include:

- The wider population of Derbyshire is currently proportionately older than England overall, with around one in five people aged 65 and over
- Almost a further fifth are aged under 16, meaning two out of every five people are dependent on the working age population
- By 2039 almost half the population will be in these age groups, nearly three in every ten people will be aged 65 and over.

12.6.49 Data from the 2011 Census highlights that 48% of residents within High Peak report their health status as 'very good', which is higher than for the East Midlands as a whole (45%). The proportion of residents who report their health status as 'bad' and 'very bad' within High Peak are 4% and 1% respectively (which is the same as reported for the East Midlands as a whole).

12.6.50 The proportion of residents in High Peak with an activity limited health problem or disability, who consider their day-to-day activities to be 'limited a little' is 10%, which is the same as that for the north west as a whole. Those that consider their activities to be 'limited a lot' is slightly lower at 8%, which is lower than for the north west as a whole (10%).

12.6.51 When looking at levels of obesity, childhood obesity levels (based on children in Year 6 of primary school) for High Peak, this is significantly better than the England average. In addition, when looking at adult rates of excess weight, this is not significantly different than the England average.

12.6.52 Looking at IMD, analysis has shown that 5% of LSOA in High Peak are within the 20% most deprived in England. Further scrutiny of the data shows that there is a concentration of deprivation in the west of High Peak, particularly towards the south west. For example, one LSOA which is found towards this area, is ranked as the 3.5% most deprived LSOA in England. Hadfield North ward is shown to have an IMD 28.8 which is significantly worse than that of Derbyshire or England. However, in terms of deprivation, Hadfield South ward is considered to have an IMD Score of 13.5 which is significantly better than Derbyshire or England as a whole.

[10] Health profiles for Hadfield North and Hadfield South wards, High Peak.

12.6.53 In relation to the health domain, analysis has shown that there is a disproportionate concentration of LSOAs found in the south west of High Peak, which score poorly on this domain. However, as with the overall IMD, the health domain score much more positively within the study area.

12.6.54 According to the 2011 census, 2.5% of Derbyshire's population was black or minority ethnic which is significantly lower than the England and Wales proportion. Of note, the proportional increase of black and minority ethnic groups between the 2001 and 2011 census in High Peak was 32.7% and it is anticipated that this trend will continue.

12.6.55 Overall, it is considered that the population within the Hadfield North part of study area can be said to be typically living in greater levels of deprivation, with poorer health outcomes and lower life expectancy than both the Derbyshire area, the North West region or England as a whole, though of course there would be variations to be found on an individual or household level. It is an improved picture with respect to Hadfield South, which performs better than Hadfield North across a number of health and wellbeing indicators. Hadfield South is also notably less deprived than other areas in the vicinity and England as a whole. Again though, there would be variations to be found on an individual or household level.

Future baseline (Land use and Human health)

12.6.56 The future baseline has been determined using various data sources, including borough level population and employment growth projections. Data has been collected from the Office for National Statistics, which outlines projected population growth between 2018 and 2043 (shown in Table 12.11). Of note the start of construction works is anticipated in 2023 and the first full year of opening is 2025. The design year is noted as 2040.

12.6.57 Analysis has shown that High Peak is expected to experience population growth of 8.0% between 2018 and 2043 and Tameside 9.5% over the same period. High Peak will experience a similar growth as the North West but lower than England. Tameside will experience a higher growth than the North West and England as a whole, 8.1% and 9.3% respectively.

Table 12.11: Forecast Population Growth within the Wider Study Area

	2018	2043	% growth
High Peak	92,221	99,610	8.0%
Tameside	225,197	246,671	9.5%
North West	7,292,093	7,881,552	8.1%
England	55,977,178	61,744,098	9.3%

Source ONS, Subnational population projections for England: 2018-based

12.6.58 Work undertaken as part of the development of the GMSF (2020)[11] highlighted how Greater Manchester will experience sustained growth in job, the economy and the population, including:

- An increase of around 100,000 jobs by 2037 although a more ambitious accelerated growth scenario estimates an increase of about 170,000 jobs
- An increase in population by 187,700 by 2037, and this in turn will contribute to a significant increase in households
- The document highlights that a high level of economic growth is being planned for Greater Manchester, well above baseline forecasts, taking advantage of the proposed transport investments and potential development opportunities. A variety of high-quality sites will be made available across the sub-region. Amongst a number of key objectives of the emerging GMSF (2020), improvements to transport infrastructure is key, with the document stating '*Greater Manchester's streets will be designed and managed to make a significant positive contribution to the quality of place and support high levels of walking, cycling and public transport. Targeted improvements to the highway network will be supported through studies and scheme development, where they complement the aim of securing a significant increase in the proportion of trips made by walking, cycling and public transport (as set out in Policy GM-N 5 'Walking and Cycling' and Policy GM-N 3 'Our Public Transport')'.* This Scheme will make a significant contribution to delivering this aim.

12.6.59 Tameside MBC is preparing a new Local Plan. The Local Plan will replace the currently adopted Unitary Development Plan adopted in 2004 and it was anticipated would incorporate the strategic policies and allocations as they evolved in the draft GMSF. Upon adoption of the GMSF, it was the intention that the following policies in the local plan would be partially replaced by policies in the GMSF. However, the GMSF is no longer being progressed and as such, for the time being, these policies remain.

Table 12.12: Tameside Metropolitan Borough policy anticipated to be replaced by GMSF or subsequent Plan

Policy	Anticipated to be replaced by GMSF or subsequent Plan policy/policies
H1 Housing Land Provision (Partially)	GM-H1
OL1 Protection of the Green Belt	GM-G10
- OL2 Existing Buildings in the Green Belt	GM-G10
OL3 Major Developed Sites in the Green Belt	GM-G10
T7 Cycling (Partially)	GM-N5 and GM-N7
T8 Walking (Partially)	GM-S6
U4 Flood Prevention (Partially)	GM-S5

Table Source: Emerging GMSF 2020[12]

[redacted]

12.6.60 The Growth Strategy for High Peak (High Peak Borough Council, 2017) sets out a plan for sustainable growth and identifies development opportunities in the Borough for the next 15 years. A key cornerstone of this strategy is to reinforce the distinctive High Peak identity by sustained and planned growth in jobs, housing, footfall, tourism and spend in the economy, making High Peak a better place in which to work, live, play and travel.

Local Economy

12.6.61 This section presents the wider context within which the Scheme is located, using the local authority areas of High Peak Borough Council and Tameside Metropolitan Borough Council to present relevant socio-economic data.

12.6.62 According to the Office of National Statistics annual population survey between April 2019 and March 2020, the unemployment rate was higher in Tameside (4.5%) than North West as a whole (4%). The unemployment rate in High Peak between April 2019 and March 2020 was 3.3%, which is lower than the East Midlands as a whole (3.7%).

12.6.63 Labour market data for each of the two local authority areas is summarised below.

12.6.64 Tameside – the Office for National Statistics annual population survey shows that between April 2019 and March 2020, the economic activity rate in Tameside was 78.4%, higher than the north-west region as a whole (78.1%). The main source of employment is the Wholesale and retail trade; repair of motor vehicles and motorcycles, in addition to manufacturing and human health and social work activities.

12.6.65 High Peak – for the same period, the economic activity rate for the High Peak area was 71.8%, lower than the East Midlands region as a whole (79.7%). The main sources of employment include the manufacturing, wholesale and retail sectors.

Future Baseline Overview

12.6.66 It is anticipated that the baseline details as reported in the sections above describe the people and communities as they are currently (2021) and it is anticipated that these will remain broadly similar over the next number of years prior to construction works commencing – i.e. the majority of the route will remain as agricultural land etc.

12.6.67 There are a number of uncertainties surrounding area development proposals (for example due to the GMSF not being progressed), though these have been considered as part of the assessment.

12.6.68 It is known though that the population of England is growing, as well as ageing and this is anticipated to put an increased strain on health and social care provision.

12.6.69 A review of plans and policies, as well as Health and Wellbeing Strategies has been undertaken to help determine the likely future health profiles for both Tameside and the High Peak local authority areas and this has been considered through the assessment process. It is recognised that while progress in improvement to many health outcomes is anticipated over the next 15 years, there will be significant and continuing challenges, linked to environment, society and the economy to improving health and wellbeing outcomes across the study area. In addition, it is also to be noted that the effects of the COVID-19 pandemic could also have significant ongoing effects on health and well-being, and this leads to uncertainty as to overall health outcomes.

Identification of vulnerable groups

12.6.70 From a review of the population and human health baseline for Tameside and High Peak Local Authorities as a whole, as well as data from within these areas (e.g. Ward level data and LSOA), it has been possible to identify a number of groups within the population and communities of Longdendale, Hadfield South and Hadfield North, who, along with the population as a whole (wider groups) could be considered vulnerable in terms of their health and wellbeing. These groups and the rationale for their identification is outlined as follows:

Table 12.13: Identification of vulnerable groups

Group	Relevant receptor / medium	Explanation	Are these groups identified in the study area?
Wider Groups – adults / working people	Residents living in houses, operators and users of community land and facilities, business owners and users, users of open space, recreation and leisure activities, WCH, public transport users and vehicle travellers	The key challenge to the physical health, mental and social wellbeing of the local resident population arises from inactivity and unhealthy lifestyle choices and are also linked to the local transportation and road network. Residents of properties in the wider study area, employees and customers at the retail, commercial and industrial businesses interspersed throughout the area, walkers and cyclists using recreation routes and the local footpath and cycleway network, visitors to nearby visitor attractions, and public transport users are likely to be most exposed to health impacts.	There are approximately 4300 residential properties within the study area. There are also a number of businesses with the study area including Roe Cross Industrial Estate and Hattersley Industrial Estate. Former Mottram Agricultural Showgrounds, shops, and takeaways, among others.
Sensitive Group - Families with children and adolescents, (pregnant women, babies, children and adolescents)	Residential houses, community services and facilities, open space, greenspace and recreational facilities, PRoW, local footpaths and cycleways,	Children and adolescents constitute a sensitive population group due partly to their need to be able to move around freely to and from school, open space, greenspace and recreational activities, whilst they lack the experience and judgement displayed by adults when moving around in traffic and	There are approximately 4300 residential properties within the study area It is known that younger persons live within a number of the residential dwellings of the study area. Hollingworth Primary School, Arundale Primary School, St James RC Primary School, Mottram C of E Primary School and Longendale

Group	Relevant receptor / medium	Explanation	Are these groups identified in the study area?
	Schools nurseries, day care centres, residential houses	public spaces[13] and when using public transport and related infrastructure. Hence, children and adolescents as pedestrians[14] and cyclists are at elevated risk from danger distributed by motorised transport. Furthermore, children are more sensitive than adults to air pollution[15], noise[16], odour[17] and other environmental factors and their bodies and minds are less able to deal with them. Particularly susceptible children are those from low-income[18] and/or black and minority ethnic (BME) backgrounds[19] and/or living in deprived areas.	High School are within are within the study area. While income levels of residents of the study area is unknown, analysis has shown that 35% of LSOAs in Tameside and 5% of LSOAs in High Peak are within the 20% most deprived in England and both Longdendale and Hadfield North wards are not favourable in terms of deprivation compared to other areas within this local authority area, though there are also relatively less deprived areas also, such as Hadfield South. While precise ethnic makeup of the population within the study area is unknown, based on Census 2011 data, the resident population of Tameside is predominately white British (88%) with 12% being from a minority ethnic group and the resident population of High Peak is predominantly white British (96%) with 4 % being from a minority ethnic group. It is anticipated that the overwhelming ethnicity in the study area will be white and this is reflected within the Longdendale, Hadfield North and Hadfield South wards (2011 census figures).
Sensitive Group – People who are physically or mentally disadvantaged (elderly people, people with physical disabilities, people with	Residential houses, retirement / Care homes, community services and facilities (including health centres / clinics and hospitals), open space,	Elderly people constitute a sensitive group as they are more sensitive than young and middle-aged adults. Generally, the older people are, the slower their movement and reactions and the poorer their hearing[20]. They can be more at risk from injury and may fear falls, steps or lack of suitable footpaths, lack of safe crossing points and short crossing times at safe crossing points and	**Yes:** There are approximately 4266 residential properties within the study area. There are a range of care facilities including Nursing homes and a Primary Care Centre within the study area The wider population of Derbyshire is currently proportionately older

[redacted]

Group	Relevant receptor / medium	Explanation	Are these groups identified in the study area?
other health problems or impairments)	PRoW and local footpaths	other aspects of the surrounding built environment[21]. This can deter them from outdoor activity, especially walking, whereas walking is critical for muscle strength and reduces the risk of falls amongst other benefits. Elderly people can also feel more sensitive when using public transport[22,23]. They also often need to seek health services. Their continuing independence at home is often dependent on having available a range of transport mode and route options. People who are disabled and/or with physical and/or mental illnesses or impairments constitute a sensitive group as they may not be able to access many forms of transport or need special arrangements and/or support to access these[24]. They are more likely to find it difficult to walk or travel independently and can also be disadvantaged by the cost of transport. Any changes in access, such as greater travel distances, diversions or replacement services during construction would have particular impacts on this group. Chronically ill persons, for example, people with impaired lung function, can be more adversely affected by air pollution[25]. The same is true of hypersensitive individuals such as asthmatics[26]. Noise can cause hypertension and cardio-vascular problems[27]. Those who already have these conditions can be more troubled by noise than others. People with existing physical and mental illnesses, including sleep disturbance, anxiety and depression, are likely to be more	than England overall, with around one in five people aged 65 and over. The proportion of residents in High Peak with an activity limited health problem or disability, who consider their day-to-day activities to be 'limited a little' is 10%, which is the same as that for the north west as a whole. Those that consider their activities to be 'limited a lot' is slightly lower at 8%, which is lower than for the north west as a whole (10%). Longdonedale, Hadfield North and Hadfield South wards have all been shown to have notable levels of long-term illness, with generally worse health outcomes than the region and England as a whole (though in some aspects Hadfield South performs better).

