A57 Link Roads
TR010034
6.2 Environmental Statement Non-Technical Summary

APFP Regulation 5 (2) (a)
Planning Act 2008 Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Infrastructure Planning

Planning Act 2008

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

A57 Link Roads Scheme

Development Consent Order 202 [x]

6.2 ENVIRONMENTAL STATEMENT

NON-TECHNICAL SUMMARY

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Author:	A57 Link Roads Scheme Project Team, Highways England

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Introduction

This is a Non-Technical Summary for the Environment Statement that has been prepared for the A57 Link Roads scheme (previously known as Trans Pennine Upgrade).

The A57 Link Roads scheme (which will be referred to as 'the Scheme' for the rest of this document) has been developed to improve journeys between Manchester and Sheffield. It is needed because the current A57 around Mottram-in-Longdendale suffers from congestion which causes delays and unreliable journey times. In turn, this restricts economic growth in the area. The Scheme will create two new link roads at the western end of the A57/A628 Trans-Pennine route:

- **Mottram Moor Link Road –** a new dual carriageway from the M67 Junction 4 roundabout to a new junction on the A57(T) at Mottram Moor
- **A57 Link Road –** a new single carriageway link from the A57(T) at Mottram Moor to a new junction on the A57 in Woolley Bridge.

The Scheme is a Nationally Significant Infrastructure Project which means to build it, Highways England (referred to as 'the Applicant' for the rest of this document) needs to apply for a Development Consent Order, which will be examined by the Planning Inspectorate and approved by the Secretary of State. More information about the Development Consent Order process is available on the project webpage at www.highwaysengland.co.uk/A57-Upgrade

As part of the Development Consent Order process, an Environmental Impact Assessment has been carried out by the Applicant to understand the potential effects that the new link roads would have on the environment. The likely significance of an environmental impact is determined by taking account of the sensitivity of an environmental feature (e.g. house, wildlife habitat or river), the level of impact (i.e. the change from the existing situation) and, if the impact is negative, whether it can be avoided, reduced or mitigated through good design or management. The greater the sensitivity of the environmental feature and the greater the level of impact, the more significant the effect. The significance of effects is considered after mitigation or design changes have been implemented, these are called residual effects. The level of significance is determined by specialists who are competent experts for their topic, who will follow standard guidance to complete their assessments.

The results of this Environment Impact Assessment have been reported in an Environmental Statement, which has been prepared to accompany the Development Consent Order application and sets out a description of the Scheme, reasonable alternatives considered in the development of the design, the environmental setting, the likely significant effects of the Scheme on local communities and the environment, and the measures proposed to mitigate these effects.

This Non-Technical Summary provides a summary of the Environmental Statement in non-technical language.

There are three volumes in the full Environmental Statement:

Volume 6.3 Environmental Statement main text setting out the results of the environmental assessment across 16 chapters and Non-Technical Summary (this document).

Volume 6.4 Environmental Statement figures, including drawings, photos and other illustrative material.

Volume 6.5 Environmental Statement technical appendices.

The Environmental Statement and supporting documents can be viewed online at:

https://infrastructure.planninginspectorate.gov.uk/projects/north-west/a57-link-roads-previously-known-as-trans-pennine-upgrade-programme/?ipcsection=docs

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The Scheme

The main Trans-Pennine road route (A57(T), A628 and A616) between the Manchester and Sheffield City Regions is the trunk road connecting the M67 at Mottram-in-Longdendale towards the east of the Manchester City Region with the M1 in the north west of the Sheffield City Region. The current Scheme (The A57 Link Roads) was part of this wider package of work and has evolved over more than 50 years, as different improvements have been explored.

Most of the Scheme is in Mottram-in-Longdendale, on the eastern edge of Manchester, next to and in Hattersley, Mottram-in-Longdendale, Hollingworth and Woolley Bridge. The Scheme connects the M67 at the west to the A57 Brookfield Road in the east and crosses agricultural pasture within the Harrop Edge and Mottram Moor valley sides and the River Etherow valley.

The Scheme lies mainly within the administrative boundaries of Tameside Metropolitan Borough Council, up to the proposed River Etherow Bridge. To the east of this, the Scheme crosses over the boundary with High Peak Borough Council and Derbyshire County Council.

The Scheme mainly compromises the creation of two new link roads at the western end of the A57/A628 Trans-Pennine route:

- **Mottram Moor Link Road –** a new dual carriageway from the M67 Junction 4 roundabout to a new junction on the A57(T) at Mottram Moor
- **A57 Link Road –** a new single carriageway link from the A57(T) at Mottram Moor to a new junction on the A57 in Woolley Bridge.

Current challenges within the Scheme area include:

- The current A57 around Mottram-in-Longdendale suffers from congestion which limits journey time reliability.
- Reliability issues restrict economic growth due to the delays experienced by commuters and business users. This has a negative effect on local businesses and employment opportunities.
- The congestion also results in rat running through smaller towns and villages, as vehicles attempt to reduce queuing times.
- Heavy traffic on the local road network disrupts the lives of communities and makes it difficult and potentially unsafe for pedestrians to cross the roads.
- It is likely that these issues would get worse with time if significant improvements aren't made.

The Scheme objectives are:

- Connectivity – reducing congestion and improving the reliability of people's journeys through Mottram-in-Longdendale, Hollingworth and Tintwistle and also between the Manchester and Sheffield city regions.
- Environmental – improving air quality and reducing noise levels in certain areas, through reduced congestion and removal of traffic from residential areas. The Scheme is also being designed to avoid unacceptable impacts on the natural environment and landscape in the Peak District National Park.
- Societal – re-connecting local communities along the Trans-Pennine route.
- Capacity – reducing delays and queues that occur during busy periods and improving the performance of junctions on the route.

Environmental context

The Scheme design has been an iterative process that has considered environmental mitigation measures and buildability to develop an economic solution and a good road design that is sensitive to the context of its surroundings and the communities that surround it. The key environmental constraints considered during this process are:

- There are no Air Quality Management Areas[1] within or adjacent to the Development Consent Order boundary where air pollutant concentrations exceed national air quality objectives. However, the Scheme's air quality study area is located within the Greater Manchester Air Quality Management Area and the Sheffield Citywide Air Quality Management Area
- In addition, High Peak Borough Council designated an Air Quality Management Area in the Tintwistle area and in the Dinting Vale/Glossop area. The Tintwistle Air Quality Management Area is not within the Air quality study area
- There is one Scheduled Monument, two Conservation Areas, two Grade II* Listed Buildings, 45 Grade II Listed Buildings and other non-designated assets, within 500 metres of the Scheme
- The Scheme falls within the transitional zone between the open moorlands of the Dark Peak and Southern Pennines, and the densely populated urban conurbation of Manchester. The Scheme also lies within the setting of the Peak District National Park
- Two statutory designated sites for nature designation lie within 2 kilometres of the Scheme, namely:
  - Hurst Clough Local Nature Reserve, situated 345 metres south of the Scheme
  - Great Wood Local Nature Reserve, situated 1.3 kilometres south of the Scheme
- The habitats within the Scheme study area have the potential to support notable and protected species, in particular bats, barn owls, badger, birds, otter, mammals and aquatic invertebrates
- The dominant source of noise in the proximity of the Scheme is road traffic noise. There are four Noise Important Areas[2] located within the study area. These designations are all related to road traffic noise:
  - NIA1574: Melyncourt Road, Hyde
  - NIA10992: Mottram-in-Longdendale (A57 Hyde Road, A57 Mottram Moor, A6018 Back Moor). Woolley Bridge (Woolley Lane)
  - NIA10993: Woolley Bridge (Woolley Lane, Brookfield)
  - NIA1575: Mottram-in-Longdendale (Roe Cross Road, Edge Lane)
- There is a relatively dense network of public rights of way and recreational routes within the Development Consent Order boundary and 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)

[1] Where a local authority determines that the air quality fails, or will fail, to meet relevant Local authority objectives, they must declare an Air Quality Management Area
[2] Noise Important Areas for roads and railways are based upon strategic noise maps results and have been produced in line with the requirements set out in the noise action plans
[3] The waters of England and Wales have been divided into water bodies. These are lakes and parts of rivers, estuaries, coastal waters and groundwater. Environmental objectives are set for each water body. We must demonstrate that proposals will not result in the deterioration in status (or potential) of these water bodies

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- There are a number of key settlements located in and around the study area, including Hattersley, Mottram-in-Longdendale, Hollingworth, Hadfield and Gamesley. These settlements possess a variety of social and community facilities, including education and healthcare facilities, community centres, places of worship, libraries and sporting facilities
- There are three main rivers within the study area: River Etherow, Hurstclough Brook and Glossop Brook
- The following surface water and ground waterbodies are classified as Water Framework Directive water bodies[3]:
  - Glossop Brook (Long Clough to Etherow)
  - Etherow (Glossop Brook to Goyt)
  - Etherow (Woodhead Reservoir to Glossop Brook)
  - Tame (Chew Brook to Swineshaw Brook)
  - Wilson Brook
  - Manchester and East Cheshire Carboniferous Aquifers
- The majority of the Scheme is located in the low risk fluvial Flood Zone 1, however areas of Flood Zone 2 and 3 associated with flood risk from the River Etherow are crossed by the Scheme near the River Etherow Bridge
- There is a high degree of faulting[4] throughout the area. In the Mottram area, intersecting the proposed Mottram underpass there is a North West-South East trending geological fault, which influences the local groundwater regime.
- These environmental constraints are shown on the plan on pages 9 to 10.