[redacted]

Group	Relevant receptor / medium	Explanation	Are these groups identified in the study area?
		sensitive to changes to their local environment.	
Sensitive Group - People who are materially disadvantaged	Residential houses, community services and facilities, local businesses, open space, greenspace and recreational facilities, PRoW, local footpaths and cycleways, public transport, bus stops	People on low incomes (living in deprived areas is a proxy measure for low income) and people without access to a car constitute a sensitive group as they are likely to walk further because they cannot afford public transport or to own a car, and their lack of transport options may limit life and work opportunities. Those on low incomes may be less able to adapt to changes in access, such as greater travel distance or alternative transport provision. People living in deprived areas tend to suffer the most from road traffic incidents (deaths and injuries), noise and air pollution, as they tend to be characterised by high traffic volume, as well as other environmental burdens such as industrial facilities. This group is generally more likely to already have reduced access to health and social care as well as reduced access to other services and amenities. This group may have increased stress levels due to the factors above. In addition, this group is more sensitive to food insecurity, which has an access dimension.	**Yes:** Analysis has shown that 35% of LSOAs in Tameside are within 20% most deprived in England. Further scrutiny of the data shows that there is a concentration of deprivation in the west of Tameside. For example, one LSOA which is found towards the west of Tameside, is ranked at 0.9% most deprived LSOA in England. In addition, there are significant levels of deprivation which are found within the study area, for example one LSOA towards the west of the Scheme is in the 5% most deprived LSOA in England. Longdendale and Hadfield North wards have been shown to be significantly more deprived than the English average, though Hadfield South performs significantly better.
Sensitive Group – People from black and minority ethnic backgrounds	Residents living in houses, operators and users of community land and facilities, users of open space, recreation and leisure activities, WCH, public transport users and vehicle travellers	There is a general consensus that inequalities exist in the health and healthcare experiences of ethnic minority groups in England[28]. Access to primary health services is generally equitable for ethnic minority groups, but this is less consistently so across other health services. People from the gypsy or Irish traveller, Bangladeshi and Pakistani communities have the poorest health outcomes across a range of indicators and compared to white populations, disability-free life expectancy is estimated to be lower among several ethnic minority groups.	**Yes:** Ethnic minority groups represent an increasing proportion of the population for both Tameside and High Peak, though in overall population terms these BME populations are lower than the England average, with Longdendale, Hadfield North and Hadfield South having lower percentages of BME populations than their local authorities as a whole.

[redacted]

Group	Relevant receptor / medium	Explanation	Are these groups identified in the study area?
		While the incidence of cancer is highest in the white population, rates of infant mortality, cardiovascular disease (CVD) and diabetes are higher among black and south Asian groups. CVD and diabetes cause significant morbidity among these groups, much of which can be prevented by public health measures aimed at tackling risk factors such as obesity, poor diet, inadequate physical activity and smoking[29].	

12.7 Potential impacts

12.7.1 For clarity, consideration is made of the embedded mitigation to the Scheme (noted as required in the assessment tables but see also the Scheme chapter (Chapter 2) for a detailed explanation of embedded mitigation), with a significance of effect identified in light of this embedded mitigation.

12.7.2 The introduction or modification of road infrastructure associated with the Scheme would potentially result in different types and durations of impacts on population and human health during the construction phases. These are outlined as follows, with land use and accessibility addressed first, followed by human health as per DMRB LA 112:

Construction

Land use and accessibility

Private property and housing

12.7.3 During construction, the proposed works have the potential to impact private property and housing through:

- Permanent land take/demolition at four residential properties and sheds on Four Lanes, seven residential properties on Old Road, six residential properties and nine garages on Tollemache Close, eight residential properties on Old Hall Land and a stable on Mottram Moor. The ownership details of the properties are provided in the Book of Reference (TR010034/APP/4.3).
- Temporary disruption to access on the 4236 properties within the study area
- Reduction of housing numbers and associated pressures within the housing market in respect of availability owing to settlement of non-local construction workforce.

[29] The health of people from ethnic minority groups in England | The King's Fund

Community land and assets

12.7.4 During construction, the proposed works have the potential to impact community land and assets through:

- Permanent loss of land and amenity impacts on the public park / garden (communal yard behind 2 to 15 Old Road) and open space (Land adjacent to Mottram Moor Farm)
- Disruption, changes to access and viability or amenity impacts to the education, healthcare and other community facilities within the study area particularly for those residents in the area of Tollemache Close and Road and Hall Drive who may utilise Old Hall Lane (subject to temporary closure for approximately 1 year) to access community assets such as the Post Office, Evangelical Church, Funeral Service and Awburn House Surgery.
- Amenity impacts on the public open space recreation and leisure time activities within the study area

Development land and business

12.7.5 During construction, the proposed works have the potential to impact development land and business through:

- Demolition and permanent land take at four units on Roe Cross Industrial Estate
- Permanent land take at the former Mottram Agricultural Showgrounds
- Temporary disruptions to access and trading conditions and loss of amenity at commercial/industrial premises within the DCO boundary
- Temporary disruptions to access and trading conditions and loss of amenity at commercial/industrial premises within the study area
- Changes to trading conditions and impacts on local businesses and job market resulting from the introduction of a workforce of approximately 200 to 270 at peak

Agricultural land holdings

12.7.6 During construction, the proposed works have the potential to impact agricultural land holdings through:

- Permanent acquisition of 24 ha of agricultural land
- Temporary acquisition of 8.3 ha of Farm holding A in order to enable creation of a site compound
- Height reduction of around 2 ha of Farm Holding F in order to provide flood compensation

Walkers, Cyclists and Horse Riders

12.7.7 During construction, the proposed works have the potential to impact walkers, cyclists and horse riders through:

- Temporary loss, closure or diversion of PRoWS within the DCO boundary
- Temporary disruptions to access, throughfare and connectivity to other active travel provisions within the DCO boundary
- Throughfare and connectivity disruptions to approximately 123 walking and cycling routes within the study area
- Increased footfall on unimpeded active travel provisions in the study area as a result of diversions.

Human health

Housing

12.7.8 During construction, the proposed works have the potential to impact housing though:

- Health and wellbeing impact from permanent land take/demolition at four residential properties and sheds on Four Lanes, seven residential properties on Old Road, six residential properties and nine garages on Tollemache Close, eight residential properties on Old Hall Land and a stable on Mottram Moor
- Health and wellbeing outcome from amenity / access impacts at houses within the study area
- Health and wellbeing outcome from changes in access to and availability of good quality housing within the study area.

Community land and assets

12.7.9 During construction works have the potential to impact education, community services and other social infrastructure through:

- Health and wellbeing outcome from loss / reduction in access to open space (public park / garden behind 2 to 15 Old Road) and at land adjacent to Mottram Moor Farm.
- Health and wellbeing outcome from disruptions, amenity impacts and changes in access to education, healthcare and other community facilities within the study area (including playgrounds, allotment gardens, five schools, one nursery and a range of care/nursing homes).
- Health and wellbeing outcome from loss / reduction in amenity, changes or disruption in access to public open space and public parks / gardens within the study area.

Development land and business

12.7.10 During construction works have the potential to impact development land and business through:

- Health and wellbeing outcome from loss of property and permanent displacement of business and their workers at Roe Cross Industrial Estate
- Health and wellbeing impacts over employment instability
- Health and wellbeing outcomes from disruptions to access, potential severance and loss of amenity at approximately 12 other local businesses/commercial remises and units within the DCO boundary (predominantly associated with Roe Cross Industrial Estate and Hattersley Industrial Estate
- Health and wellbeing outcomes from disruptions to access, potential severance and loss of amenity at commercial/industrial premises within the wider study area (approximately 415 premises).
- Health and wellbeing outcome from creation of local jobs, skills and training and benefits to supply chain from local procurement of goods and services within the local business / job market
- Health and wellbeing outcomes from economic benefits of construction simulating the local economy and local job market (including the multiplier effect) noting an anticipated workforce of approximately 200 increasing to 270 at peak.

Agricultural land holdings

12.7.11 During construction works have the potential to impact agricultural land holdings through:

- Health and wellbeing outcome from permanent loss of agricultural land holdings and / or severance at Farm holding A, Mottram Show Grounds, Farm holding B, Farm holding C, Farm holding D, Farm holding E and Farm holding F.

Walkers, Cyclists and Horse Riders

12.7.12 During construction works have the potential to impact walkers, cyclists and horse riders through:

- Health and wellbeing outcome from temporary severance, disruptions to access, pedestrian and cyclist delays and increases in journey length as well as temporary loss of amenity on PRoWs 35, 50, 51, 52, 87, 88 and PRoW 90 / Transpennine Trail
- Health and wellbeing outcome from temporary loss of amenity on other active travel provisions within the DCO boundary including PRoWs and the Transpennine Trail
- Health and wellbeing outcome from temporary loss of amenity and loss of active travel opportunities within the wider study area

Safety / Risk of Injury and Death

12.7.13 During construction works have the potential to impact risk of injury and death through:

- Health and wellbeing outcome from unauthorised access/trespass to compounds resulting in injuries or loss of life
- Criminal behaviours resulting in on-site conflicts and threats of violence, resulting in personal injury.
- Injury or loss of life from construction traffic, increased traffic levels and altered traffic movements within the study area, particularly to vulnerable road users including cyclists, elderly drivers and pedestrians
- Utilities and buried services diversions or installations, leaks or conflict during construction works

Air pollution

12.7.14 During construction works have the potential to impact risk of air pollution through:

- Health and wellbeing outcome from increased dust emissions

12.7.15 See Chapter 5 (Air Quality) for further information.

Soil and Water Pollution

12.7.16 During construction works have the potential to adversely impact risk of soil and water pollution through:

- Health and wellbeing outcome from increased dust emissions to nearby residents
- Health and wellbeing outcome from exposure to contaminated groundwaters via abstractions
- Works to watercourses, construction vehicle movements and associated oil/fuel and runoff and disturbance of groundwater flows, with the potential to impact on human health

12.7.17 See Chapters 9 and 13 (Geology and Soils and Road Drainage and Water Environment) for further information.

Noise Pollution and Vibration

12.7.18 During construction works have the potential to impact noise pollution and vibration through:

- Health and wellbeing outcome from construction noise
- Health and wellbeing outcome from construction vibration

- Health and wellbeing outcome from construction traffic, including the closure of Old Hall Lane during Phase 1 of the woks with resulting impacts on Old Road, Coach Road, Hall Drive and Tollemache Road

12.7.19 See Chapter 11 (Noise and Vibration) for full consideration of noise and vibration.

Landscape amenity

12.7.20 During construction works have the potential to impact landscape amenity through:

- Health and wellbeing outcome from construction activities including creation of compound areas and construction traffic.

Social cohesion and lifetime neighbourhoods

12.7.21 During construction works have the potential to adversely impact social cohesion and lifetime neighbourhoods through:

- Health and wellbeing outcome from severance issues that may occur due to disruption to existing road usage and increases in number of construction traffic to access construction site / construction compounds.

Transport options

12.7.22 During construction works have the potential to impact transport options through:

- Health and wellbeing outcome from disruptions, closures, temporary speed limits, restrictions and diversions required during construction which may lead to less reliable and longer journey times.

Operation

Land Use and Accessibility

Private property and housing

12.7.23 During operation works have the potential to impact private property and housing through:

- Direct and indirect effects on the local housing market and housing availability due to improved connectivity, reduced congestion, reduced and more reliable journey times, and overall improvements to access.

12.7.24 Of note, any temporary land take from private property and housing during construction would be returned to its original condition on completion of the works.

Community land and assets

12.7.25 During operation works have the potential to impact community land and assets through:

- Provision of improved pedestrian and cyclist crossing facilities and a new underpass to maintain farm access and provide a safe route for walkers, cyclists and horse riders.

12.7.26 Of note, disruptions and changes to access and amenity impacts as a result of construction activities would all be alleviated on completion of the scheme.

Development land and assets

12.7.27 During operation works have the potential to impact development land and assets through:

- Direct and indirect effects on businesses and the job market within the study area due to improved connectivity, reduced congestion, reduced and more reliable journey times, and overall improvements to access.

12.7.28 Of note, as development identified in Table 12.12, the GMSF (now withdrawn) and High Peak Local Plan are constructed and come into active use, it is expected that there will be a noticeable increase in the amount of traffic over and above the existing conditions. Without improvements that the Scheme will bring, the road network will become highly congested resulting in considerable delays. Therefore, the Scheme presents an opportunity to support and facilitate growth.

Agricultural land holdings

12.7.29 During operation works have the potential to impact agricultural land holdings through:

- Permanent land take will decrease the size of the affected holdings.
- Affected holdings will be divided by the new road, which will mean longer journey times for vehicles and livestock being transported to several fields

Walkers Cyclists and Horse Riders

12.7.30 During operation works have the potential to impact Walkers Cyclists and Horse Riders through:

- Provision of improvements on the existing A57(T) and A57 with the possible inclusion of cycle lanes.
- Improved pedestrian and cyclist crossing facilities at the M67 Junction 4, and all new junctions created by the scheme.
- Upgrading of the PRoW LON 52-20 from a footpath to a bridleway, increasing the availability of suitable equestrian facilities away from road traffic.
- Creation of a combined footway and cycleway along the new A57 Link Road between Mottram Moor and Woolley Bridge, creating a route to link Mottram to the Trans-Pennine Trail (National Cycle Network route 62).

Human health

Private property and housing

12.7.31 During operation works have the potential to impact private property and housing through:

- Amenity impacts as reported by the other technical disciplines

Community land and assets

12.7.32 During operation works have the potential to impact community land and assets through:

- Provision of improved pedestrian and cyclist crossing facilities and a new underpass provide a safe route for walkers, cyclists and horse riders.

12.7.33 Of note, amenity impacts as a result of construction activities would all be alleviated on completion of the scheme.

Development land and assets

12.7.34 During operation works have the potential to impact development land and assets through:

- Direct and indirect effects on health due to improved connectivity, reduced congestion, reduced and more reliable journey times.

12.7.35 Of note, as development identified in Table 12.12, the GMSF (now withdrawn) and High Peak Local Plan are constructed and come into active use, it is expected that there will be a noticeable increase in the amount of traffic over and above the existing conditions. Without improvements that the Scheme will bring, the road network will become highly congested resulting in considerable delays. Therefore, the Scheme presents an opportunity to support and facilitate growth.

Landscape amenity

12.7.36 During operation works have the potential to impact landscape amenity through:

- Loss of visual amenity and subsequent impacts on wellbeing for wider groups
- Traffic change through the Peak District National Park as a result of the Scheme and subsequent impacts on wellbeing for wider groups

12.7.37 See Chapter 7 of the ES for full consideration of Landscape and Visual impacts

Walkers Cyclists and Horse Riders

12.7.38 During operation works have the potential to impact Walkers Cyclists and Horse Riders through:

- Safety, health and wellbeing improvements as a result of provision of improved pedestrian and cyclist crossing facilities at the M67 Junction 4, and all new junctions created by the scheme.

- Safety, health and wellbeing improvements as a result of upgrading of the PRoW LON 52-20 from a footpath to a bridleway, increasing the availability of suitable equestrian facilities away from road traffic.
- Safety, health and wellbeing improvements as a result of creation of a combined footway and cycleway along the new A57 Link Road between Mottram Moor and Woolley Bridge, creating a route to link Mottram to the Trans-Pennine Trail (National Cycle Network route 62).

Safety / Risk of Injury and Death

12.7.39 During operation works have the potential to impact Risk of Injury and Death through:

- Changes in traffic levels and an unawareness of altered traffic movements, particularly from sensitive road users
- Health and wellbeing / safety outcome from reduced traffic through Mottram village

Air Pollution

12.7.40 During operation works have the potential to impact Air Pollution through:

- Health outcomes as a result of changes to annual mean NO2 exceedances

12.7.41 See Chapter 5 for full consideration of Air Quality

Noise Pollution and Vibration

12.7.42 During operation works have the potential to impact Noise Pollution and Vibration through:

- Health outcomes as a result of changes in vehicle activity, determined by the traffic flows, speeds and fleet composition on the local road network including the Scheme itself as a new noise source.

12.7.43 See Chapter 11 for full consideration of Noise Pollution and Vibration

Social cohesion and lifetime neighbourhoods

12.7.44 During operation works have the potential to impact Social cohesion and lifetime neighbourhoods through:

- reducing community severance and engendering social cohesion and lifetime neighbourhoods through the separation of local and regional traffic, resulting in large reductions in traffic on the existing A57. This would have allowed the opportunity to make this stretch of road much more friendly to cyclists and pedestrians through improved facilities and crossings, public realm improvements and reduction in speed.

Transport options

12.7.45 During operation works have the potential to impact transport options through:

- More reliable and predictable journey times
- Reduced congestion in Mottram Village
- Improved connectivity for WCH

12.8 Design, mitigation and enhancement measures

Embedded mitigation

12.8.1 Environmental measures considered to be integral to the Scheme are included in the Scheme chapter (Chapter 2). This includes the First iteration Environmental Management Plan (EMP) (application document TR010034/APP/7.2) and Register of Environmental Actions and Commitments (REAC) (TR010034/APP/7.3) provides clear and concise information which states how the mitigation and management of environmental effects will be delivered and maintained.

12.8.2 In relation to Land Use and Accessibility and Human Health it is important to note that the mitigation hierarchy outlined in DMRB LA 112 has been followed during the design process.

Construction

12.8.3 During construction of the Scheme, a number of mitigation measures would be put in place to reduce potential impacts on population and human health.

12.8.4 A Traffic Management Plan (TMP) (TR010034/APP/7.5) would be implemented by the appointed Principal Contractor to reduce the impacts from construction traffic, including measures to reduce worker vehicle movements and HGV movements, particularly at peak periods. The typical core working hours for the Scheme are expected to be between 07:30 and 18:00 on weekdays (excluding bank holidays) and from 07:30 to 16:00 on Saturdays. In addition, there would be a start-up and close down period of one hour either side of these times to maximise efficiency of the core hours. This would include activities such as deliveries, staff travel to work, maintenance and general preparation works, but would not include running plant and machinery that are likely to cause a disturbance to local residents or businesses.

12.8.5 It is expected that some works would need to be carried out at night, (for example, road crossings and final surfacing tie ins). Night working would be agreed in advance with the relevant local authority.

12.8.6 Seasonal construction activities such as earthworks could be subject to an application for extended hours working to make best use of the season. The expected extended working hours would cover 07:00 to 07:30 and 18:00 to 20:00 during weekdays.

12.8.7 Repairs or maintenance of construction equipment (other than emergency repairs) would typically be carried out outside of core working hours, normally on Saturday afternoons (13:00 to 18:00) or on Sundays between 09:00 and 17:00.

12.8.8 Dedicated haul routes will follow the new main line alignment where possible. Access for construction vehicles to the site would be from the trunk road network on designated routes which would be clearly signposted.

12.8.9 The main areas where the construction sites would interface with the travelling public would be at locations where connections to the existing network would be created. In these locations, extensive traffic management would be required to segregate the construction sites from road vehicles.

12.8.10 Planning of the Scheme construction works would be undertaken in order to minimise the need to close and divert footways, PRoW and cycle facilities, and minimise closures and diversion durations. Where the closure of WCH routes would be required, safe and appropriate alternative means of access would be provided to ensure access would be maintained at all times in order to minimise temporary severance.

12.8.11 Temporary road closures and diversions would be arranged following discussions with the relevant highway's authority, police and the maintaining authority.

12.8.12 Land temporarily acquired for construction will be restored to a condition equivalent to its original state. This will be achieved by means of a Soil Resource Plan (SRP) following best practice set out in Defra's *Construction Code of Practice for the Sustainable Use of Soils on Construction Sites*[30].

12.8.13 There is no mitigation for permanent loss of agricultural land, apart from financial compensation which is outside the scope of an environmental assessment.

12.8.14 Underpasses and other means of access are built into the Scheme and so no agricultural land will be permanently severed. The only mitigation for extra journey times and other inconvenience caused by division of the agricultural holdings is financial compensation which, again, is outside the scope of an environmental assessment.

12.8.15 Field drains and field water supplies will be diverted or replaced, as necessary. Proposals for this would need to be agreed with the relevant landowner(s).

12.8.16 Livestock fencing will be installed around construction sites and beside the new road on its completion.

12.8.17 An agricultural liaison officer will be available to deal with issues affecting the operation of agricultural holdings during construction.

[redacted]

12.8.18 During the Scheme construction phase, appropriate mechanisms to communicate with local residents and businesses would be set up to highlight potential periods of disruption (e.g. web-based, newsletters, newspapers, radio announcements, etc.). This would include the appointment of a Community Relation Manager (CRM) responsible for leading engagement with affected communities. The Community Engagement Plan would be prepared prior to construction and annexed to the EMP (Second iteration) to outline the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management, including agricultural liaison officer.

12.8.19 The Applicant's Scheme web-page also provides up-to-date construction and community liaison information. The web-page would continue to provide updates regarding progress, details of areas affected by construction, and mitigation in pace to reduce adverse effects. The communication approaches would help drivers and local residents to plan their journeys and take account of potential disruption due to Scheme construction, as well as provide local residents with details of construction phase activities.

12.8.20 In addition, the Applicant's Customer Contact Centre would also be available to deal with queries from the public. This includes an information line staffed by the Applicant at all times. A complaint management system would be in place, in line with systems used by the Applicant on other major infrastructure projects. Any complaints would be investigated, and appropriate action taken as required. The complainant would be provided with a response outlining the results of the investigation and any action taken.

12.8.21 The First iteration EMP (TR010034/APP/7.2) and REAC (TR010034/APP/7.3) include mitigation measures to minimise impacts on agricultural holdings during construction, these include:

- Arrangements through land agreements with the landowner for the maintenance of farm and field accesses affected by construction
- The protection and maintenance of livestock water supply systems, where reasonably practicable, in agreement with the landowner through the agricultural liaison officer and the Community Engagement Plan that would be prepared at prior to construction and annexed to the EMP (Second iteration)
- The protection of agricultural land adjacent to the construction site, including the provision and maintenance of appropriate stock-proof fencing. This would be in agreement with the landowner through the agricultural liaison officer and the Community Engagement Plan that would be prepared at prior to construction and annexed to the EMP (Second iteration)
- The adoption of measures to control the deposition of dust on adjacent agricultural crops. Best Practice guidance will be followed to determine appropriate limits for the implementation of dust control measures to inform the development of the Nuisance Management Plan, annexed to the EMP (Second iteration)

- The control of invasive and non-native species and the prevention of the spread of weeds generally from the construction site to adjacent agricultural land through an Invasive Non-Native Species Management Plan, that would be prepared at prior to construction and annexed to the EMP (Second iteration)
- The adoption of standard industry best practice measures to prevent, insofar as reasonably practicable, the spread of soil-borne, tree-crop and animal diseases from the construction area
- Liaison and advisory arrangement with affected landowners, occupiers and agents, as appropriate, through the agricultural liaison officer and the Community Engagement Plan that would be prepared at prior to construction and annexed to the EMP (Second iteration)

12.8.22 Where unrestricted agricultural uses are to be resumed on land disturbed during the construction of the Scheme, the design objective is to avoid any reduction in long term capability, which would downgrade the quality of the disturbed land, through the adoption of good practice techniques in handling, storing and reinstating soils on that land as detailed in the Geology and soils chapter (Chapter 9) of this ES (TR010034/APP/6.3).

Operation

12.8.23 With respect to Public Rights of Way, these will be realigned as close to their original alignment as practical to avoid extending WCH routes, where possible. Where the Scheme would affect existing PRoW and bridleways, replacement network provision would be made to ensure routes remain open by providing suitable crossing points or diversions. Where new footpaths are required, they would be designed to be as fully accessible as possible.

12.8.24 All other measures are covered in respective Air quality (Chapter 5), Noise and vibration (Chapter 11), Landscape and visual effects (Chapter 7), Geology and soils (Chapter 9) and Road drainage and the water environment (Chapter 13) chapters of this ES (TR010034/APP/6.3).

Essential mitigation

Construction

12.8.25 Essential mitigation measures for noise and visual impacts during construction of the Scheme are outlined in the Noise and vibration (Chapter 11) and the Landscape and visual effects chapters (Chapter 7) of this ES.

Operation

12.8.26 No essential mitigation measures are required during operation of the Scheme in addition to those measures embedded in the Scheme design as outlined in Chapter 2: The Scheme. Essential mitigation measures for noise and visual impacts during operation of the Scheme are outlines in the Noise and vibration (Chapter 11) and the Landscape and visual effects chapters (Chapter 7) of this ES.

Enhancement measures

12.8.27 Tameside MBC's planned Hyde to Hollingworth cycleway scheme consists of a new cycle route between the settlements of Hyde and Hollingworth, through Godley, Hattersley and Mottram in Longdendale. Between Hattersley and Hollingtworth. Following consultation with Tameside MBC, the Applicant has ensured that the Scheme would tie in with the proposed cycle scheme in the future.

12.8.28 The existing footway along the A57 – Hyde Road, Mottram Moor, Woolley Lane would be improved to DMRB CD 143 Designing for walking, cycling and horse-riding standards or higher.

12.9 Assessment of likely significant effects

12.9.1 The Scheme has been designed, as far as possible, to avoid and minimise impacts and effects on population and human health through the process of design-development (refer to the Assessment of alternatives chapter (Chapter 3) of this ES (TR010034/APP/6.3)) considering good design principles. Embedded mitigation, defined within the DMRB LA 104 as 'Design measures which are integrated into a project for the purpose of minimising environmental effects', is reported as part of the scheme description in Chapter 2.

12.9.2 In relation to Land Use and Accessibility, as well as Human Health, it is important to note that the mitigation hierarchy outlined in DMRB LA 112 has been followed during the design process.

12.9.3 As detailed in the Environmental assessment methodology chapter (Chapter 4), construction of the Scheme would be subject to measures and procedures defined within the First iteration EMP (TR010034/APP/7.2) and the REAC (TR010034/APP/7.3). This EMP includes a range of measures associated with mitigating potential environmental impacts during Scheme construction. Measures detailed within the EMP would be developed into the Second iteration EMP refined during the construction stage for the consented project, in advance of construction, which would be prepared and implemented by the appointed Principal Contractor. The EMP would set out the environmental mitigation requirements during the Scheme construction and also the project level expectations on how the Scheme would be constructed in accordance with DRMB LA120 Environmental Management Plans[31].

12.9.4 Key embedded measures for air, noise and visual impacts during construction of the Scheme are outlined in the Air quality chapter (Chapter 5), Noise and vibration (Chapter 11), Landscape and visual effects (Chapter 7) chapters of this ES.

12.9.5 The following section presents the assessment findings in light of embedded mitigation during construction and operation of the scheme.

Construction

Land use and accessibility

Private property and housing

12.9.6 During construction, works have the potential to adversely impact private property and housing.

12.9.7 The assessment of the level of construction impact and residual effects is detailed in Table 12.14 below.

Table 12.14: Residual effects of construction activities on Private Property and Housing

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
Private property: - four residential properties on Four Lanes, - seven residential properties on Old Road, - six residential properties on Tollemache Close, - eight residential properties on Old Hall Land and	Potential impacts include: - Permanent land take/demolition	Medium	Major adverse	Large adverse (significant) Permanent, direct and irreversible
	Summary of Residual Effects	The magnitude of impact for the loss of these residential properties would be major adverse, resulting in **Large adverse** effects which is significant. All properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue. Other matters relating to Compensation are outside the scope of this assessment.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		
Private property - Four sheds on Four Lanes - Nine garages on Tollemache Close - A stable on Mottram Moor	Potential impacts include: - Permanent land take/ loss of garages and outbuildings	Medium	Moderate adverse	Moderate adverse (significant) Permanent, direct and irreversible
	Summary of Residual Effects	The magnitude of impact for the permanent land take and loss of garages and outbuildings at these properties would be moderate adverse, resulting in **Moderate adverse** effects, which is significant. This effect would be permanent, direct, and irreversible. All properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue.. Other matters relating to Compensation are outside the scope of this assessment.		

		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		
Houses - Approx. 4236 within study area	Potential impacts include - Temporary disruptions to access	Very high	Minor	Moderate adverse (significant) Temporary, indirect and reversible.
	Summary of Residual Effects	All houses within 500m of the DCO boundary may experience temporary disruptions. The magnitude of impact would be minor adverse, resulting in **Moderate adverse** effects, which is significant. This effect is temporary, indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption.		

		- Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Housing market - (removal of c. 25 houses from housing stock)	Potential impacts include - Changes to housing numbers	High	Minor	Slight adverse (not significant) Permanent, direct and irreversible
	Summary of Residual Effects	The introduction of a 'non-home-based' construction workforce into an area can impact capacity in the housing market. However, given the nature of these workers, the location of towns within proximity of the Scheme, the overall number predicted to work on the Scheme and the fact that only a small number are expected to reside within the Scheme itself, any impacts would be negligible, resulting in **Slight adverse** effects at worst, which is not significant. These effects would be temporary, direct and indirect, short-term and reversible. The maximum workforce during the Scheme construction phase has been estimated to be approximately 270 staff members, 200 of which would in the operational workforce.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - The appointed Principal Contractor would seek to use local suppliers and employ a local workforce for the construction phase, wherever possible. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Housing availability	Potential impacts include - Changes to housing numbers	High	Minor	Slight adverse (not significant) Temporary, direct and reversible

	- Additional pressures on housing availability owing to settlement of non-local construction workforce			
	Summary of Residual Effects	During construction, minor impacts are predicted to housing availability, resulting in **Slight adverse** effects, which is not significant. These effects would be permanent, direct and irreversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Community land and assets

12.9.8 During construction, works have the potential to adversely impact education, community services and other social infrastructure.