Environmental Proposals - Measures to avoid, prevent or reduce significant effects

One of the main features of the Environmental Statement is to report and explain the likely significant effects on the environment resulting from the Scheme during the construction and operational stages. It also provides a description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.

These measures are referred to as mitigation and are generally categorised as:

- Embedded - those that have been incorporated into the design of the Scheme (e.g. planting to provide visual screening of the Scheme)
- Essential - measures required to reduce and if possible, offset (or remediate) likely significant adverse environmental effects (e.g. noise barriers to mitigate reduce potential significant noise effects)
- Enhancements - measures that are over and above what is required to mitigate the adverse effects of a project (e.g. extensive planting that goes above what is needed to mitigate habitat loss or screening provision)

Embedded mitigation measures

One of the key functions of an Environment Impact Assessment for a scheme is to inform the design. This Scheme design is an iterative process which takes into consideration the key significant effects on environmental receptors and the mitigation proposed. The Scheme includes a range of measures that have been embedded into the design to avoid affecting key environmental features. This process would continue during the Scheme's detailed design development to ensure that any additional design opportunities are identified, so as to avoid as far as possible any potential environmental impacts on key environmental features that are currently the result of the proposed Scheme's design.

Embedded mitigation is often underpinned by best practice methods, which are widely used in construction. These would be integral to the delivery of the Scheme, for example, to adhere to legislative compliance or ensure pollution prevention. The environmental design measures that have been incorporated into the Scheme to ensure best practice and legislative compliance are therefore considered within the assessment.

The Environmental Management Plan is key to delivering embedded mitigation as this includes measures relating to all environmental disciplines for the construction phase. Furthermore, all the construction-related mitigation measures and actions are set out in the Register of Environmental Actions and Commitments, which is successfully implemented on site.

[4] When the rocks are subjected to horizontal compressional pressure, they develop fractures or cracks along the line of weakness. These lines of fracture are known as faults. In faulting, blocks of rocks may move up or down.

Essential mitigation measures

Essential mitigation measures, which are those required to reduce or offset likely significant adverse environmental effects of the Scheme, are discussed within each relevant environmental topic specific chapter (Chapter 5 to 14).

A key approach to developing mitigation measures has been through the development of a scheme-specific landscape strategy (the Environmental Masterplan). The strategy has also been developed to enhance biodiversity and habitat and to help maintain local vegetation patterns and create sympathetic landform. The Environmental Masterplan for the Scheme shown on pages 11 to 14 shows both the embedded and essential mitigation measures and shows how the Scheme has been integrated into the surrounding environment.

The key environmental mitigation measures included within the Environmental Masterplan would:

- Help to integrate the Scheme into the surrounding landscape, creating a sympathetic planting strategy
- Reduce visual impact by screening and filtering views of the Scheme
- Reduce noise impacts associated with the Scheme (e.g. noise barriers)
- Mitigate for the loss of existing vegetation
- Create new areas of ecological habitat and maximise opportunities to improve biodiversity within the permanent land
- Ensure the connectivity of Public Rights of Way and other routes used by pedestrians and cyclists are maintained
- Provide for the storage, treatment and discharge of road runoff, and provide features for the mitigation of flooding risks.

Enhancement measures

Opportunities for enhancement measures have been included in the environmental topic specific chapters (Chapter 5 to 14). Although enhancement measures are not factored into the environmental assessment, identifying them and the benefits they would bring as early as possible means they can be included in ongoing design development.

Construction

The outline construction programme is based on a forecast start of works in autumn 2022, with the Scheme opening in spring 2025. The main construction works would be divided into 5 phases, as outlined in Table 1.

Working hours

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.

No night-time construction works are planned for the Scheme during the entire construction programme except for installing or removing traffic management. The night-working hours for these tasks would be agreed in advance with the relevant local authority.

Construction compound

A temporary compound on agricultural land to the east of the M67 Junction 4, north of A57 Hyde Road would be needed during construction. The construction compound is expected to accommodate office and welfare facilities, plant and machinery parking, storage facilities, maintenance areas and workshops. A 3 metre screening bund (i.e. a bank created from earth) would be placed around the compound to ensure the compound office building is sufficiently screened.

Temporary welfare facilities would also be required next to the two new structures, Mottram Underpass and River Etherow Bridge during their construction.

Traffic management

Construction traffic would be:

- Heavy Goods Vehicles travelling to and from site on the existing road network
- Movements of vehicles ‘off network’ within the Development Consent Order boundary.

Table 1 – The outline construction programme

Construction phase	Outline of construction activities to be undertaken
Phase 1: Autumn 2022 to Spring 2023	• Early works; including site clearance, site enabling work and environmental mitigation works, creation of the compound area and temporary welfare facilities, as required • Intrusive Archaeology surveys • Properties above Mottram Underpass to be demolished • Closure of Old Hall Lane and diversion of Old Road to Roe Cross Road • Ground improvement to the land west of the River Etherow
Phase 2: Spring 2023 to Autumn 2023	• Works for the construction of Mottram Underpass would continue • The fill material from the cutting east of Mottram Underpass would be transported to form an embankment west of the River Etherow • Carrhouse Lane Underpass and Old Mill Farm Underpass would be constructed
Phase 3: Autumn 2023 to Spring 2024	• The construction of Mottram Underpass would be completed • The junction modifications to M67 Junction 4 would commence • The offline sections of Mottram Moor Junction would be constructed • The tie-in of the Scheme to Woolley Lane would be completed. • Landscape tree planting would be undertaken in selected areas.
Phase 4: Spring 2024 to Autumn 2024	• The Mottram Underpass main excavation would commence with the material moving west to complete the mainline from the M67 Junction 4 to Mottram Underpass • Road surfacing and street furniture would be installed along the length of the Scheme • Completion of Mottram Moor Junction • Landscaping would continue across the whole Scheme
Phase 5: Autumn 2024 to Spring 2025	• The detrunking works to the existing A57 would be completed • Over winter planting of replacement trees would take place and planting of other bare root stock, as required

Dedicated routes would follow the new main line alignment where possible. These temporary routes would be created by stripping the topsoil and replacing with material to create a hard-standing surface suitable for heavy goods and off-road vehicles. Access for construction vehicles to the site would be from the trunk road network on designated routes which would be clearly signposted.

The Applicant would work closely with stakeholders during the construction works to maximise the efficiency of the construction and minimise disruption to the travelling public and other stakeholders living and working in the area.

Land take

To enable it to be built, operated and maintained, the Scheme would require the acquisition of land outside Highway England’s existing land ownership boundary. The temporary and permanent land take needed has been identified through the preliminary design, consultation and engagement with landowners. Approximately 42 hectares would be required permanently, 13 hectares would be subject to temporary possession for works areas and the construction compound.

Some residential properties and commercial units would be demolished to support the construction of the Scheme.