12.9.9 The assessment of the level of construction impact and residual effects is detailed in Table 12.15 below.

Table 12.15: Residual effects of construction activities on Community Land and Assets

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
Education, Healthcare and other Community Facilities within DCO Boundary - None	Potential impacts include: - N/A	N/A	N/A	N/A
	Summary of Residual Effects	No educational facilities, healthcare services or community facilities (e.g. places of worship, care homes/nursing homes, community halls etc.) would need to be demolished or displaced to construct or accommodate the Scheme. No land currently falling within the curtilage of essential community facilities such as schools, healthcare services or care homes/nursing homes would be required for land take for construction purposes or to accommodate the Scheme.		
		Embedded mitigation: - N/A **Essential mitigation** - N/A		
Open space, recreation and leisure time activities within DCO Boundary - Public Park / Garden (Communal Yard behind 2 to 15 Old Road) - Open Space (Land adjacent to Mottram Moor Farm)	Potential impacts include: - Permanent loss of land - Amenity impacts	Low	Major	Slight adverse (not significant) Permanent, direct and irreversible
	Summary of Residual Effects	The magnitude of impact for the loss of these areas of community and recreational land would major adverse resulting in **Slight adverse** effects, which is not significant. The effects would be permanent, direct and irreversible. Of note the area adjacent Mottram Moor Farm is understood to be an area of urban fringe not widely used within the community.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		- An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - The DCO boundary has been reviewed to minimise land take and avoid receptors where possible. - Minimising land take/habitat loss during construction would be through clearly demarcated with dedicated access routes, located outside of ecologically sensitive habitats. Habitat losses to be quantified to ensure no net loss (and where possible increase to provide more robust and resilient ecosystem) in quantity and quality. - The landscape proposals are designed to integrate the Scheme into the surrounding landscape, mitigate the loss of existing vegetation and habitats, as well as reduce the visual impacts through screening views of the Scheme. - All existing trees and shrubs not affected by the construction of the permanent works shall be fenced off with a suitable type of temporary fencing in accordance with BS5837. Fencing shall extend to the drip line of the tree canopies (unless otherwise agreed by an arboricultural advisor) and also to be erected prior to any construction activities in that area and shall remain for the entire period of construction in that area		
Education, Healthcare and other Community Facilities within study area - 25 community facilities including playgrounds, allotment gardens, a police station, leisure centre and community services centre	Potential impacts include: - Disruptions, changes to access	Medium	Minor adverse	Slight adverse (not significant) Temporary, direct and indirect and reversible

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
- 5 schools - 1 nursery - 43 health care facilities including a range of care/nursing homes, dental practice, GP and Doctors Surgery	- Viability or amenity impacts			
	Summary of Residual Effects	Minor disruption impacts are predicted for the education and community facilities (physical receptors) in the wider study area, resulting in **Slight adverse** effects which is not significant. Of note, there will also be particular disruption impacts to community facilities for those residents of Tollemache Close and Road and Hall Drive who may utilise these assts. Temporary closure is anticipated for 1 year during construction. These effects would therefore be direct and indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - Mottram Underpass is proposed to be constructed using the cut and cover method. It is currently planned that the underpass would be constructed in a number of sections. Three existing roads cross the underpass - Roe Cross Road, Old Road and Old Hall Lane. It is proposed that traffic flows would be maintained on Roe Cross Road and Old Road during underpass construction. This would use a temporary road which would be constructed adjacent to the existing roads. Traffic would then be diverted onto the temporary road until the works were completed and the existing roads reinstated in their previous locations. Old Hall Lane would be temporarily severed for the duration of the works in that area and closed for approximately one year. Access would be provided from either side of the works, and WCH along Old Hall Lane would be provided with a temporary diversion, for the duration of the closure. - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting.		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		- Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Open space, recreation and leisure time activities within study area - Public Open Space / Nature Reserve - Public Parks / Gardens	Potential impacts include: - Amenity impacts	Medium	Minor adverse	Slight adverse (not significant) Temporary, indirect and reversible
	Summary of Residual Effects	There are open space, recreation and leisure time activities within the study area which includes public open space / nature reserve and public parks / gardens. No significant effects are predicted for these facilities.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
		- An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		

Development land and business

12.9.10 During construction works have the potential to adversely impact development land and business.

12.9.11 The assessment of the level of construction impact and residual effects is detailed in Table 12.16 below.

Table 12.16: Residual effects of construction activities on Development land and business

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
Commercial/industrial premises within the DCO Boundary - Four units at Roe Cross Industrial Estate - Former Mottram Agricultural Showgrounds	Potential impacts include: - Demolition and permanent land take	High	Major adverse	Large adverse (significant) Permanent, direct and irreversible
	Summary of Residual Effects	Construction of the scheme will require the demolition of four no. units within Roe Cross Industrial Estate. It will also require land formally recognised as the Mottram Agricultural Showgrounds. Loss of these businesses and land is anticipated to cause major adverse impacts resulting in **Large adverse** effects, which is significant. Loss of the business land would be permanent, direct and irreversible All properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue. It is noted that the right to compensation, plus methods and procedures for assessing appropriate levels of such, would be identified in relation to the National Compensation Code and is outside the scope of this EIA.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		
		High	Minor adverse	Slight adverse (not significant)

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
Commercial/industrial premises within the DCO Boundary - Approximately 12 other local businesses/commercial premises/units predominantly associated with Roe Cross Industrial Estate and Hattersley Industrial Estate	Potential impacts include: - Temporary disruptions to access and trading conditions - Loss of amenity			Temporary, direct and indirect and reversible
	Summary of Residual Effects	Construction of the scheme will likely result in temporary disruptions to access and trading conditions as well as loss of amenity at approximately 12 no. local businesses. This is anticipated to cause minor adverse impacts for the physical receptor resulting in **Slight adverse** effects, which is not significant. Effects would be temporary, direct and indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		- The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Commercial/industrial premises within the wider study area - 415 local business/commercial premises including a range of retail, office, leisure, hotel, industrial, restaurant workshops and warehousing.	Potential impacts include: - Temporary disruptions to access and trading conditions - Loss of amenity	High	Minor adverse	Slight adverse (not significant) Temporary, indirect and reversible
	Summary of Residual Effects	Construction of the scheme will likely result in temporary disruptions to access and trading conditions as well as loss of amenity for commercial/industrial premises within the wider study area. This is anticipated to cause minor adverse impacts for the physical receptor resulting in **Slight adverse** effects, which is not significant. Effects would be temporary, indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Local businesses – Local job market Workforce of approximately 200 increasing to 270 at peak	Potential impacts include: - Effects on new employment receptors - Changes to trading conditions	High	Minor	Slight beneficial (not significant) Temporary, direct and reversible
	Summary of Residual Effects	The maximum workforce during the scheme construction phase has been estimated to be approximately 270 staff members which is not considered significant in terms of access to public health services and facilities. Job creation is anticipated to result in		

Land use	Description of Residual Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		slight beneficial effects, which is not significant. Effects would be temporary to the construction phase, direct and reversible.		
		Embedded mitigation: - The appointed Principal Contractor is anticipated to seek to use local suppliers and employ a local workforce for the construction phase, wherever possible. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Agricultural land holdings

12.9.12 In the construction phase around 24 ha of agricultural land will be permanently acquired and 8.3 ha of Farm holding A will be occupied temporarily for a compound. Additionally, around 2 ha of Farm holding F will be reduced in height for flood compensation.

12.9.13 Land temporarily acquired for construction will be restored to its original quality and returned to the landowner. The flood compensation area (FCA) will be returned to the landowner, but the soils will be of slightly poorer quality than before.

12.9.14 Effects of division of land on internal farm traffic and livestock movements, means the residual effect on individual holdings will be moderate or large adverse which is significant.

12.9.15 Table 12-17 summarises the main impacts on individual holdings, proposed mitigation and residual effect. Minor, mitigatable impacts, such as those to drainage and water supply, will have a neutral residual effect and are not included in the table.

12.9.16 Residual effects on all effected holdings, even with mitigation, are moderate or large adverse, which is significant.

12.9.17 Lesser construction impacts relate to damage to field drains and water supplies, and to noise and dust.

Table 12.17: Residual effects on Agricultural farm holdings

Holding	Size and land use	Sensitivity	Land-take and severance	Impact without mitigation	Mitigation	Impact with mitigation	Residual adverse effect
Farm holding A	48 ha Grazing	Medium	Loss of 18 ha (to new road and construction compound) Severance	Major	Restoration of 8.6 ha compound. Underpass to severed land	Moderate	Moderate (significant)
Mottram Show Ground	5.6 ha Grazing	Low	Loss of 3 ha. Severance	Major	Creation of access to severed portions	Moderate	Moderate (significant)
Farm holding B	5 ha Grazing	Medium	Loss of 0.75 ha Severance	Major	Creation of access to severed portions	Moderate	Moderate (significant)
Farm holding C	5 ha Equestrian	High	Loss of 1.2 ha	Major	None	Major	Large (significant)
Farm holding D	5.5 ha Grass and trees	Medium	Loss of 0.7 ha	Moderate	None	Moderate	Moderate (significant)
Farm holding E	75 ha Grazing	Medium	Loss of 8 ha Severance	Major	Creation of access to severed portions	Moderate	Moderate (significant)
Farm holding F	14 ha Grazing	Medium	Loss of 1 ha Severance	Major	Creation of access	Moderate	Moderate (significant)

Walkers Cyclists and Horse Riders

12.9.18 During construction works have the potential to adversely impact walkers, cyclists and horse riders.

12.9.19 The assessment of the level of construction impact and significance of effects is detailed in Table 12.18 below.

Table 12.18: Residual effects of construction activities on Walkers, cyclists and horse-riders

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
Active travel intersecting DCO boundary including - PRoW 32 - PRoW 50 - PRoW 51 - PRoW 52 - PRoW 87 - PRoW 88 - PRoW 90 / Transpennine Trail - Unnamed Footway 1[32] - Unnamed Footway 2[33] - Unnamed Footway 3[34]	Potential impacts to PRoW 35/10 include: Temporary diversion of 0.9km and approximately 12 minutes in duration	High	Major	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 50/10 include: - Temporary diversion of 0.7km and approximately 9 minutes in duration	High	Major	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 52/10 include: - Temporary diversion of 0.3km and approximately 4 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 51/20 include: - Temporary diversion of 0.22km and approximately 3 minutes in duration	High	Minor	Minor adverse (not significant) Temporary, direct and indirect and reversible

[32] Extends clockwise from Harrop Edge Road to Hyde Road on Hattersley Roundabout
[33] Extends west to east on Stockport Road, directly south of Hattersley Roundabout
[34] Extends south to north from Mottram Road to Harrop Edge Road

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
	Potential impacts to PRoW 52/10[35] include: - Temporary diversion of 0.5km and approximately 5 minutes in duration	High	Major	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 87/10 include: - Temporary diversion of 0.25km and approximately 3 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 88/60 include: - Temporary diversion of 0.28km and approximately 3 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to PRoW 90/10 include: - Temporary diversion of 0.44km and approximately 5 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible

[35]Extends south east on 52/10 to the intersection of 51/10 and 52/20

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
	Potential impacts to PRoW 52/20 and 52/30 include: - Temporary diversion of 0.43km and approximately 5 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to Unnamed Footway 1[32] include: - Temporary diversion of 0.26km and approximately 3 minutes in duration	High	Moderate	Moderate adverse (significant) Temporary, direct and indirect and reversible
	Potential impacts to Unnamed Footway 2[33] include: - Temporary diversion of 0.05km and approximately 5 minutes in duration	High	Minor	Minor adverse (not significant) Temporary, direct and indirect and reversible
	Potential impacts to Unnamed Footway 3[34] include: - Temporary diversion of 0.14km and approximately 2 minutes in duration	High	Minor	Minor adverse (not significant) Temporary, direct and indirect and reversible
	Summary of Residual Effects	PRoWs have been identified as requiring temporary closure during the works resulting in disruptions to access, pedestrian or cyclist delays and increases in journey length and/or time. A temporary moderate adverse impact would result in **Moderate adverse** effects, which is significant, for those with proposed		

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
		diversions of over 0.5km (PRoW 35/10, 50/10, 52/10, 52/10, 97/10,88/60, 90/10, 52/20, 52/30, Unnamed Footway 1[32] and **Minor adverse** (not significant) for those with proposed diversion less than 0.5km (PRoW 51/20, Unnamed Footway 2[33] and Unnamed Footway 3[34]). Of note all of these effects would be temporary, direct and indirect and reversible		
		Embedded mitigation: - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to: • Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works • Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**
Other Active Travel intersecting DCO Boundary - PROW 54/10 - PROW 35/10 - PROW 46/90 - PROW 49/20 - PROW 50/10,20 - PROW 51/10,20 - PROW 52/10,20, 30 - PROW 87/10 - PROW 88/60 - PROW 90/10 / Transpennine Trail - PROW 92/10 - PROW 175/5	Potential impacts include: - Temporary disruption to access / throughfare / connectivity disruptions	High	Minor adverse	Minor adverse (not significant) Temporary, indirect and reversible
	Summary of Residual Effects	Other PRoWs have been identified within the DCO boundary which may be subject to disruptions to access, pedestrian or cyclist delays and increases in journey length and/or time. This temporary minor adverse impact would result in **Minor adverse** effects which is not significant. These effects would be temporary, direct and indirect and reversible.		
		Embedded mitigation: - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to: • Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works • Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management		

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	**Impact Magnitude**	**Residual Effect**

		- Temporary diversion routes proposed for all PRoWs during construction works. Footpath diversions will utilise the following routes:
		  - Harp Edge Road
		  - Edge Lane
		  - A57(T) Hyde Road
		  - Stalybridge Road
		  - A6018 Roe Cross Road
		  - Old Hall Lane
		  - Creation of footpath linking Roe Cross Road with Old road and onto Old Hall Lane
		  - Creation of footpath linking Mottram Moor Road with PROW 87
		Essential mitigation
		  - No specific additional mitigation measures are proposed.		