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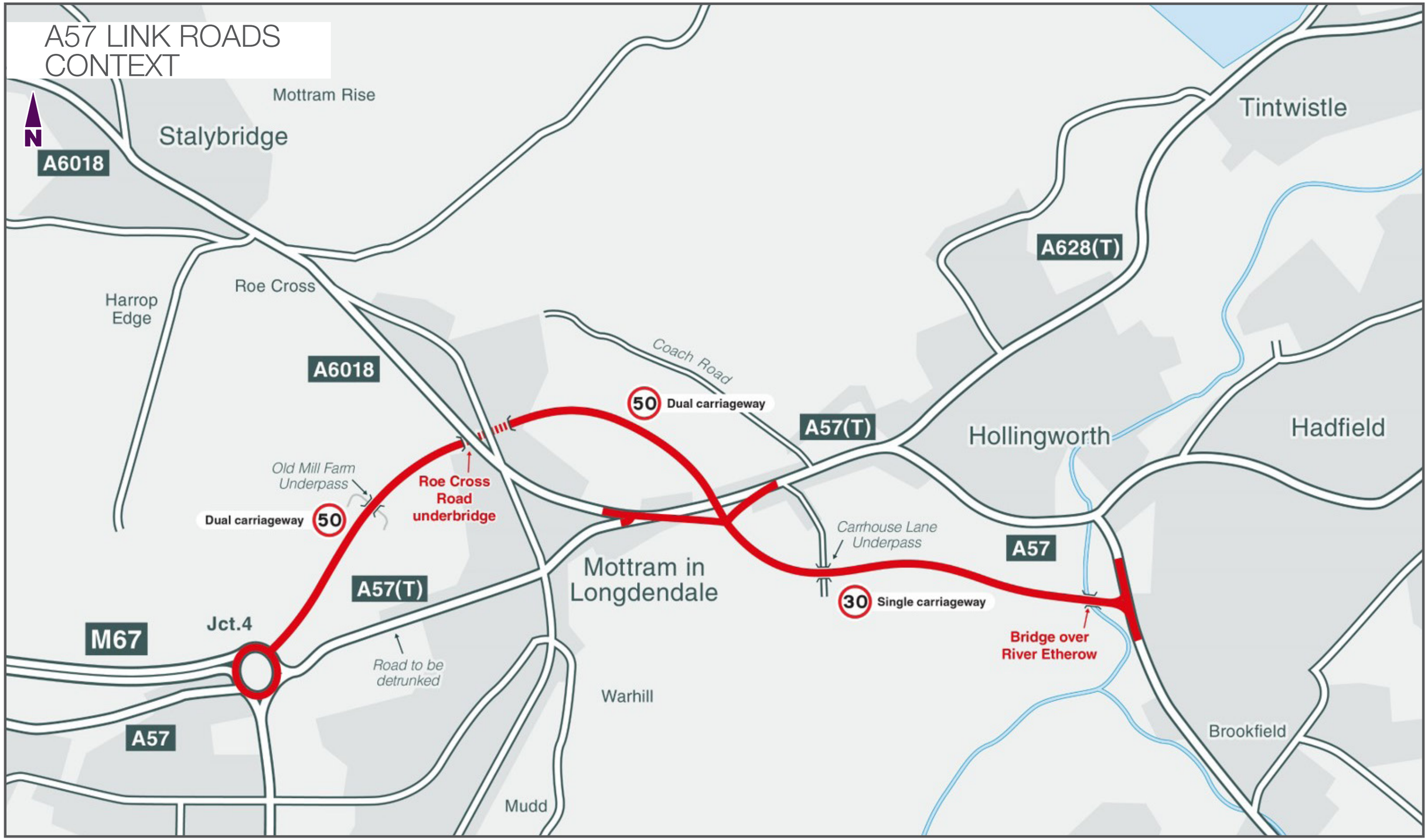
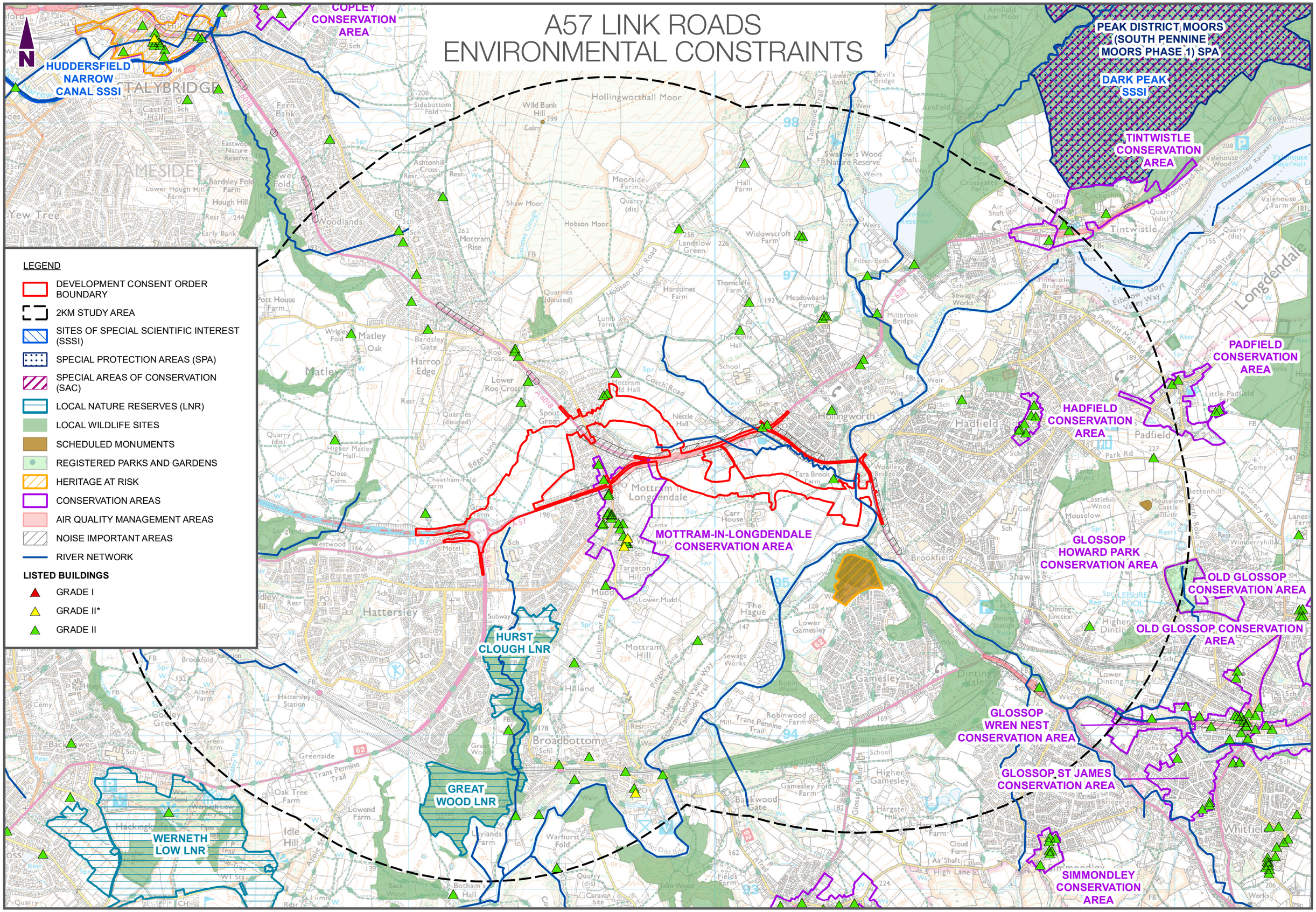


A57 LINK ROADS
ENVIRONMENTAL CONSTRAINTS



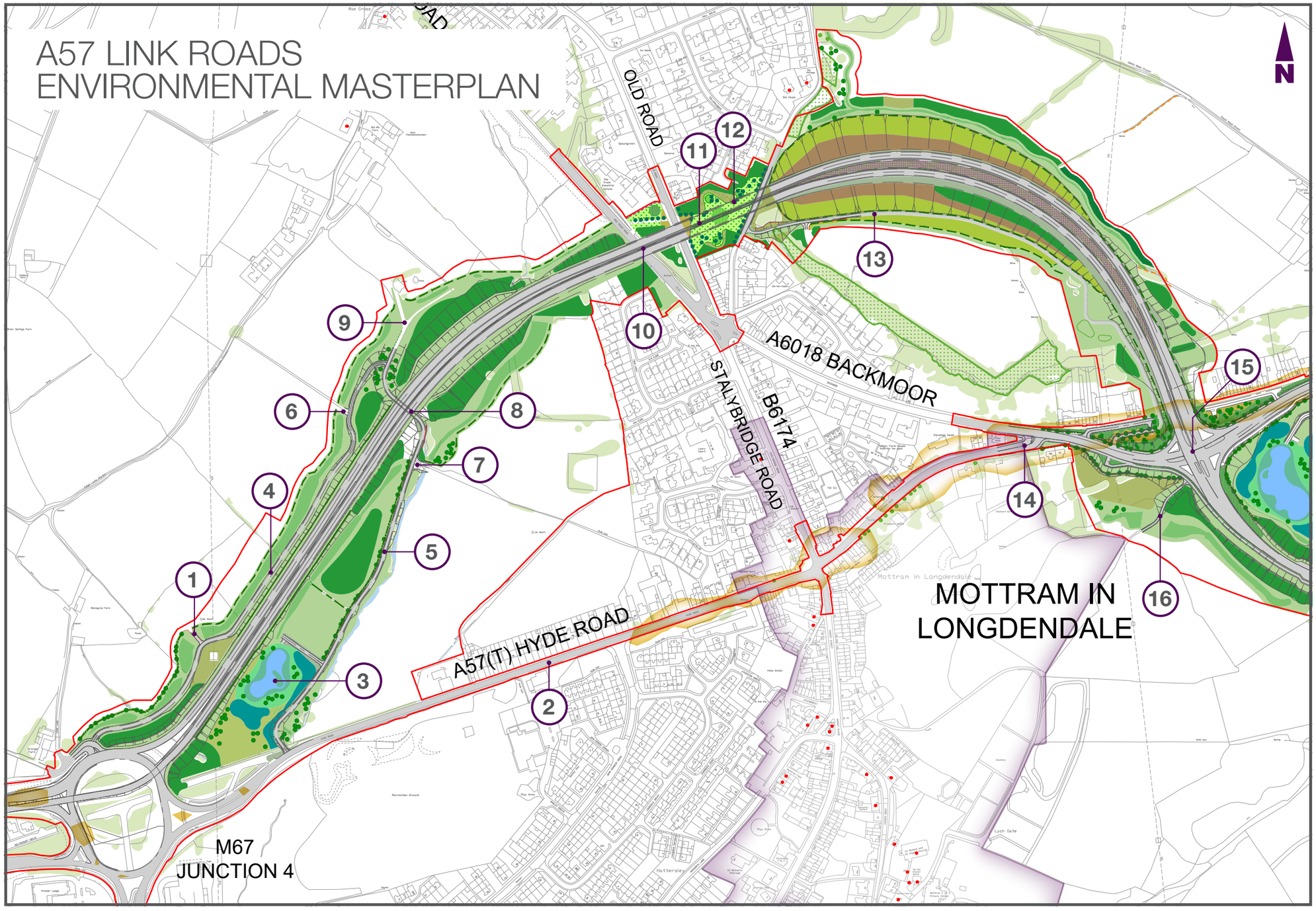
LEGEND

- DEVELOPMENT CONSENT ORDER BOUNDARY
- 2KM STUDY AREA
- SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- SPECIAL PROTECTION AREAS (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- LOCAL NATURE RESERVES (LNR)
- LOCAL WILDLIFE SITES
- SCHEDULED MONUMENTS
- REGISTERED PARKS AND GARDENS
- HERITAGE AT RISK
- CONSERVATION AREAS
- AIR QUALITY MANAGEMENT AREAS
- NOISE IMPORTANT AREAS
- RIVER NETWORK

LISTED BUILDINGS

- GRADE I
- GRADE II*
- GRADE II

A57 LINK ROADS
ENVIRONMENTAL MASTERPLAN



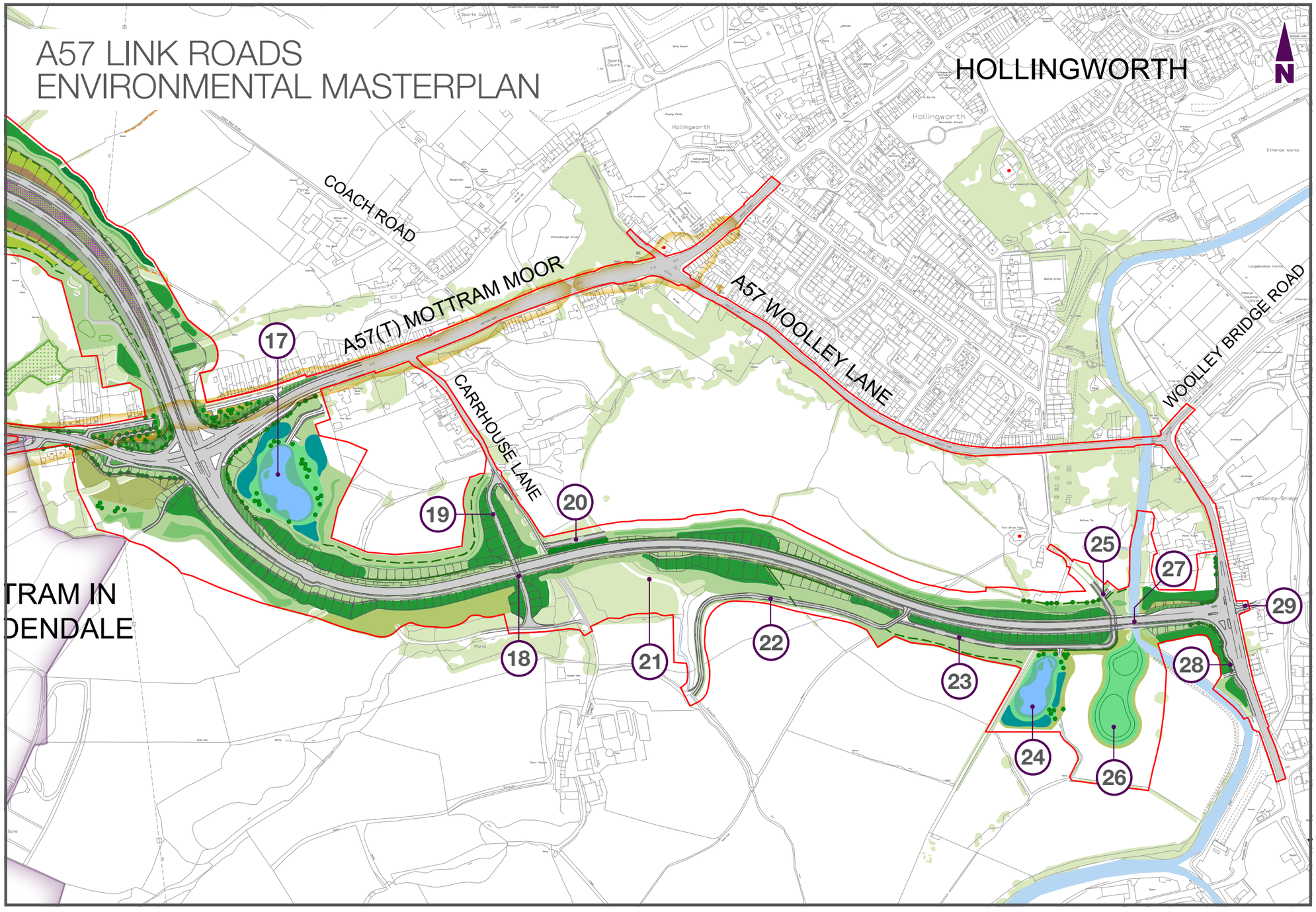
SCHEME KEY

1. Footpath diversion
2. Existing A57(T) Hyde Road to be de-trunked
3. Creation of new attenuation pond
4. Access track / Bridleway
5. Access track / Bridleway
6. Footpath diversion and access track
7. Footpath diversion and access track
8. Old Mill Farm Underpass
9. Footpath diversion and access track
10. Roe Cross Road Bridge
11. Mottram Underpass
12. New amenity green space
13. Access track / Bridleway
14. Realignment of Back Moor Junction
15. Mottram Moor Junction
16. Footpath diversion

LEGEND

- Development Consent Order Boundary
- Air quality managment area
- Conservation area
- Earthworks
- Native species hedges
- Existing woodland and trees
- Proposed species rich grassland
- Proposed amenity grassland
- Proposed grass and scrub planting
- Acid grassland
- Reed beds
- Proposed woodland
- Marsh and wet grassland
- Grassland with bulbs
- Heather
- Rock and scree
- Woodland wet
- Existing waterbodies
- Proposed waterbodies
- Scattered trees
- Listed building

A57 LINK ROADS ENVIRONMENTAL MASTERPLAN



SCHEME KEY

17 Creation of new attenuation pond
18 Carrhouse Lane Underpass
19 Carrhouse Lane diversions access track and footpath diversion
20 Access track
21 Bridleway
22 Access track
23 Access track and footpath diversion
24 Creation of new attenuation pond
25 Footpath diversion
26 Floodplain compensation area
27 Single span River Etherow Bridge
28 Maintenance lay-by
29 Development access

LEGEND

- Development Consent Order Boundary
- Air quality managment area
- Conservation area
- Earthworks
- Native species hedges
- Existing woodland and trees
- Proposed species rich grassland
- Proposed amenity grassland
- Proposed grass and scrub planting
- Acid grassland
- Reed beds
- Proposed woodland
- Marsh and wet grassland
- Grassland with bulbs
- Heather
- Rock and scree
- Woodland wet
- Existing waterbodies
- Proposed waterbodies
- Scattered trees
- Listed building

Alternatives

The Scheme has evolved over more than 50 years as different ideas have been considered and discarded to address the longstanding connectivity and congestion issues identified. Whilst the Scheme assessed in the Environmental Statement is presented as a separate Scheme to those considered before the Trans-Pennine feasibility studies published in 2015, note has been taken of earlier options. The current design development has therefore been informed by historic study information.

In developing options for the Scheme, a range of highway options were assessed in terms of delivering Scheme objectives, cost and key issues and risks. The consideration of alternatives followed the following stages:

Strategy, shaping and prioritisation stage – feasibility studies conducted to investigate and assess the viability of transport scheme solutions to the problem, including road network solutions.

The Department for Transport commissioned a series of feasibility studies to investigate solutions to some of the most significant and longstanding congestion hotspots in the country. This work included identifying the opportunities and understanding the case for future investment on Trans-Pennine routes to improve connectivity between Manchester and Sheffield.

Twenty-three different road network solutions (such as sustainable transport measures, a Trans-pennine tunnel, climbing lanes, link roads, bypass and HGV control measures) were initially assessed and four packages were consequently identified for further development at option selection stage. All four packages proposed a slight variant on a central package of interventions:

- Mottram Moor Link Road
- A57(T) to A57 Link Road
- A61 Dualling
- A628 Climbing Lanes
- Safety and Technology Improvements

Gun Inn Junction looking West

Options identification stage – during this stage the options were further assessed in terms of environmental impact, traffic forecasts and economic benefits to prioritise between schemes and options and ensure that value for public money was achieved. The main purpose of this stage was to identify options to take forward for public consultation.