Active Travel intersecting wider study area - 123 walking / cycling routes within study area including Transpennine Trail	Potential impacts include: - Throughfare / connectivity disruptions - Increased footfall as a result of diversions / temporary closures to other PRoWs	High	Minor adverse	Slight adverse (not significant) Temporary, indirect and reversible
	Summary of Residual Effects	There are 123 walking / cycling routes within the study area including the Transpennine Trail. Anticipated minor adverse impacts would result in **Slight adverse** effects which is not significant. These effects would be temporary, indirect and reversible.		
		Embedded mitigation: - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to:		

Land use	Description of Potential Impacts	Residual Effects on Land Use and Accessibility		
		Sensitivity of Land Use Receptor	Impact Magnitude	Residual Effect
		• Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works • Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Human health

12.9.20 The following tables present the potential impact and resulting health outcome category against the identified health determinants. Please refer back to Tables 12.6 and 12.7 which present the assigned sensitivity and identification of vulnerable groups.

Private property and housing

Table 12.19: Health outcome of construction activities on Private Property and Housing

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
Housing - Private property - Four residential properties on Four Lanes - Seven residential properties on Old Road - Six residential properties on Tollemache Close - Eight residential properties on Old Hall Lane	Potential impacts include: - Impact on health and wellbeing from loss of residence / displacement	High (i.e. residents of the affected properties that would be particularly vulnerable to change including those residents falling within one of the identified vulnerable groups -children, older people, people who are disabled and/or other health problems and low-income groups)	The permanent loss of residence / displacement of vulnerable residents (including children, older people, people who are disabled and/or other health problems and low-income groups) from properties.	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	The permanent loss of residence / displacement of residents not falling within one of the identified vulnerable groups.	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
	Summary of Health outcome	Some of the residents may fall within the identified vulnerable groups and may be particularly sensitive to change (e.g. elderly/persons who are physically or mentally impaired, children or adolescents).		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	Change to Health Determinant	Health Outcome Category
		The occupants of these properties would experience a **Negative** health outcome particularly in the short-term (0-5 years), when the greatest effect is expected. Worries over housing instability can result in distress and affect physical and mental health and social wellbeing, particularly for vulnerable groups. This adverse effect may reduce in future years as a sense of control and familiarity with new surroundings is re-established. Whilst a negative health outcome is predicted for these private residential properties this effect is a local factor only and small scale in the wider context of all private residential properties in the core study area (i.e. over 4,200 households). In this wider context, the impact of the loss of the 25 residential properties does not constitute adverse effect on the wider health determinant Housing as a whole. Note the right to compensation, plus methods and procedures for assessing appropriate levels of such, would be identified in relation to the National Compensation Code and is outside the scope of this EIA. Although the Applicant is endeavouring to acquire land by agreement, the rights to acquire the land required to deliver the Scheme are being sought by the Applicant through the DCO application and accompanying compulsory purchase process, to ensure that the Scheme can be delivered.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		
Housing - Private property - Four sheds on Four Lanes - Nine garages on Tollemache Close - A stable on Mottram Moor	Potential impacts include: - Health and wellbeing outcome from loss of garages / outbuildings	High (i.e. residents of the affected property that would be particularly vulnerable to change including those residents falling within one of the identified vulnerable groups)	The permanent loss of garages / outbuildings from residents falling within one of the vulnerable groups (including children, older people,	Negative – an adverse health outcome is identified Permanent, direct and irreversible and

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
			people who are disabled and/or other health problems and low-income groups)	as such includes the Future year Scenario
		Medium (working age residents at the affected property, not falling within one of the identified vulnerable groups)	The permanent loss of garages / outbuildings from residents falling outside any vulnerable groups	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
	Summary of Health outcome	The permanent loss of garages / outbuildings from residents either within or outside the identified vulnerable groups will result in a **Negative** health outcome. Note the right to compensation, plus methods and procedures for assessing appropriate levels of such, would be identified in relation to the National Compensation Code and is outside the scope of this EIA. Although the Applicant is endeavouring to acquire land by agreement, the rights to acquire the land required to deliver the Scheme are being sought by the Applicant through the DCO application and accompanying compulsory purchase process, to ensure that the Scheme can be delivered.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation**		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- No specific additional mitigation measures are proposed.		
Houses - Approx. 4236 within study area	Potential impacts include - Health and wellbeing outcome from amenity / access impacts	High (i.e. residents of the affected properties that would be particularly vulnerable to change including those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems and low income groups)	Housing within the study area may experience amenity and access impacts with resulting health and wellbeing effects for human receptors falling within one of the vulnerable groups (including children, older people, people who are disabled and/or other health problems and low-income groups) within the study area	Negative – an adverse health outcome is identified Temporary, indirect and reversible and as such is limited to the construction phase
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Health and wellbeing effects from amenity / access impacts on human receptors falling outside any vulnerable groups but within the study area	Negative – an adverse health outcome is identified Temporary, indirect and reversible and as such is limited to

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	Change to Health Determinant	Health Outcome Category
				the construction phase
	Summary of Health outcome	All houses within 500m of the DCO boundary may experience temporary disruptions and amenity impacts. This is anticipated to result in a **Negative** health outcome on human receptors falling within and outside any vulnerable group. This adverse effect is temporary, indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Housing market - (removal of 25 houses from housing stock)	Potential impacts include - Health and wellbeing outcome from changes in access to good quality housing	High (i.e. residents of the affected properties that would be particularly vulnerable to change i.e. those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems and low income groups)	Removal of 25 houses from housing stock with resulting health and wellbeing outcomes from change in access to housing	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Removal of 25 houses from housing stock with resulting health and wellbeing outcomes from	Negative – an adverse health outcome is identified Permanent, direct and

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
			change in access to housing	irreversible and as such includes the Future year Scenario
	Summary of Health outcome	The maximum workforce during the Scheme construction phase has been estimated to be approximately 270 staff members, 200 of which would in the operational workforce at peak. The introduction of a 'non-home-based' construction workforce into an area can impact capacity in the housing market. While given the nature of these workers, the location of towns within proximity of the Scheme, the overall number predicted to work on the Scheme and the fact that only a small number are expected to reside within the Scheme itself, a **Negative** health outcome anticipated. These effects would be temporary, direct and indirect, short-term and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - The appointed Principal Contractor would seek to use local suppliers and employ a local workforce for the construction phase, wherever possible. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Housing availability	Potential impacts include - Health and wellbeing outcome from changes in access to good quality housing	High (i.e. residents of the affected properties that would be particularly vulnerable to change i.e. those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems and low income groups)	Reduction in housing availability during construction with the influx of non-home-based workforce and resulting health	Negative – an adverse health outcome is identified Temporary, direct and reversible

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Land Use Receptor	**Change to Health Determinant**	**Health Outcome Category**
			and wellbeing impacts	and limited to the construction phase
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Reduction in housing availability during construction with the influx of non-home-based workforce and resulting health and wellbeing impacts	Negative – an adverse health outcome is identified Temporary, direct and reversible and limited to the construction phase
	Summary of Health outcome	During construction, minor impacts are predicted to housing availability, which is anticipated to result in a **Negative** health outcome for the local population within and outside identified vulnerable groups. This adverse effect would be temporary, direct and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Community land and assets

Table 12.20: Health outcome of construction activities on Community land and assets

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
Education, Healthcare and other Community Facilities within DCO Boundary - None	Potential impacts include: - N/A	N/A	N/A	N/A
	Summary of Health outcome	No educational facilities, healthcare services or community facilities (e.g. places of worship, care homes/nursing homes, community halls etc.) would need to be demolished or displaced to construct or accommodate the Scheme. No land currently falling within the curtilage of essential community facilities such as schools, healthcare services or care homes/nursing homes would be required for land take for construction purposes or to accommodate the Scheme.		
		Embedded mitigation considered: - N/A **Essential mitigation** - N/A		
Open space, recreation and leisure time activities within DCO Boundary - Public Park / Garden (Communal Yard behind 2 to 15 Old Road) - Open Space (Land adjacent to Mottram Moor Farm)	Potential impacts include: - Loss of amenity - Health and wellbeing outcome from loss / reduction in access	High (i.e. residents of the affected properties that would be particularly vulnerable to change i.e. those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems, low income groups and ethnic minority groups)	Loss of and / or reduction in access to public park / garden and undesignated open space with resulting health and wellbeing impacts	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Loss of and / or reduction in access to public park / garden and undesignated open space with resulting health and wellbeing impacts	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
	Summary of Health outcome	The loss of these areas of community and recreational land is anticipated to result in a **Negative** health outcome. These adverse effects would be the same for all groups and would be permanent, direct and irreversible. Of note the area adjacent Mottram Moor Farm is understood to be an area of urban fringe not widely used within the community.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling,		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - The DCO boundary has been reviewed to minimise land take and avoid receptors where possible. - Minimising land take/habitat loss during construction would be through clearly demarcated with dedicated access routes, located outside of ecologically sensitive habitats. Habitat losses to be quantified to ensure no net loss (and where possible increase to provide more robust and resilient ecosystem) in quantity and quality. - The landscape proposals are designed to integrate the Scheme into the surrounding landscape, mitigate the loss of existing vegetation and habitats, as well as reduce the visual impacts through screening views of the Scheme. - All existing trees and shrubs not affected by the construction of the permanent works shall be fenced off with a suitable type of temporary fencing in accordance with BS5837. Fencing shall extend to the drip line of the tree canopies (unless otherwise agreed by an arboricultural advisor) and also to be erected prior to any construction activities in that area and shall remain for the entire period of construction in that area **Essential mitigation** - No specific additional mitigation measures are proposed.		
Education, Healthcare and other Community Facilities within study area - 25 community facilities including playgrounds, allotment gardens, a police station, leisure centre and community services centre - 5 schools - 1 nursery - 43 health care facilities including a range of care/nursing homes,	Potential impacts include: - Health and wellbeing outcome from disruptions, amenity impacts and changes to access - Health and wellbeing outcome from reduced access to public services	High (i.e. residents of the affected properties that would be particularly vulnerable to change i.e. those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems , low income groups and ethnic minority groups)	Health and wellbeing outcomes as a result of changes in access and amenity impacts on community facilities within the study area and resulting	Negative – an adverse health outcome is identified Temporary, indirect and reversible and limited to the construction phase

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
dental practice, GP and Doctors Surgery			health and wellbeing outcomes	
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Health and wellbeing outcomes as a result of changes in access and amenity impacts on community facilities within the study area and resulting health and wellbeing outcomes	Negative – an adverse health outcome is identified Temporary, indirect and reversible and limited to the construction phase
	Summary of Health outcome	Minor disruption impacts are predicted for the education and community facilities in the wider study area, resulting in a **Negative** health outcome for wider groups and those falling within one of the identified vulnerable groups. These negative health outcomes are anticipated to be temporary, indirect and reversible and limited to the construction phase.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Open space, recreation and leisure time activities within study area - Public Open Space / Nature Reserve	Potential impacts include:	High (i.e. residents of the affected properties that would be particularly vulnerable to change	Loss / reduction in amenity and changes and	Negative – an adverse health outcome is identified

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
- Public Parks / Gardens	- Health and wellbeing outcome from loss / reduction in amenity - Change in access - Health and wellbeing outcome from change / disruption to access	i.e. those residents falling within one of the identified vulnerable groups (children, older people, people who are disabled and/or other health problems , low income groups and ethnic minority groups)	disruption to access to open space, recreation and leisure time activities within the study area	Temporary, indirect and reversible and limited to the construction phase
		Medium Wider population (working age residents at the affected properties, not falling within one of the identified vulnerable groups)	Loss / reduction in amenity and changes and disruption to access to open space, recreation and leisure time activities within the study area	Negative – an adverse health outcome is identified Temporary, indirect and reversible and limited to the construction phase
	Summary of Health outcome	There are open space, recreation and leisure time activities within the study area which includes public open space / nature reserve and public parks / gardens. A **Negative** health outcome is anticipated as a result of health and wellbeing impacts from loss / reduction in amenity, changes and disruption to access.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		

Development land and business

Table 12.21: Health outcome of construction activities on Development land and business

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
Commercial/industrial premises within the DCO Boundary - Four units at Roe Cross Industrial Estate - Former Mottram Agricultural Showgrounds	Potential impacts include: - Health outcomes from loss of property and permanent displacement of business and their workers - Health and wellbeing; worry over employment instability can result in distress and affect physical and mental health and wellbeing, particularly for vulnerable groups	Low Wider group – (including the owners of the businesses), children and adolescents, older people and ethnic minority groups	Permanent loss of property and displacement of business and their workers leading to potential impacts on health and wellbeing through economic uncertainty leading to stress etc. Note absolute numbers of workers are anticipated to be low as there are a small number of businesses on a site <1 ha in size.	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
		Medium People who are disabled and/or with other health problems	Permanent loss of property and displacement of business and their workers	Negative – an adverse health outcome is identified Permanent, direct and irreversible and as such includes the Future year Scenario
		High Low income groups	Permanent loss of property and displacement of business and their workers	Negative – an adverse health outcome is identified

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
				Permanent, direct and irreversible and as such includes the Future year Scenario
	Summary of Health outcome	Construction of the scheme will require the demolition of four no. units within Roe Cross Industrial Estate. It will also require land formally recognised as the Mottram Agricultural Showgrounds. Loss of these businesses and land is anticipated to result in a **Negative** health outcome. Loss of the business land would be permanent, direct and irreversible. Note the right to compensation, plus methods and procedures for assessing appropriate levels of such, would be identified in relation to the National Compensation Code and is outside the scope of this EIA. Although the Applicant is endeavouring to acquire land by agreement, the rights to acquire the land required to deliver the Scheme are being sought by the Applicant through the DCO application and accompanying compulsory purchase process, to ensure that the Scheme can be delivered.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		
Commercial/industrial premises within the DCO Boundary - Approximately 12 other local businesses/commercial premises/units predominantly associated with Roe Cross Industrial Estate and Hattersley Industrial Estate	Potential impacts include: - Health and wellbeing outcomes from disruptions to access, potential severance and loss of amenity	Low Wider group, children and adolescents, older people and ethnic minority groups	Disruptions to access, potential severance and loss of amenity to businesses within the DCO boundary with resulting health and wellbeing impacts. Note absolute numbers of workers are anticipated to be low as there are a small number of businesses.	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
				limited to the construction phase
		Medium People who are disabled and/or with other health problems	Disruptions to access, potential severance and loss of amenity to businesses within the DCO boundary with resulting health and wellbeing impacts	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		High Low income groups	Disruptions to access, potential severance and loss of amenity to businesses within the DCO boundary with resulting health and wellbeing impacts	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	Construction of the scheme will likely result in temporary disruptions to access and trading conditions as well as loss of amenity at approximately 12 no. local businesses. This is anticipated to result in a **Negative** health outcome. Effects would be temporary, direct and indirect and reversible.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. **Essential mitigation** - No specific additional mitigation measures are proposed.	
Commercial/industrial premises within the wider study area	Potential impacts include: - Health and wellbeing outcomes from	Low Wider group, children and adolescents,	Disruptions to access, potential severance and loss of amenity to commercial/industrial premises within the wider study area.	Negative – an adverse health

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
- 415 local business/commercial premises including a range of retail, office, leisure, hotel, industrial, restaurant workshops and warehousing.	disruptions to access, potential severance and loss of amenity.	older people and ethnic minority groups		outcome is identified Temporary, indirect and reversible and limited to the construction phase
		Medium People who are disabled and/or with other health problems	Disruptions to access, potential severance and loss of amenity to commercial/industrial premises within the wider study area.	Negative – an adverse health outcome is identified Temporary, indirect and reversible and limited to the construction phase
		High Low income groups	Disruptions to access, potential severance and loss of amenity to commercial/industrial premises within the wider study area.	Negative – an adverse health outcome is identified Temporary, indirect and reversible
	Summary of Health outcome	Construction of the scheme will likely result in temporary disruptions to access and trading conditions as well as loss of amenity for commercial/industrial premises within the wider		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		study area. This is anticipated to result in a Negative health outcome. Effects would be temporary, indirect and reversible.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - Lighting of the Scheme would be designed to minimise light spill and would be restricted to areas where the construction site or carriageway needs to be lit for health and safety reasons. Lighting levels and uniformity of light would be maintained to a minimum, to reduce light spillage and energy usage. Light spill from temporary lighting at construction compounds and at other locations would be minimised beyond the compounds and working areas by the use of directionally controlled lighting. - Work during hours of darkness would be avoided as far as practicable, and where necessary, directed lighting would be used to minimise light pollution/glare. Lighting levels would be kept to the minimum necessary for security and safety. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including the maintenance of public transport routes and stops - The phasing of land take for construction works would also be planned to enable early release of land and thereby minimise the extent of disruption. - Where sensitive receptors do fall within the DCO boundary, construction impacts, particularly for temporary land-take (e.g. for site compounds and material storage areas), have been designed out/minimised as far as possible. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. **Essential mitigation**		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- No specific additional mitigation measures are proposed.		
Local businesses – Local job market Workforce of approximately 200 increasing to 270 at peak	Potential impacts include: - Health and wellbeing outcomes from creation of local jobs, skills and training and benefits to supply chain from local procurement of goods and services - Health and wellbeing outcomes from economic benefits of construction could stimulate the local economy and local job market, including the multiplier effect	Low Wider groups – working age population	Improvement in local business productivity and job market with creation of approximately 200 – 270 jobs at peak construction, leading to increased economic opportunities and consequent reduction in stress etc.	Positive – a beneficial health outcome is identified Temporary, direct and reversible and limited to the construction phase
	Summary of Health outcome	The maximum workforce during the scheme construction phase has been estimated to be approximately 270 staff members which is not considered significant in terms of access to public health services and facilities. Job creation is anticipated to result in **Positive** health outcome. Effects would be temporary to the construction phase, direct and reversible.		
		Embedded mitigation: - The appointed Principal Contractor is anticipated to seek to use local suppliers and employ a local workforce for the construction phase, wherever possible. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Walkers, Cyclists and Horse Riders

Table 12.22: Health outcome of construction activities on Walkers, cyclists and horse riders

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
Active travel intersecting DCO boundary including - PRoW 50 - PRoW 51 - PRoW 52 - PRoW 87 - PRoW 88 - PRoW 90 / Transpennine Trail	Potential impacts include: - Health and wellbeing outcome from temporary loss of amenity	Medium All groups	Temporary severance, disruptions to access, pedestrian or cyclist delays and loss of amenity leading to reduction in healthy activities such as walking, cycling and horse riding	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	PRoWs have been identified as requiring temporary closure during the works resulting in disruptions to access, pedestrian or cyclist delays and increases in journey length and/or time. This is anticipated to result in a **Negative** health outcome. These effects would be temporary, direct and indirect and reversible. The effects would be the same for all groups.		
		Embedded mitigation: - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to: • Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works • Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.	
Other Active Travel intersecting DCO Boundary - PROW 54/10 - PROW 35/10 - PROW 46/90 - PROW 49/20 - PROW 50/10,20 - PROW 51/10,20 - PROW 52/10,20, 30 - PROW 87/10 - PROW 88/60 - PROW 90/10 / Transpennine Trail - PROW 92/10 - PROW 175/5	Potential impacts include: - Health and wellbeing outcome from temporary loss of amenity	Medium All groups	Temporary loss of amenity for users of active travel provisions within the DCO boundary	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	Other PRoWs have been identified within the DCO boundary which may be subject to disruptions to access, pedestrian or cyclist delays and increases in journey length and/or time. This is anticipated to result in a **Negative** health outcome. These effects would be temporary, direct and indirect and reversible. The effects would be the same for all groups.		
		Embedded mitigation: - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to: • Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		• Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - Temporary diversion routes proposed for all PRoWs during construction works. Footpath diversions will utilise the following routes: - Harp Edge Road - Edge Lane - A57(T) Hyde Road - Stalybridge Road - A6018 Roe Cross Road - Old Hall Lane - Creation of footpath linking Roe Cross Road with Old road and onto Old Hall Lane - Creation of footpath linking Mottram Moor Road with PROW 87 **Essential mitigation** - No specific additional mitigation measures are proposed.		
Active Travel intersecting wider study area	Potential impacts include:	Medium All groups	Temporary loss of amenity and loss of active travel opportunities within the study area	Negative – an adverse health outcome is identified

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
- 123 walking / cycling routes within study area including Transpennine Trail	- Health and wellbeing outcome from temporary loss of amenity - Health and wellbeing outcomes from loss of active travel opportunities.			Temporary, indirect and reversible and limited to the construction phase
	Summary of Health outcome	There are 123 walking / cycling routes within the study area including the Transpennine Trail. Temporary loss of amenity and loss of active travel opportunities within the study area is anticipated to result in a **Negative** health outcome. These effects would be temporary, indirect and reversible. The effects would be the same for all groups.		
		Embedded mitigation considered: - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW including, but not limited to: • Users of affected PRoW, footpaths and cycleways would be notified of planned diversions and closures, with signs along sections to be closed during construction, at least one month prior to the works • Construction works would be programmed so that affected PRoW, footpaths or cycleways remain open for part, or the duration, of the construction period, and also that other routes can act as a diversion route for those affected • Clear signage and provision of access information for all users during construction and before operation would be provided • Public transport routes and stops would be maintained/disruption managed. - The provision of screening during construction to reduce impact to setting for designated assets, visual receptors such as residential areas, users of PRoW and farmsteads. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management **Essential mitigation** - No specific additional mitigation measures are proposed.		

Safety / Risk of injury and death

Table 12.23: Health outcome of construction activities on Safety / Risk of injury and death

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
Compounds	Potential impacts include: - Unauthorised access/trespass resulting in injuries or loss of life from slips, trips, falls and conflict with plant, vehicles and materials - Criminal behaviours could result in on-site conflicts and threats of violence, resulting in personal injury	Medium Wider groups and people who are disabled and/or with other health problems, low-income groups and ethnic minority groups	Injuries or loss of life from slips, trips and falls, conflict with plant, vehicles and materials, threats of violence from unauthorised access/ trespass	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		High Children and adolescents, older people	Injuries or loss of life from slips, trips and falls, conflict with plant, vehicles and materials, threats of violence from unauthorised access/ trespass	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	The risks of injuries and death for contractors working on the Scheme and the public from unauthorised access and trespass that could result in slips, trips, falls and conflict with plant, vehicles and materials has the potential to result in a Negative health outcome. These risks would be temporary, direct and indirect and short-term. Unauthorised or criminal behaviour could lead to additional risks such as on-site conflicts and threats of violence.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Road infrastructure within study area - Roads, vehicles, diversion routes	Potential impacts include: - Injuries or loss of life from construction traffic, increased traffic levels and an unawareness of altered traffic movements, particularly from sensitive road users (e.g. motorcyclists, elderly drivers, children, pedestrians, new drivers and cyclists).	Medium Wider groups and people who are disabled and/or with other health problems, low-income and ethnic minority groups	Injury or loss of life from construction traffic, increased traffic levels and an unawareness of altered traffic movements	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		High Children and adolescents, older people	Injury or loss of life from construction traffic, increased traffic levels and an unawareness of altered traffic movements	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
				to the construction phase
	Summary of Health outcome	There is a significant public/pedestrian and cyclist interface risk from the introduction of construction traffic and activities and there is increased risk with heavy plant, equipment, and material. This is anticipated to result in a **Negative** health outcome. These effects would be temporary, direct and indirect and reversible Vulnerable road users such as motorcyclists, elderly drivers, new drivers, children, pedestrians and cyclists would be most at risk.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Utilities network including existing transmission and distribution utility networks	Potential impacts include: - Risk to human health, particularly during utilities diversions or installations	Medium Wider groups and people who are disabled and/or with other health problems, low-income and ethnic minority groups	Utilities diversions or installations have the potential to increase risk to human health	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
				to the construction phase
		High Children and adolescents, older people	Utilities diversions or installations have the potential to increase risk to human health	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	Any conflict, damage, leaks and/or blocks to utility network have the potential to result in a **negative** health outcome. These effects would be temporary, direct, short-term and reversible. There is also a risk of injury or loss of life for construction workers from explosion or asphyxiation or other effects from leaks or damaged utilities.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation**		

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		- No specific additional mitigation measures are proposed.		
Buried services	Potential impacts include - Risk to human health from leaks or conflict with buried services during physical works	Medium Wider groups and people who are disabled and/or with other health problems, low-income and ethnic minority groups	Conflicts with buried services during physical works have the potential to increase risk to human health	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		High Children and adolescents, older people	Conflicts with buried services during physical works have the potential to increase risk to human health	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	Conflict, damage, leaks and/or blocks to buried services have the potential to result in a **Negative** health outcome. These effects would be temporary, direct, short-term and reversible. There is also a risk of injury or loss of life for construction workers from explosion or asphyxiation or other effects from leaks or damaged buried services.		
		Embedded mitigation: - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management		

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
		- An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. **Essential mitigation** - No specific additional mitigation measures are proposed.		

Transport options

Table 12.24: Health outcome of construction activities on Transport options

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
Transport options within DCO Boundary Buses, road infrastructure including 5 bus shelters	Potential impacts include - Health and wellbeing outcomes from loss of access to public transport - Health and wellbeing outcomes from temporary closure, modification or diversion of local roads and routes - Disruptions to normal activities / journeys	High – people who are disabled and/or with other health problems and older people and those in low-income groups	Loss of access to public transport, temporary closure, modifications or diversions to local roads and disruptions to normal journeys with resulting health and wellbeing outcomes	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		Medium (wider groups, children and adolescents and ethnic minority groups)	Loss of access to public transport, temporary closure, modifications or diversions to local roads and disruptions to normal journeys with resulting health and wellbeing outcomes	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
	Summary of Health outcome	There is potential for the Scheme to have temporary adverse effects on transport options within the DCO Boundary, particularly the highway network and public transport routes during construction. The roads in the study area will need to be modified, diverted or closed temporarily to facilitate the construction works. Motorised vehicle travellers and/or other public transport users in the study area are likely to face temporary disruptions to travel activity, delays and/or increased commuter times due to construction activities, increases in construction vehicles, introduction of restrictions and diversion routes and traffic management. This may result in some wider groups and vulnerable groups having to change their travel patterns or find alternative arrangements. Lower income groups and vulnerable		

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		groups could be disproportionately affected by any impacts. This is therefore considered to result in a **Negative** health outcome.		
		Embedded mitigation considered: - An Environmental Management Plan would include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Transport options within study area Buses, road infrastructure including 22 bus shelters	Potential impacts include - Health and wellbeing outcomes from change in access to public transport - Health and wellbeing outcomes from temporary closure, modification or diversion of local roads and routes - Disruptions to normal activities / journeys	High – people who are disabled and/or with other health problems and older people and low-income groups	Loss of access to public transport, temporary closure, modifications or diversions to local roads and disruptions to normal journeys within the study area	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase
		Medium (wider groups, children and adolescents and ethnic minority groups)	Loss of access to public transport, temporary closure, modifications or diversions to local roads and disruptions	Negative – an adverse health outcome is identified Temporary, direct and indirect and reversible and limited to the construction phase

Health Determinant	Description of Potential Impacts	Health outcome on Human Health/ Wider Determinant of Health		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
			to normal journeys within the study area	
	Summary of Health outcome	There is potential for the Scheme to have temporary adverse effects on transport options within the wider study area, particularly the highway network and public transport routes during construction resulting in a **Negative** health outcome. These effects would be temporary, direct and indirect and reversible.		
		Embedded mitigation: - An Environmental Management Plan will include measures for the construction phase, such as Best Practicable Means. - The EMP would include measures to avoid, minimise and reduce impacts on users of PRoW - The construction programme would also be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas would be cleared for construction as close as possible to works commencing and top soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete. - A Community Engagement Plan, outlining the methods in which the local and surrounding community will be engaged during construction of the Scheme including contact details for key site management. **Essential mitigation** - No specific additional mitigation measures are proposed.		

Air pollution

12.9.21 During construction, the proposed works have the potential to impact air pollution through:

- Increased emissions of dust

12.9.22 This is therefore associated with an adverse impact on health and wellbeing and a Negative health outcome. See Chapter 5 for full consideration of Air quality

Noise and Vibration

12.9.23 During construction, the proposed works have the potential to impact noise and vibration through:

- Exposure of adjacent residents and businesses to dust migrating off-site during earthworks
- Exposure of residents in the vicinity of Mottram underpass to construction noise

This is therefore associated with an adverse impact on health and wellbeing and a Negative health outcome. See Chapter 11 for full details.