A long list of nine options were presented at this stage which included:

- Mottram Moor Link Road options
  - Options for A57(T) to A57 Link Road crossing the A57(T) close to Mottram
  - Options for A57(T) to A57 Link Road crossing the A57(T) closer to the Gun Inn junction at Hollingworth
- Bypass options
  - Options for a Mottram, Hollingworth, and Tintwistle Bypass

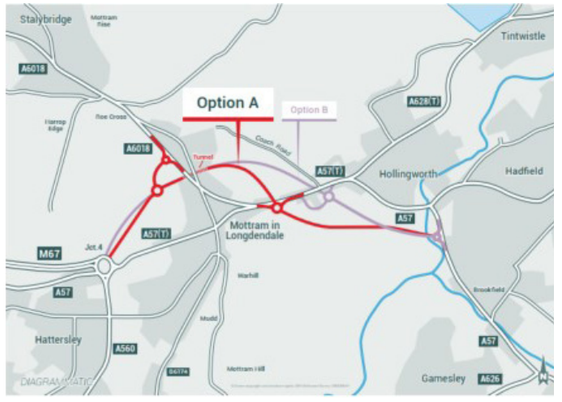
Following several sift stages, the benefits and dis-benefits of these options were considered. The bypass options were expected to attract significantly more traffic to the area, and also have environmental impacts on the Peak District National Park, for example air quality and noise. As a result, the decision was made to take two of the Mottram Moor Link Road options through to the next stage:

- Mottram Moor Link Road Option A (short bypass)
- Mottram Moor Link Road Option B (short bypass)

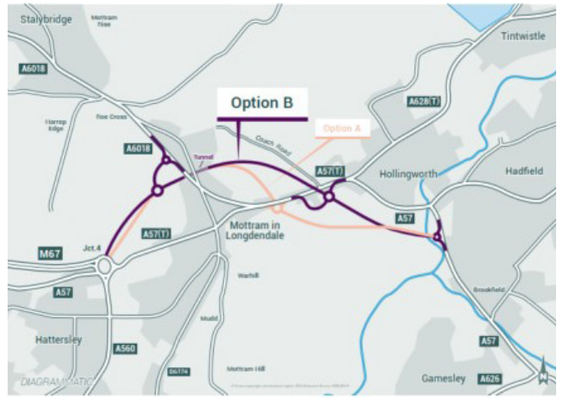
Option selection stage – including on-going design development and the preferred route announcement in 2017 informed by consultation.

Option A and Option B were presented during the Non-Statutory Consultation between March 2017 to April 2017. The majority of respondents preferred Option A to Option B because they believed it to be the most sensible and logical route, had a minimal impact on the environment, fewer properties would be affected, provided a safe route and was more similar to previously proposed routes. Those who preferred Option B did so because it bypasses more of Mottram Moor and congestion problems would be better addressed. The information gathered as part of the non-statutory options consultation helped to inform the decision on the Preferred Route.

Based on the assessment of the options and the response received from the public consultation, Option A was selected as the preferred route for the Scheme. In November 2017 the Preferred Route Announcement of Option A was published. This option performed the best in terms of community impact and had the most support from those taking part in the consultation.



Option A



Option B

Preliminary design stage – During this stage a number of elements were removed from the scope of the Scheme that was included in the Preferred Route Announcement. These included the following:

- Mottram tunnel was reduced to an underpass and realigned to be approximately 20 metres to the east to reduce buildability risks
- Removal of proposed Roe Cross link road, junction and roundabout reduced the impacts of the Scheme on wildlife, watercourses and views from neighbouring properties
- Reduction of proposed construction compound sites from three areas to one area
- The proposed roundabout at Mottram Moor was replaced with a signal-controlled junction to reduce the land take; as well as the impacts on wildlife and views from neighbouring properties
- The River Etherow crossing was reduced to a single span structure as flood risk could be managed by subtly reshaping the channel and the surrounding floodplain itself.

Additionally, the Scheme was redefined as the A57 Link Road Scheme, as opposed to the wider TPU package. The Scheme design has also been developed within the existing constraints and limitations of the site and surrounding and to reduce detrimental effects on the environment. This has mainly included a reduction in the Development Consent Order boundary, such as reducing junction and structure extents and reducing land take.

Further consultation was undertaken. Statutory consultation took place between November 2020 – December 2020. On-going post-Statutory Consultation has continued since December 2020, including engagement with environmental stakeholders, Local Planning Authorities and meetings with landowners. These consultations, along with ongoing stakeholder engagement, have been used to inform and refine the design and led to the Scheme submitted as part of the Development Consent Order application and the subject of the Environment Impact Assessment.

A57 Link Roads
Environmental Statement: Non-Technical Summary

Environmental Statement – Scope and approach

The Environmental Statement provides:

- A description of the Scheme and the mitigation measures included as part of the Scheme
- A summary of the alternatives considered
- Assessment of the likely effects of the Scheme on the environment
- Assessment of the cumulative effects
- The approach to the Environmental Impact Assessment comprised:
- Information gathering of information to establish the current environmental setting or baseline
- Considering the potential impacts of the Scheme
- Developing measures to avoid, prevent or reduce adverse impacts
- Assessing the resultant likely significant effects of the Scheme on local communities and the environment.

The following topics are included in this Environmental Statement:

- Chapter 5: Air Quality
- Chapter 6: Cultural Heritage
- Chapter 7: Landscape and Visual Effects
- Chapter 8: Biodiversity
- Chapter 9: Geology and Soils
- Chapter 10: Materials Assets and Waste
- Chapter 11: Noise and Vibration
- Chapter 12: Population and Human Health
- Chapter 13: Road Drainage and the Water Environment
- Chapter 14: Climate
- Chapter 15: Cumulative Effects

The Environmental Impact Assessment has followed industry standard methods, including for establishing significance, that are set out in Highways England's Design Manual for Roads and Bridges along with topic-specific guidance as appropriate. Each topic chapter in the Environmental Statement provides further detail regarding the specific methodology applied.

This assessment has been undertaken against both the current baseline setting of the Scheme, and potential changes to the Scheme's baseline setting at the times of both construction and operation of the Scheme (the future baseline). Future changes to the baseline, without the Scheme, could result from both natural events such as the movement of protected ecological species, or from human activities, such as the development of homes and businesses in the area.

For each environmental topic, a prediction (based on either professional judgements or computer modelling, undertaken in accordance with industry guidance and methodologies) in regard to 'significant effects' has been provided. Significant effects can either be adverse (negative) or beneficial (positive) and indicate the greatest environmental impacts. Predictions regarding significant effects take into account the proposed mitigation and are the effect that is likely to occur once mitigation has been implemented, for example, landscape planting such as woodland and grassland.

Where significant adverse effects are identified, measures to avoid, reduce and mitigate these effects have been included within the assessment.

Air quality

What aspects of air quality could the Scheme potentially impact?

The key receptors that can be affected by changes in air quality are human health receptors such as residential properties, schools and nurseries, hospitals and residential care homes, and ecological receptors, such as such as statutory designated sites (Sites of Special Scientific Interest) and non-statutory designated sites (Local Wildlife Sites and Local Nature Reserves).

The air quality assessment considers the effect on selected receptors within 200 metres of any road expected to have a change in traffic. Receptors include those closest to the roads affected by the scheme, those that are representative of large numbers of properties, those that house the young, the elderly and other susceptible populations, as well as those near junctions, or locations with queuing traffic and ecological receptors.

What is the existing environment like?

There are two Air Quality Management Areas - an area where national air quality objectives have been breached - within the air quality study area. The study area is 200 metres from the construction activities or, during operation, the extent of the road network that could be affected by changes in traffic with the Scheme in place.

The two identified Air Quality Management Areas are:

- **Greater Manchester Air Quality Management Area -** jointly designated by local authorities within Greater Manchester and includes areas within the Tameside Metropolitan Borough Council area; and
- **Glossop Air Quality Management Area -** designated by High Peak Borough Council an area encompassing the properties between the A626 Glossop Road/A57 Dinting Vale junction and the A57 Dinting Vale/Dinting Lane junction.

Both Air Quality Management Areas have been declared for exceedances of the annual average nitrogen dioxide Air Quality Strategy objective.

Air quality monitoring data shows that in recent years there have been exceedances of the annualmean Air Quality Strategy objective for nitrogen dioxide at sites within the air quality study area. The highest annual mean nitrogen dioxide concentration was recorded at the Mottram Moor Junction in 2018.

Future nitrogen dioxide projections used by the Department for Environment, Food and Rural Affairs to report on compliance with the European Union limit values indicate that there are no current roadside exceedances of the annual mean nitrogen dioxide limit value in the air quality study area, or in the Scheme opening year of 2025.

There are four ecological sites with statutory designations within the air quality study area, three of which are considered to be sensitive to changes in air pollution, such as nitrogen dioxides:

- Dark Peak Site of Special Scientific Interest
- The Peak District Moors Special Protection Area
- The South Pennine Moors Special Area of Conservation
- Huddersfield Narrow Canal Site of Special Scientific Interest.

What are the effects during construction?

During construction, there is the potential for increased dust deposition and soiling at properties within close proximity of the Scheme boundary. However, this could be effectively controlled with appropriate mitigation measures set out in the Environmental Management Plan, such as regular water-spraying and sweeping of unpaved roads, using wheel washes for vehicles, sheeting vehicles leaving site and enforcing speed limits. It is therefore considered that significant adverse effects at nearby receptors would be unlikely.

Additional traffic from construction vehicles is considered unlikely to significantly affect air quality, given that the numbers of additional heavy goods vehicles per day does not meet the criteria for assessment.

Summary of construction assessment:

There would be no significant effects with the implementation of standard and suitable mitigation measures.

What are the effects during operation?

Human health receptors

There are expected to be exceedances of the annual mean nitrogen dioxide Air Quality Strategy objective in the opening year 2025 with and without the Scheme at human health receptors, but there are no new exceedances of the Air Quality Strategy objective with the Scheme in operation. Within the assessment study area, the modelling undertaken indicates that there would be a large beneficial change in air quality, with 75 roadside properties that exceed the annual mean nitrogen dioxide Air Quality Strategy objective experiencing an improvement in air quality with the Scheme in place. One residential property that exceeds the annual mean nitrogen dioxide Air Quality Strategy objective would have a small worsening in air quality with the Scheme. Overall there is no significant adverse effect on human health due to the Scheme, the overall impact of the Scheme is expected to be an improvement.