Landscape amenity

12.9.24 During construction, the proposed works have the potential to impact landscape amenity through:

- Loss of vegetation, alteration to the landform, the presence of construction machinery as well as the introduction of man-made features
- Demolition of built form which would include properties on Four Lanes, Roe Cross Industrial estate, Old Road, Tollemache Close, Old Hall Lane and Mottram Moor; to facilitate construction of Mottram underpass, Mottram junction and the new junction on Woolley Lane
- Temporary spoil heaps, material storage, and site compounds would occur throughout the construction phase
- The introduction of new structures and/or the changes to existing structures specifically at junctions, underpasses and bridges
- The formation of temporary drainage features within or on the fringes of the construction areas
- Lighting associated with construction and night-time working
- Plant, machinery and traffic management would be conspicuous in views of the existing A57 corridor, highlighting the presence of the A57 and the changes occurring within it; and
- Temporary realignments and diversions as part of traffic management operations.

12.9.25 The visual receptors may also be affected by views of heavy goods vehicle (HGVs), temporary construction lighting and other tall machinery used within the construction site.

12.9.26 Temporary impacts to visual receptors during construction are likely to result from:

- Vegetation clearance to facilitate construction is anticipated to occur during the initial mobilisation phase. The result would be newly exposed views of the wider landscape and the construction activity therein
- Temporary spoil heaps, material storage, and site compounds would occur throughout the construction phase. The result would be changes to the perception of the existing A57 and the broader landscape associated with the corridor
- Lighting associated with construction and night-time working
- Plant, machinery and traffic management would be conspicuous in views of the existing A57 corridor, highlighting the presence of the A57 and the changes occurring within it.

12.9.27 Impacts on visual amenity would result from the construction of the associated large-scale earthworks and clearance of vegetation.

- Demolition of built form which would include properties on Four Lanes, Roe Cross Industrial estate, Old Road, Tollemache Close, Old Hall Lane and Mottram Moor; to facilitate construction of Mottram underpass, Mottram junction and the new junction on Woolley Lane
- Sequential views from footpaths and traffic routes temporarily be towards the construction areas
- The introduction of new structures and/or the changes to existing structures specifically at junctions, underpasses and bridges
- Structures including overbridges, underpasses (both vehicular and non-motorised user underpasses) and retaining walls.

12.9.28 This is therefore associated with adverse impacts on health and wellbeing and a Negative health outcome. See Chapter 7 for a full consideration of Landscape and visual effects.

Soil and Water Pollution

12.9.29 During construction, the proposed works have the potential to impact soil and water pollution through:

- Exposure of adjacent residents and businesses to dust migrating off-site during earthworks
- Contaminants mobilised during construction including residents exposed to contaminated ground water via abstractions.

12.9.30 This is therefore associated with an adverse impact on health and wellbeing and a Negative health outcome. See Chapter 9 and Chapter 13 for full consideration of Soil and Water Pollution

Social cohesion and lifetime neighbourhoods

12.9.31 During construction, the proposed works have the potential to impact social cohesion and lifetime neighbourhoods through:

- Severance in access to these areas and some of the surrounding areas, temporary impacts to roads, areas of public open space, PRoW, footpaths and access to local facilities. Construction impacts may also lead to several environmental issues (e.g. noise, construction traffic, severance, visual impacts, air quality, dust and odour etc.) and disruptions to access
- Social impacts and risks that could affect health and community cohesion through the introduction of a non-home-based workforce (i.e. construction workers and contractors)
- Loss of former Mottram Agricultural Showgrounds and of cricket grounds have been identified in relation to social cohesion and lifetime neighbourhoods however, it is understood that neither the showgrounds or cricket grounds are used.

12.9.32 This is associated with adverse impacts on health and wellbeing and a Negative health outcome is therefore anticipated.

Operation

Land use and accessibility

12.9.33 As per DMRB LA 112, consideration has been made up to year 1 of operation after which it is considered that land use and accessibility effects associated with routine maintenance operations are unlikely to be significant.

Private property and housing

12.9.34 During operation it is not anticipated there would be any significant impacts to private property and housing beyond that which is identified in other disciplines.

12.9.35 Any temporary land take from private property and housing during construction would be returned to its original condition on completion of the works and no significant impacts are predicted.

12.9.36 There may be some direct and indirect effects on the local housing market and housing availability due to improved connectivity, reduced congestion, reduced and more reliable journey times, and overall improvements to access, however any impacts are not predicted to be significant.

Community land and assets

12.9.37 Operational activities are not anticipated to impact on community land and assets beyond that which is identified in other disciplines. Disruptions and changes to access as a result of construction activities would all be alleviated on completion of the scheme.

12.9.38 Provision of improved pedestrian and cyclist crossing facilities and new underpasses to maintain farm access and provide a safe route for walkers, cyclists and horse riders ensures access to existing community land and assets is maintained and improved during operation.

Development land and business

12.9.39 Operational activities are not anticipated to have significant effects on development land and business beyond that which is identified in other disciplines. Disruptions and changes to access as a result of construction activities would all be alleviated on completion of the scheme.

12.9.40 There may be some direct and indirect positive effects on businesses and the job market within the study area due to improved connectivity, reduced congestion, reduced and more reliable journey times, and overall improvements to access, however any impacts are not predicted to be significant.

12.9.41 As developments identified in Table 12.12, as being within the GMSF[36] and High Peak Local Plan are constructed and come into active use, it is expected that there will be a noticeable increase in the amount of traffic over and above the existing conditions. Without improvements that the Scheme will bring, the road network will become highly congested resulting in considerable delays. Therefore, the Scheme presents a beneficial impact on land use and accessibility and opportunity to support and facilitate development growth.

Agricultural land holdings

12.9.42 There will be no operational impacts on land use as highway and landscape maintenance will take place within the highway boundary.

12.9.43 Permanent land acquisition will decrease the size of the affected holdings. All affected holdings will be divided by the new road, which will mean longer journey times for vehicles and livestock being transported to several fields.

12.9.44 The combination of land-take and division of the holdings will have moderate to major impacts, producing moderate to large adverse effects which are significant.

[36] The GMSF is now no longer being progressed but potential allocations are still considered as these could still be brought forward under any similar replacement Plan

Walkers Cyclists and Horse Riders

12.9.45 The WCR assessment (refer to section 12.6.18) was undertaken to gain a better understanding of the local needs. The purpose of this report was to provide an assessment of the existing facilities and provision for pedestrians, cyclists and equestrians to help understanding of the local needs and inform decision making throughout the design process. The WCR assessed the existing rights of ways and investigated how they can be improved for the design and how they can be enhanced. The proposals were presented to WCH groups during statutory consultation and comments were taken and addressed. Furthermore, the public consultation response form including a dedicated question on the WCH provisions incorporated into the scheme. Where appropriate, the opportunities for improvements and enhancements identified have been considered through the Preliminary Design process, and will be re-visited at appropriate stages, such as Detailed Design stage.

12.9.46 During the operational phase of the scheme a communication plan, which would help inform the local community (particularly residents, employees, road users and WCH) of the improvements to accessibility, connectivity and journey times delivered would be prepared.

12.9.47 All WCH provision on the existing A57(T) and A57 would be maintained with possible improvements that would be agreed with the relevant local highway authorities. Any cycle lanes delivered by the Scheme would be designed for future cycle lane connectivity along the de-trunked corridor.

12.9.48 WCHs would be encouraged to use facilities provided along the existing A57 corridor. For safety reasons, WCHs would be prohibited from using the section of the Mottram Moor Link Road between the Old Mill Underpass and Mottram Moor Junction, due to the Mottram Underpass however improved pedestrian and cyclist crossing facilities at the M67 Junction 4, and all new junctions created by the scheme would be realised. Further PRoW LON 52-20, which will be temporarily severed during construction, will be re-instated and upgraded from a footpath to a bridleway, therefore increasing the availability of suitable equestrian facilities away from road traffic.

12.9.49 A combined footway and cycleway along the new A57 Link Road between Mottram Moor and Woolley Bridge, creating a route to link Mottram to the Trans-Pennine Trail (National Cycle Network route 62).

12.9.50 Moderate beneficial impacts to the existing walking, cycling and horse-riding network are anticipated to result in Moderate beneficial effects for WCH's, which is significant.

Human health

12.9.51 As per DMRB LA 112, consideration has been made up to year 15 of operation after which it is considered that human health effects associated with routine maintenance operations are unlikely to be significant.

Private property and housing

12.9.52 During operation it is not anticipated there would be any significant impacts to private property and housing other than any potential amenity impacts reported by the other technical disciplines.

12.9.53 Any temporary land take from private property and housing during construction would be returned to its original condition on completion of the works. A neutral health outcome is therefore attributed.

Community land and assets

12.9.54 Operational activities are not anticipated to impact on community land and assets beyond that which is identified in other disciplines. Amenity impacts as a result of construction activities would all be alleviated on completion of the scheme.

12.9.55 Provision of improved pedestrian and cyclist crossing facilities and new underpasses to maintain farm access and provide a safe route for walkers, cyclists and horse riders ensures access to existing community land and assets is maintained and improved during operation. As such, a Positive health outcome is anticipated.

Development land and business

12.9.56 Operational activities are not anticipated to have significant effects on development land and business beyond that which is identified in other disciplines. Amenity impacts as a result of construction activities would all be alleviated on completion of the scheme.

12.9.57 There may be some direct and indirect effects on businesses and the job market within the study area due to improved connectivity, reduced congestion, reduced and more reliable journey times, and overall improvements to access with subsequent benefits to human health and wellbeing through reduction in stress, etc.

12.9.58 As developments identified in Table 12.12, as being within the GMSF[37] and High Peak Local Plan are constructed and come into active use, it is expected that there will be a noticeable increase in the amount of traffic over and above the existing conditions. Without improvements that the Scheme will bring, the road network will become highly congested resulting in considerable delays. Therefore, the Scheme presents a beneficial impact and opportunity to support and facilitate development growth.

12.9.59 As a result, a Positive health outcome is anticipated.

[37] The GMSF is now no longer being progressed but potential allocations are still considered as these could still be brought forward under any similar replacement Plan

Agricultural land holdings

12.9.60 Permanent land acquisition will decrease the size of the affected holdings. All affected holdings will be divided by the new road, which will mean longer journey times for vehicles and livestock being transported to several fields however, this is unlikely to impact significantly on health and wellbeing. A Negative health outcome is anticipated, reducing over time to Neutral as new working methods and practices become established for respective farm holdings.

Landscape amenity

12.9.61 The Scheme has been designed to avoid or reduce, as far as practicable, the adverse effects. Landscape and visual essential mitigation measures, which form an integral part of the Scheme, include native woodland, shrub planting, and linear planting, roadside specimen trees, grassland meadows and amenity grassland and verges. The Scheme also includes some use of cuttings, false cuttings and embankments.

12.9.62 By the design year (Yr.15) there are no effects on the Landscape and Townscape Character considered to be significant.

12.9.63 At opening year, thirteen of the nineteen representative viewpoints would continue to undergo significant adverse effects. By design year (Yr.15), only three of these would continue to experience significant effects. These would have the potential to cause adverse effects on wellbeing for wider groups through ongoing loss of visual amenity. No differential effects on vulnerable groups have been identified.

12.9.64 In addition, forty-eight individual or groups of visual receptors reported in the Visual Effects Schedule (Appendix 7.1) would experience significant effects at the opening year. By design year (Yr.15) only twelve receptors would continue to experience significant effects. These would have the potential to cause adverse effects on wellbeing for wider groups through ongoing loss of visual amenity. No differential effects on vulnerable groups have been identified.

12.9.65 There would be a traffic change through the Peak District National Park as a result of the Scheme, however, these changes vary depending on the route and the time of day. It is not considered that there would be any significant indirect effects to the visual amenity within the Peak District National Park due to these traffic changes.

12.9.66 A Negative health outcome is therefore anticipated with respect to Landscape and visual effects. See Chapter 7 of the ES for a full consideration of Landscape and visual effects.

Walkers Cyclists and Horse Riders

12.9.67 The WCR assessment undertaken for the Scheme (refer to the Case for the Scheme (TR010034/APP/7.1)), was undertaken to gain a better understanding of the local needs. The purpose of this report was to provide an assessment of the existing facilities and provision for pedestrians, cyclists and equestrians to help understanding of the local needs and inform decision making throughout the design process. The WCR assessed the existing rights of ways and investigated how they can be improved for the design and how they can be enhanced. The proposals were presented to WCH groups during statutory consultation and comments were taken and addressed. Furthermore, the public consultation response form including a dedicated question on the WCH provisions incorporated into the scheme. Where appropriate, the opportunities for improvements and enhancements have been identified have been considered through the Preliminary Design process, and will be re-visited at appropriate stages, such as Detailed Design stage.

12.9.68 During the operational phase of the scheme a communication plan, which would help inform the local community (particularly residents, employees, road users and WCH) of the improvements to accessibility, connectivity and journey times delivered would be prepared.

12.9.69 All WCH provision on the existing A57(T) and A57 would be maintained with possible improvements that would be agreed with the relevant local highway authorities. Any cycle lanes delivered by the Scheme would be designed for future cycle lane connectivity along the de-trunked corridor.

12.9.70 WCHs would be encouraged to use facilities provided along the existing A57 corridor. For safety reasons, WCHs would be prohibited from using the section of the Mottram Moor Link Road between the Old Mill Underpass and Mottram Moor Junction, due to the Mottram Underpass however improved pedestrian and cyclist crossing facilities at the M67 Junction 4, and all new junctions created by the scheme would be realised. Further PRoW LON 52-20, which will be temporarily severed during construction, will be re-instated and upgraded from a footpath to a bridleway, therefore increasing the availability of suitable equestrian facilities away from road traffic.

12.9.71 A combined footway and cycleway along the new A57 Link Road between Mottram Moor and Woolley Bridge, creating a route to link Mottram to the Trans-Pennine Trail (National Cycle Network route 62).

12.9.72 These provisions are anticipated to benefit health and wellbeing and therefore a Positive health outcome is attributed.

Safety / Risk of Injury and Death

12.9.73 Operational activities have the potential to impact risk of injury and death. The assessment of the level of operational impact and significance of effects is detailed in Table 12.25 below.