Ecological receptors

Only one non-statutory locally designated ecological site was identified as containing relevant habitat within the area exceeding the designated habitat screening criteria for nitrogen deposition however,the significance of effect has been assessed as not significant.

Summary of operational assessment:

The effects from the Scheme in operation are likely to result in a no significant adverse effect on human health with an overall improvement for human health. The overall significance of effect for ecological receptors within designated sites has been assessed as not significant.

Cultural heritage

What aspects of cultural heritage could the Scheme potentially impact?

The following receptors are considered in the assessment for cultural heritage:

- Designated heritage asset - A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation
- Non-designated heritage asset - buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets
- Potential buried remains of archaeological significance

What is the existing environment like?

The 1-kilometre study area contains 50 designated heritage assets. These comprise:

- One scheduled monument: Melandra Castle Roman fort
- Two grade II* listed buildings: The Church of St Michael and All Angels and adjacent Cross
- 45 grade II listed buildings
- Two Conservation Areas

Of these designated assets, the Mottram-in-Longdendale Conservation Area includes part of the existing A57 route which would be de-trunked as part of the Scheme.

There are no World Heritage Sites, Registered Parks and Gardens or Registered Battlefields within the site or study areas.

Within the study area, there are also 104 non-designated heritage assets, eight of these are located within the Scheme extent.

The archaeology within the Scheme represents a range of periods as well as being geographically dispersed. It is therefore assessed that there is an overall potential for both known and unknown buried archaeological remains within the Development Consent Order boundary. The surrounding landscape comprises a mixture of undulating pastural landscape, interspersed by post-medieval settlement and development predominately of 19th century date.

What are the effects during construction?

During construction, direct impacts on heritage assets occur as a result of earthmoving operations, creation of site compounds, road construction, and construction of overbridges and other structures however, these impacts would be temporary, short term and reversible.

Site clearance and construction works would result in a significant temporary adverse effect on the setting of the following listed buildings:

- Dial House and Dial Cottage. These works include the demolition of residential properties along Old Hall Lane, excavation of Mottram Underpass, and lighting of the construction works.
- Construction works including site clearance, excavation of the cutting for Mottram Underpass would result in temporary noise and visual intrusion from construction works which would result in a significant temporary adverse effect the setting of Mottram Old Hall.
- Construction of the Scheme would result in significant temporary adverse noise and visual effects which would result in a significant temporary adverse on the setting of Tara Brook Farm.

An Archaeological Fieldwork Strategy would be prepared prior to construction that includes excavation, targeted watching briefs, monitoring and sampling. This would ensure preservation by record of the known heritage assets affected and would enable identification and preservation by record of any previously unrecorded archaeological remains. Finds recovered from the site would be analysed, interpreted, archived, in consultation with the local authority archaeology advisor.

Summary of construction assessment:

There would be a significant temporary adverse effect on four cultural heritage assets.

What are the effects during operation?

Mitigation measures to avoid or prevent impacts on historic assets have been incorporated into the design of the Scheme. Key measures of particular relevance to cultural heritage include:

- Restraining the design to reduce land take for the Development Consent Order boundary as far as possible
- Design of landscape proposals to integrate the new link roads into the surrounding landscape and reducing visual impact by screening and filtering views of the Scheme
- Designing the lighting to minimise sky glow, reduce spillage and minimise effects on the surrounding landscape.

Following the application of mitigation measures, the presence of the Scheme would still introduce a notable element of highways infrastructure into the setting of Tara Brook Farm which would result in a significant permanent effect on this heritage asset during operation of the Scheme. No other significant effects would occur on any other heritage assets.

Any archaeological assets directly impacted by Scheme would have been removed during construction, therefore there would be no impacts arising from operation of the Scheme on archaeology.

Summary of operational assessment:

Permanent significant effects are anticipated on Tara Brook Farm due to changes to its setting. No other significant effects are anticipated as a result of the Scheme during operation.

Landscape and visual effects

What aspects of landscape and visual could the Scheme potentially impact?

The following receptors are considered when assessing the impact of the Scheme on landscape and visual assets

- Landscape – landscape and landscape related designations, land use, landscape elements and features and settlement and built elements.
- Landscape character areas – Landscape character is the distinct pattern of elements and features which together make up the pattern or sense of place.
- Visual receptors including residential properties, recreational receptors such as Public Rights of Way and cycle routes, road users, social and community facilities such as leisure centres, schools and cemeteries.
- This assessment has also considered the potential for indirect impacts on the Peak District National Park from traffic flow to the perceptual aspects of landscape.

What is the existing environment like?

The Scheme mostly lies within Tameside Metropolitan Borough Council, with a small section falling within the west boundary of High Peak Borough Council and Derbyshire County Council.

The Scheme is located across a range of landscape and townscape character areas, including open moorland slopes, river valleys, and within and adjacent to some densely populated urban areas. The urban areas contain a number of residential properties as part of larger settlements on the edge of Manchester, and clusters of properties/farmsteads as well as more scattered properties/farmsteads within the rural areas.

There is also a relatively dense network of Public Rights of Way and recreational routes within the Development Consent Order boundary and surrounding area, which include the Trans-Pennine National Trail, National Cycle Route 62, and the two regional long-distance paths, Tameside Trail and Etherow-Goyt Valley Way.

There are a number of individual trees, woodland and tree groups together with lengths of hedgerow within the Scheme extent. These include 21 Tree Preservation Orders, of which there are 18 individual trees, two woodlands and one group.

The Scheme lies outside of any designated landscapes at either the statutory/national or non-statutory/local levels. It is however considered to be within the setting of the Peak District National Park located just over 2 kilometres to the east.

Other key receptors that could be affected by the Scheme include a number of listed buildings, two Conservation Areas, and one Scheduled Monument. In addition, five Ancient Woodlands are present and one Local Nature Reserve (Hurst Clough) within a 1-kilometre study area.

The visibility towards the location of the Scheme is restricted by a network of intervening hedgerows, tree belts and woodland areas, and landform. Views in part are filtered or partial. Visibility is also further restricted by urban form within Hollingworth and Hadfield. However, there is opportunity for unfolding views, moving through the undulating landscape and patches of mature woodland.

Long-distance views are available across farmland enclosed by patches of mature woodland and landform. Notably those from Melandra Castle, St Michael and All Angels Church and Coach Road.

What are the effects during construction?

Construction effects include the loss of vegetation, alteration to the landform, the presence of construction machinery as well as the introduction of man-made features. It is considered these activities, although short term in nature, would be noticeable intrusive features. The largest effects would be in proximity to areas where construction of new structures and/or the changes to existing structures specifically at junctions, underpasses and bridges are proposed, such as Mottram Underpass and Mottram Moor Junction.

Visual receptors may also be affected by views of heavy goods vehicles, temporary construction lighting and other tall machinery used within the construction site. Visual receptors in proximity to the 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 are more likely to experience a significant adverse effect. These effects would be temporary as proposed mitigation planting establishes and matures.

Summary of construction assessment:

There would be temporary significant adverse effects on a number of landscape character area receptors as a result of the loss of vegetation, alteration to the landform, the presence of construction machinery as well as the introduction of man-made features.

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. There would be temporary significant adverse effects on visual receptors including a number of residential properties and Public Rights of Way /Trails around Roe Cross Road in vicinity of the Mottram Underpass.

What are the effects during operation?

The potential effects on the local landscape character would be focused around Mottram Moor underpass, the Bridge over the River Etherow, Old Mill Farm underpass, junction at Woolley Lane, and Carr House Lane underpass. Indirect impacts on the Peak District National Park were also assessed because of changes to traffic flows to the perceptual aspects of landscape. It is not expected that the scale of the Scheme would result in significant effects for landscape character.

The operational visual impacts of the Scheme are most likely to be long-term and permanent, although it is expected that the proposed mitigation planting would mature gradually following the construction phase. The potential landscape effects expected from operation of the Scheme are:

- Change in views because of new earthworks such as embankments and cuttings and drainage features
- The addition of new structures including Mottram Moor underpass, the Bridge over the River Etherow, Old Mill Farm underpass, and Carr House Lane underpass
- Introduction of new infrastructure elements including retaining walls, signage, drainage features and access tracks that could affect the pattern of the localised landscape
- The ‘opening up’ of the views due to vegetation removal
- The introduction of lighting to previously unlit areas

Views of the Scheme opened up from the construciton phase would remain until the proposed mitigation planting has matured. The Scheme encompasses mitigation requirements and potential enhancements for the ecology and landscape assets and has been developed in line with the following principles:

- Retaining and protecting existing mature trees and hedges as far as possible, maintaining important visual screening and biodiversity habitat
- Replacing any habitat losses as a minimum to maximise opportunities for net gains for biodiversity
- Retaining natural character and planting local native species
- Including extensive tree planting to provide screening to sensitive receptors
- Including earth contouring of environmental bunds together with integrated planting

Mitigation planting would take the form of a combination of woodland, shrub, scrub and grassed areas, some of this planting would be to offset vegetation lost as a result of the construction period. The remainder of the planting woud be to offset biodiversity impacts and to assist in the successful long term integration of the Scheme into the surrounding landscape.

Significant adverse effects are still anticipated in the short term following the opening of the Scheme, but as planting matures the visual screening would improve and these effects would be reduced in the long term. However, even with the establishment of planting some significant effects would still remain for a small amount of receptors centering towards northern areas of Mottram-in-Longdendale, in close proximity to Mottram Underpass.

Summary of operational assessment:

There would be no significant adverse effects on any landscape and townscape character receptors.

Once the landscape planting matures, it is anticipated that some residual significant effects would still remain for a small amount of receptors centring towards northern areas of Mottram-in-Longdendale.

It is not considered that there would be any significant indirect effects to the landscape character or visual amenity within the Peak District National Park due to traffic changes.

Biodiversity

What aspects of biodiversity could the Scheme potentially impact?

The following receptors have been considered when assessing the impact of the Scheme on Biodiversity.

Statutory designated sites

- Special Protected Areas and potential Special Protected Areas
- Special Area of Conservation and candidate or possible Special Area of Conservation
- Ramsar sites and proposed Ramsar sites

Non-statutory designated sites

- Sites of Biological Importance
- Local Wildlife Sites and
- Potential Nature Improvement Areas

Habitats and species

- Notable habitats, aquatic environments, plants, terrestrial and aquatic invertebrates, fish, reptiles, notable birds, such as barn owls, and protected species such as bats, otters and badgers

What is the existing environment like?

Two statutory designated sites for nature conservation lie within 2 kilometres of the Scheme. Hurst Clough Local Nature Reserve is situated 345 metres south and Great Wood Local Nature Reserve is situated 1.3 kilometres south of the Scheme. There are also 31 non-statutory designated sites for nature conservation within 2 kilometres of the Scheme.

The following protected sites are all approximately 2.2 kilometres north-east of the Scheme.

- Dark Peak Site of Special Scientific Interest
- The Peak District Moors Special Protection Area
- The South Pennine Moors Special Area of Conservation

There is no Ancient Woodland recorded within 500 metres of the Scheme. However, 15 separate parcels are present within 2 kilometres of the Scheme, with the closest parcel located 517 metres to the west.

Notable Habitats present within the biodiversity study area include Traditional orchard, Lowland mixed deciduous woodland, Wet woodland, Lowland dry acid grassland, Hedgerows and Flood plain mire.

There are eight ponds located within the Scheme area that could potentially be affected by the Scheme. Waterbodies that flow through the land within the Scheme include the River Etherow, Tara Brook, Hurst Clough Brook and Glossop Brook.

The habitats within and adjacent to the Scheme support the following priority and protected species: badger, bats (roosting, foraging and commuting), notable bird species, barn owl, water vole, otter, hedgehog, brown hare, common toad and aquatic invertebrates. Ecological surveys were undertaken to confirm the presence of populations of notable and protected species within or close the Scheme, and other species that make use of the habitats within the Scheme for foraging or travelling to other habitats.

A57 Link Roads
Environmental Statement: Non-Technical Summary

What are the effects during construction?

Potential effects during construction include physical loss, damage and fragmentation of habitats within the footprint of the Scheme, during site clearance works. Clearance for temporary access routes for construction traffic and site compounds would also result in temporary loss of habitats.

There would be potential for habitat damage during construction from dust deposition and chemical pollution. Damage to pond habitats may occur through dust deposition and runoff from general construction works. There is also the potential for accidental spills of chemicals and other potentially toxic substances to occur.

The construction of river crossings may result in temporary and permanent loss of habitat and permanent shading of habitats. There could also be physical loss, damage of watercourse habitats associated with the construction of new crossings (namely culverts), extensions to existing crossings, localised realignments and new drainage structures. Construction of the Scheme has the potential to result in adverse effects through the permanent loss of habitat including deciduous and wet woodland, grassland, hedgerows, and flood plain. However, these effects are not considered to be significant following the installation of replacement habitat. Loss of habitat and disturbance of species has the potential to result in permanent adverse effects on bats, badgers, barn owls, breeding birds, otter, brown hare, hedgehog and common toad.

To reduce the effects of the Scheme on biodiversity resources, mitigation and compensation measures have been incorporated into the design. These include protection of species during construction and appropriate reinstatement and creation of habitats. New habitat creation includes broad-leaved and wet woodland, lowland dry acid grasslands, hedgerows and flood plain mire.

A number of standing waterbodies and watercourses would be adversely affected by the Scheme during construction including the River Etherow, Tara Brook, Hurstclough Brook and five other unnamed watercourses. However, these effects are not considered to be significant following the implementation of mitigation measures proposed. Along Tara Brook and Hurstclough Brook, ecologically sensitive realignment would be undertaken to maximise channel length and improve habitat condition. The creation of three sustainable drainage systems would maximise ecological diversity through improving the natural habitat.

The application of appropriate mitigation measures would prevent harm to species and habitats through appropriate timing and methods of site clearance, use of buffers between construction areas, pre-construction surveys, and prevention of indirect impacts from lighting, noise, dusk or water pollution during construction. A European Protected Species Licence would be obtained from Natural England for works affecting bats and badgers. A method statement would be implemented to avoid the spread of non-native invasive species.

Summary of construction assessment:

No significant effects are expected to occur on any ecological receptors during construction with the prescribed mitigation measures in place.

What are the effects during operation?

Once traffic is using the new link roads, there is potential for effects on biodiversity. Movements of traffic could disturb and potentially displace species, such as birds. Lighting along the Scheme could impact on nocturnal species such as bats, otter or badger, if directed onto key commuting/foraging routes. Local changes in air quality could affect adjacent designated sites, or habitats, and there could be accidental damage or pollution of adjacent habitats from traffic incidents.

The Scheme's landscape strategy has been designed to maximise opportunities to improve biodiversity within the permanent land take. During operation, replacement habitats created during construction, as part of this strategy, would become established and would be suitable to support a diverse range of species that goes above and beyond the mitigation needed to offset the impacts of the Scheme. All newly created habitats would be managed and monitored as part of a long-term landscape and ecological management plan.

The design incorporates a number of key mitigation features such as a dedicated bat structure, artificial bat roosts, bird nesting boxes, badger setts, otter-proof fencing, new wildlife corridors and underpasses and planting to create and enhance habitats. Safe crossing points for mammals would be installed across the Scheme to make sure that animals such as badgers and otters stay connected to their habitats once the Scheme is open.

Fencing would also be used throughout the Scheme to prevent road mortalities and guide badgers and other large mammals to the safe crossing points. Otter-proof fencing would be installed, extending from each side of the River Etherow Bridge, to be installed on either side of the Scheme for a distance of at least 100 m in each direction, to prevent mortality through traffic collision.

A single-span bridge over the River Etherow and safe mammal passage included in the design would allow the continued movement of species along the river corridors. Creation of screen planting made up of tall vegetation is also incorporated into the design to encourage barn owls and bats to crossroads at a safe height above traffic. Hibernacula (made up of logs and brash) would be created at strategic locations around the Scheme to provide continued hibernation and refuge opportunities for common toad and hedgehogs.

New channels and watercourse realignments would be designed to be ecologically sensitive and to promote the natural water flows. Any structures associated with watercourse realignments, such as culverts, would also be designed to maximise connectivity with open channels.

Sensitive lighting would be designed to minimise light spill onto adjacent vegetation, including designated sites and other habitats adjacent to the Scheme.

Summary of operational assessment:

No significant effects are expected to occur on any ecological receptors during operation with the prescribed mitigation measures in place.

Geology and soils

What aspects of geology and soils could the Scheme potentially impact?

The Scheme has the potential to impact the following receptors:

- Land quality and soil resources
- Environmental receptors (such as controlled waters, ecology and property) and human health receptors from the mobilisation of contamination
- Hydrogeological regime (refers to variations in the state and characteristics of a ground water body)
- Groundwater and surface water quality
- Soil resources through degrading soil quality

What is the existing environment like?

The underlying geology across the study area is a mixture of clays, sand and gravels created by past glaciers and rivers which are underlain by bedrock of mudstone, siltstone and sandstone. Made Ground, which is soil containing man made material such as brick, may be present near the surface in developed areas associated with past construction or industrial use.

There are no Regionally Important Geology Sites or geological Sites of Specific Scientific Interest within 1 kilometre of the Scheme.

There are two mine entries on, or within 20 metres of the Development Consent Order boundary, towards the south west however it is understood that the risk of shallow coal mining is low.

The study area is not within a Groundwater Source Protection Zone however there are two Secondary A aquifers and one Secondary (undifferentiated) aquifer. There are no registered Environment Agency groundwater abstractions within the study area. There are five private abstractions from spring, surface and groundwater (borehole) located within the study area and some additional private spring, well and borehole abstractions within one kilometre of the Scheme.

Two geological fault lines are mapped to be crossing the Scheme. One is positioned across the A57 east of the existing M67 junction 4, at the western extent of the Scheme. The other fault crosses the location of the proposed Mottram Underpass, running north west to south east. Geological fault lines are where bedrock has been displaced.

Potential land contamination issues are identified in areas of historical landfills and infilled land, as well as other land uses such as gas works, and a bleach works. The site currently comprises a mixture of residential and industrial uses, with significant areas of agricultural land uses with any potential contaminative sources generally being associated with agricultural use.

The Provisional Agricultural Land Classification (ALC) map of north-west England shows all the study area to be Grade 4 (poor quality land).