Table 12.25: Health outcome of operation on Safety / Risk of Injury and Death

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
Road infrastructure within study area - Roads, vehicles	Potential impacts include: - Changes in traffic levels and an unawareness of altered traffic movements, particularly from sensitive road users (e.g. motorcyclists, elderly drivers, children, pedestrians, new drivers and cyclists).	Medium Wider groups including maintenance workers, people who are disabled and/or with other health problems, low-income groups and ethnic minority groups	Changes in traffic levels and an unawareness of altered traffic movements leading to a potential for increased risk of injury and death / decline in safety	Negative – an adverse health outcome is identified Temporary, direct and reversible
		High Children and adolescents, older people	Changes in traffic levels and an unawareness of altered traffic movements leading to a potential for increased risk of injury and death / decline in safety	Negative – an adverse health outcome is identified Temporary, direct and reversible
	Summary of Health outcome	The baseline study identifies a large resident population, including several sensitive receptors and vulnerable groups near the proposed works that could be at increased risk of injuries and death during operation of the Scheme. Maintenance workers would also be at risk whilst working on the road / supporting infrastructure. A **Negative** health outcome is anticipated and effects are considered temporary, direct, and reversible as people become familiar with the new road layout and changes in traffic.		

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	**Change to Health Determinant**	**Health Outcome Category**
		Embedded mitigation considered: - The Scheme has been designed to be resilient to impacts arising from current weather events and climatic conditions and designed in accordance with current planning, design and engineering practice and codes (e.g. the Environment Agency's guidance on allowances for rainfall and flood probability due to climate change, within the context of flood risk assessments). The Scheme has also been designed to include the wind loading standards which incorporate site specific criteria, based on a number of factors including wind direction, altitude and topography. - The design of the proposed Mottram Underpass would incorporate appropriate design measures/requirements, to ensure that the structural integrity and long-term performance of the underpass is not compromised. - PRoW have been realigned as close to their original alignment as practical, to avoid extending WCH routes where possible. Where the Scheme would affect existing PRoW and bridleways, replacement network provision would be made to ensure routes remain open by providing suitable crossing points or diversions. Where new footpaths are required, they would be designed to be as fully accessible as possible. **Essential mitigation** - No specific additional mitigation measures are proposed.		
Road infrastructure within study area - Roads, vehicles	Potential impacts include: - Health and wellbeing / safety outcome from reduced traffic through Mottram village	Medium Wider groups including maintenance workers, people who are disabled and/or with other health problems, low-income groups and ethnic minority groups	Reduction in traffic levels / congestion through Mottram village	Positive – a beneficial health outcome is identified Permanent, direct and irreversible
		High Children and adolescents, older people	Reduction in traffic levels / congestion through Mottram village	Positive – a beneficial health outcome is identified Permanent, direct and irreversible

Health Determinant	Description of Potential Impacts	Health outcome on Human Receptor		
		Sensitivity of Human Receptor	Change to Health Determinant	Health Outcome Category
	Summary of Health outcome	The new road scheme will inherently provide a safer environment through best practice design and moving heavily congested traffic away from sensitive receptors. Some of the committed provisions are listed below as example: - Provision of Mottram Moor Junction (chainage 1800), which is a new signalised junction with a separate pedestrian crossing for WCH - Provision of Old Mill Farm Underpass (chainage 515): A new underpass to maintain farm access and provide a safe route for walkers, cyclists and horse riders - Carrhouse Farm Underpass (chainage 2174): A new underpass to maintain farm access and provide a safe route for walkers and cyclists - Provision Safety measures and improvements to the A57 from Mottram Moor Junction to Gun Inn Junction and from Gun Inn Junction to Woolley Lane Junction As a result a Positive health outcome is anticipated. Effects are permanent, direct and irreversible.		
		Embedded mitigation: - N/A **Essential mitigation** - N/A		

Air Pollution

12.9.74 During operation, there is expected to be a significant improvement for human health. The air quality study area moves from exceedances of the annual mean NO2 AQS objective in the opening year at 71 modelled sensitive receptors without the Scheme to 20 receptors. Of these 71 receptors, 70 have a decrease in concentrations (improvement) and one receptor has a small increase with the Scheme. Of these 70 decreases, 55 have a 'large' decrease with the Scheme in operation, and 44 of the 55 decrease to such an extent that exceedances of the annual mean NO2 AQS objective are removed with the Scheme in operation.

12.9.75 As such a Positive health outcome is anticipated. See Chapter 5 for full consideration of Air Quality.

Soil and Water Pollution

12.9.76 The geology and soils assessment identifies that during operation, the following potential effects would be experienced by the human receptors (residents, pedestrians and cyclists):

- Minimal (if any) exposure of road users to contaminated soil/ground gas migration into confined spaces in the future end use; and
- Exposure to contaminated water via abstractions.

12.9.77 Residents utilising public open space surrounding the highway during operation are considered to be of high value/sensitivity. With mitigation measures applied, the magnitude of impact would be negligible. This would result in a slight adverse (temporary) effect.

12.9.78 Residents are considered to be very high sensitivity in relation to local water abstractions. With mitigation the magnitude of impact is considered to be negligible adverse. This would result in a slight (temporary) effect.

12.9.79 Overall, the Scheme is considered to have a neutral or slight adverse (temporary) effect on residents, resulting in a non-significant classification. A Negative health outcome is therefore attributed.

12.9.80 The road drainage and water environment assessment (Chapter 13) identifies that during operation there is no residual significant effect for water quality.

Noise Pollution and Vibration

12.9.81 Once the Scheme is operational, the noise climate would be permanently affected by changes in vehicle activity, determined by the traffic flows, speeds and fleet composition on the local road network including the Scheme itself, however no significant adverse effects from groundbourne vibration are expected as a result of the Scheme. Beneficial impacts could occur at Mottram in Longdendale (Hyde Road and Mottram Moor) and Hollingworth (Woolley Lane) due to the A57 Link Road diverting traffic away from these areas. Adverse effects could occur at residential streets in Mottram in Longdendale close to the route of the Scheme, such as Four Lanes, Old Hall Lane and Lodge Court. This is because the Scheme is a new noise source that is likely to affect the noise climate at these areas. During the operation phase, there were more perceptible increases than perceptible decreases with the Scheme overall. Significant adverse effects were predicted at 128 noise sensitive receptors due to the Scheme. There were also 362 noise sensitive receptors where significant beneficial effects were predicted due to the Scheme, mostly at dwellings within a Noise Important Area at Mottram in Longdendale that would be bypassed by the Scheme (NIA 10992). As such, Positive and Negative health outcomes are anticipated here.

12.9.82 The operation phase impacts may change over time as traffic flows change in the years after the Scheme opens. This includes impacts from the presence of the A57 Link Road and Mottram Moor Link Road as well as potential cumulative effects of other developments that may affect traffic volumes on the local highway network.

12.9.83 See Chapter 11 for full consideration of Noise and Vibration.

Social cohesion and lifetime neighbourhoods

12.9.84 During the Operational phase, the Scheme would reduce community severance through the separation of local and regional traffic resulting in large reductions of traffic on the existing A57. This would have allowed the opportunity to make this stretch of road much more friendly to cyclists and pedestrians (across all groups) through improved facilities and crossings, public realm improvements and reduction in speed. This is anticipated to lead to positive benefits to health and wellbeing.

Transport options

12.9.85 During operation traffic congestion issues will be alleviated with significant reductions in traffic predicted at Mottram Moor (between Back Moor and Stalybridge Road, Hyde Road and Woolley Lane), therefore providing a safer and more pedestrian friendly environment in the village. The scheme also makes considerable provisions for WCH, improving connectivity and the new bypass will also provide for more reliable, shorter journey times. These impacts are anticipated to result in a Positive health outcome for travellers.

12.10 National Policy Statement for National Networks Compliance

12.10.1 Paragraph 3.19 of the National Policy Statement of the National Networks identifies the Government's commitments to creating a more accessible and inclusive transport network that provides a range of opportunities and choices for people to connect with jobs, services and friends and family. The Scheme objectives include to protect access for non-motorised users (pedestrian and cyclists) and improves conditions where possible. This chapter has set out how the Scheme ensures the quality of existing WCH routes is maintained.

12.10.2 In compliance with paragraph 5.165, this chapter has identified existing and proposed land uses near the project and assessed the effects of precluding new development or proposed uses in the development plan. This chapter covers the potential effects of the Scheme on existing land uses, development land and planning applications.

12.10.3 Paragraph 5.166 states that 'Existing open space, sports and recreational buildings and land should not be developed unless the land is surplus to requirements or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location.' As set out in the development land and businesses assessment, the Scheme would encroach onto the Mottram Agricultural Showground. As such, the Mottram Show has acquired a new larger showground to mitigate this effect and ensure that the land taken is replaced by equivalent or better provision in terms of quality and in a suitable location.

12.11 Monitoring

12.11.1 The site of the construction compound would be restored to agriculture and be the subject of a five-year aftercare period during which time issues with soil compaction, drainage, weeds and stoniness will be rectified.

12.11.2 The monitoring of the effects of this Scheme on population and human health will primarily take place in line with the recommendations set out within the specific chapters of the ES including namely air quality, noise and vibrations and landscape and visual impact (Chapters 5, 11, 7 respectively).

12.11.3 This includes monitoring process such as monitoring the need for additional noise barriers, and the effectiveness of designed in/existing noise barriers, number of road traffic incidents to ensure road safety has been improved, traffic flows to ensure that congestion is reduced and the continued monitoring of the use of PRoW's, footpaths and cycleways. Further detail can in be found in the specific chapters noted above.

12.11.4 Note also that monitoring suggested in other chapters may be relevant to receptors in the population and human health chapter.

12.12 Summary

12.12.1 The construction, operation and maintenance of the Scheme is anticipated to generate changes to wider health determinants in the immediate locale, as well as wider environs to the Scheme. An assessment to determine the changes and the level of significance has been made, based on a detailed, yet proportionate collation and evaluation of desktop study and other data sources covering the following wider determinants of health:

- Air pollution
- Soil and water pollution
- Risk of injuries and death
- Housing
- Education, healthcare services and community facilities
- Transport options
- Active travel
- Work and training
- Social cohesion and lifetime neighbourhoods
- Noise pollution and vibration.

12.12.2 The assessment included consideration of potential effects on the wider population, as well as a series of vulnerable groups identified as likely being present in the area, including:

- Families with children and adolescents, (pregnant women, babies, children and adolescents)
- People who are physically or mentally disadvantaged (elderly people, people with physical disabilities, people with other health problems or impairments)
- People who are materially disadvantaged
- People from black and minority ethnic backgrounds

12.12.3 The population and human health assessment, being partly based upon residual effects identified by other topic assessments, will incorporate the embedded and additional mitigation measures identified in those chapters e.g. Air Quality. Where appropriate, additional mitigation measures relevant to individual population and human health elements has been identified. Scheme construction, operation and maintenance will be carried out in accordance with best practice and relevant legislation pertaining at that time.

12.12.4 During construction, the assessment finds that residual effects are predicted for the following wider determinants of health:

Private property and housing

12.12.5 The permanent loss/demolition of 25 properties and displacement of residents is anticipated to result in **Large adverse** effects which is significant. Loss of garages and outbuildings at other properties on Four lanes, Tollemache Close and Mottram Moor is also anticipated to result in **Moderate adverse** effects, which is significant however, all properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue.. Further temporary disruptions to access within the study area is anticipated to result in **Moderate adverse** effects, which is significant. It is important to note that effects will be reversible and are temporary to the construction phase and embedded mitigation includes the provision of diversionary routes, signage and early engagement with the community.

Active travel

12.12.6 Temporary loss / closure / diversion will be required at a number of PRoWs, some of which are anticipated to result in **Moderate adverse** effects owing to the extent of diversion required (>0.5 km). It is important to note that effects will be reversible and are temporary to the construction phase and embedded mitigation includes the provision of diversionary routes, none of which are greater than 1km in length. Signage and early engagement with the community is also proposed.

Development land and business

12.12.7 Construction of the scheme will require the demolition of four no. units within Roe Cross Industrial Estate. It will also require land formally recognised as the Mottram Agricultural Showgrounds. Loss of these businesses and land is anticipated to result in **Large adverse** effects, which is significant. Loss is permanent, direct and irreversible however, all properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue.

Agricultural land holdings

12.12.8 **Moderate adverse** residual effects are anticipated on seven holdings as a result of severance and / or land take. Where appropriate, underpasses or the creation of access to severed portions will be provided at five of the holdings. No mitigation is proposed at either Farm holding C or Farm holding D.

12.12.9 While the proposed mitigation to be enacted during the construction works will reduce or nullify anticipated impacts on health and wellbeing, it is the case that as full detailed design has not yet been completed by the appointed Principal Contractor, there may be a number of unforeseeable hazards and risks, or other impacts to health and wellbeing that may only materialise at a later date. Such hazards and risks would be assessed as and when they are identified. A hazard register will be prepared, and measures taken either in design or in procedural operations to mitigate against the hazard. This process will be undertaken in close liaison with the Environmental Health Officers of the local authorities (Tameside MBC and High Peak BC).

12.12.10 It is noted that 25 dwellings and four business premises will be lost in order to facilitate the scheme. All properties required to be demolished to facilitate the scheme are either currently under the ownership of the applicant, or ongoing discussions between the landowner and the applicant are taking place in relation to this issue. However, the right to compensation, plus methods and procedures for assessing appropriate levels of such, is outside the scope of this assessment.

12.12.11 During operation, the assessment does not find significant effects for any of the wider determinants of health for land use and accessibility. In relation to Human Health, negative health outcomes can be expected in the case of the route of new road infrastructure, though this should be seen in the wider context of the new road reducing congestion in Mottram and creating a safer environment for pedestrians etc.

12.12.12 In respect of human health Table 12.26 summarises the Health outcomes against each of the wider health determinants through construction and operation.

Table 12.26: Health outcome summary

Aspect	Wider health determinants	Health outcome (Construction)	Health outcome (Operation including up to Year 15)
Natural environment	1) Air pollution 2) Soil and water pollution	1) Negative 2) Negative	1) Positive 2) Negative
Built environment	3) Safety / risk of injuries and death	3) Negative	3) Negative
Activities	4) Housing 5) Transport options 6) Active travel	4) Negative 5) Negative 6) Negative	4) Neutral 5) Positive 6) Positive
Landscape	7) Landscape amenity	7) Negative	7) Negative
Local economy	8) Development land and business 9) Agricultural land holdings	8) Negative 9) Negative	8) Positive 9) Neutral
Community	10) Education, healthcare services and other community facilities 11) Open space, recreation and leisure-time activities 12) Social cohesion and lifetime neighbourhoods	10) Negative 11) Negative 12) Negative	10) Positive 11) Positive 12) Positive
Lifestyle	13) Noise pollution and vibration	13) Negative	13) Positive and Negative

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