The United Utilities Longdendale Aqueduct is a major service which the route crosses. Consultation is being undertaken with United Utilities to establish how their assets can be protected and would be considered further at the Detailed Design stage. Due to the lack of identified sources of contamination within the vicinity of the aqueduct, the Longdendale Aqueduct is not considered as a sensitive receptor as part of the geology and soils assessment.

What are the effects during construction?

Construction activities (such as piling, dust generation or groundwater control activities) have the potential to introduce new pathways for the migration of existing contamination. With standard construction best practice in place, such as, stockpile management, emergency procedures, records of environmental incidents, environmental monitoring outlined in the Environmental Management Plan, the Scheme is not considered to have any significant effects on geology and soils (including land quality and soil and agricultural resources) or human health (due to exposure to dusts during earthworks to local nearby residents).

Land temporarily acquired for construction would be restored to its original condition, so in the long term the effect on agricultural soil resources would not be significant. Agricultural land that is permanently acquired for the construction of the Scheme is of low value and is not considered to be a significant effect.

The Scheme is considered to have the potential to impact on groundwater and surface water quality through the creation of cuttings and from activities such as piling, although no significant contamination sources have been identified from chemical testing undertaken for the Scheme. This could result in temporary adverse effects on the identified aquifers in the area. Supplementary ground investigation has been recently undertaken to provide specific information on any unknown areas or sources of contamination. When reporting is available, this would be used to aid the Detailed Design process with appropriate mitigation measures being recommended. Overall, with appropriate mitigation in place, these effects are not considered to be significant.

Closed landfills are present within the Scheme; however, none are considered to pose an impact to the Scheme, due to nature of material accepted, age of infilling and the proposed works associated with the Scheme

The Scheme is also considered to have a potential impact on the hydrogeological regime (Manchester and East Cheshire Carboniferous Aquifers), however, appropriate mitigation measures such as piling during construction of cuttings to prevent the removal of water would result in a non-significant effect.

Summary of construction assessment:

With careful detailed design and the implementation of appropriate mitigation measures, no significant effects are anticipated to occur on any geology and soils receptors.

What are the effects during operation?

During operation, it is unlikely that new contamination pathways would be created, so the Scheme is not considered to have a permanent significant effect on geology and soils (including land quality and soil resources) or agricultural soils, or on any human health receptors.

No significant effects would occur on geology and soils receptors as a result of the Scheme.

Summary of operational assessment:

No significant effects are anticipated to occur on any of the geology and soils receptors.

Material assets and waste

What aspects of material assets and waste could the Scheme potentially impact?

Receptors which have the potential to be impacted by material resources use and waste generation, are defined as:

- The market for key construction materials, which are to be used for the Scheme.
- The waste arisings baseline - the amount of waste that is predicted to be produced during the whole life of the Scheme.
- The predicted capacity of waste infrastructure, both regionally (non-hazardous and inert) and nationally (hazardous), which are anticipated to arise from the Scheme during the construction phase.

What is the existing environment like?

The Materials and waste assessment considers the effects the Scheme would have on the capacity of the local and regional waste infrastructure (for example, recycling facilities and landfills) and the availability of aggregate materials within the region.

The baseline for materials and waste includes:

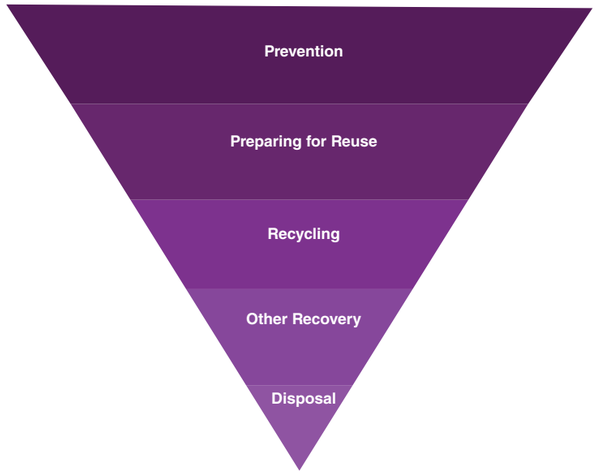
- The materials baseline - sourced from the North West regional baselines which identifies the main construction materials used. The regional sales of aggregate (the main material to be used on the Scheme) is estimated to be 8,760,000 tonnes per annum
- There are no Mineral Safeguarding Areas within the Development Consent Order boundary
- The waste infrastructure baseline - sourced from the Environment Agency Waste Data Integrators, which identifies the capacity of waste infrastructure for an area. Manchester, City of Derby and Derbyshire has the capacity to manage 921,715 tonnes of non-hazardous construction, demolition and excavation waste per annum, and 1,500 tonnes of hazardous construction, demolition and excavation waste per annuum.
- Material asset use and waste generation would be very low for the Scheme.

What are the effects during construction?

During construction, the Scheme has the potential to impact the market and availability of material assets and total available waste infrastructure capacity.

A wide range of material resources would be required to construct the Scheme. This includes concrete, cement, timber, plywood, reinforcing fabrics and geotextiles and packaging materials and construction activities would inevitably generate waste. Given the nature of the Scheme, large quantities of material could be excavated during construction.

Mitigation measures taken have followed the waste hierarchy to reduce, reuse, recycle and recover, as shown in the diagram below.



The key actions to reduce material asset use/material optimisation and waste generation at design stage are shown below:

- Shortened underpasses in various areas
- Reduced footprint of junctions
- Reduced road connection lengths
- Rationalised/reduced site compounds

Opportunities to re-use material resources would be sought where practicable and waste would be prevented and designed out in accordance with the requirements of the Environmental Management Plan. The main material generated during construction would be from excavations to build the Scheme. Where possible this would be used directly 'as excavated' in the construction of the embankments and landscaping works for the Scheme to achieve a cut/fill balance.

The Environmental Management Plan would also contain the following plans:

- Materials Management Plan - details how all construction phase materials (material resources and waste) would be managed
- Site Wate Management Plan - details the amount and type of waste that would be produced on a construction site and how it would be reused, recycled or disposed of

The Materials Management Plan would allow 99% of the excavated soil to be reused onsite, which would reduce the need for materials and generation of waste to be managed or disposed of offsite. This would also ensure the Scheme achieves a 'cut and fill balance'. As well as a commitment to achieve, at minimum, a 95% recovery rate for wastes managed offsite.

The Principal Contractor would reduce primary material use through a commitment to achieve, at minimum, the 30% recycled content target for the region. A stretch target of 40-50% recycled content for the region has also been set, through working with the supply chain and designing the road surface to best suit recycled content. However, as this considered an enhancement it has not been accounted for in the assessment.

It is likely the Scheme would have a slight environmental effect on local material availability however this effect would not be significant.

The Scheme would have a slight effect on landfill capacity and on waste infrastructure due to waste arisings during construction, however this effect is not deemed to be significant.

Summary of construction assessment:

There would be no significant effects on material assets and waste as a result of the Scheme during construction.

What are the effects during operation?

Material use and waste generation are expected to be very small during operation of the Scheme. Routine maintenance would include gully emptying and litter collection. Periodically, maintenance activities such as resurfacing would be required. Waste arising from these maintenance activities is expected to be generally the same (in both type and quantity) to that generated by the existing strategic highways network; and the wastes would be managed using the established procedures and facilities that are used across the strategic road network. For these reasons, an assessment of operational phase of the Scheme, in relation to material assets and waste, has not been undertaken.

Summary of operational assessment:

Operational effects of the Scheme on material assets and waste have not been assessed because of the Scheme during operation as it is clear that no significant effects would occur.

Noise and vibration

What aspects of noise and vibration could the Scheme potentially impact?

The Noise and vibration assessment considers impacts on existing residential receptors, including those located in proximity to the Scheme. There are also 'other noise sensitive receptors' which are considered in the assessment which include:

- Healthcare facilities, education facilities, community facilities, Environmental Noise Directive (END) quiet areas or potential END quiet areas, International and national or statutorily designated sites (for example, protected wildlife sites such as SSSIs).

What is the existing environment like?

The noise assessment has considered the locations that could be sensitive to changes to noise within 300 metres of the Scheme for construction and 600 metres from the noise study area during operation. A number of notable non-residential noise sensitive receptors are located in proximity to the Scheme, including healthcare facilities, education facilities, community facilities, Public Rights of Way, cultural heritage assets and statutorily designated sites.

There are five Defra Noise Important Areas in close proximity to the Scheme, which are areas that have been identified as being subject to high levels of noise are located near the Scheme.

Baseline noise monitoring surveys were carried out during June and July 2018. The dominant noise source influencing the noise climate in the area consists of road traffic noise from vehicles traveling along (from east to west) the B6174, A6018, A57, and A628.

Summary of construction assessment:

Potential significant temporary adverse effects are predicted to occur at six assessment locations due to daytime construction noise. These are the assessment locations closest to the Mottram Underpass.

No significant effects would occur due to construction noise during the night-time.

What are the effects during construction?

The Environmental Management Plan implemented during construction would include a Noise and Vibration Management Plan to control noise and vibration emissions from the construction works. The Noise and Vibration Management Plan shall incorporate good working practices and Best Practicable Means, including but not limited to the following measures where practicable. Implementation of a Community Engagement Plan would also ensure that local residents and other affected parties are kept informed of the progress of the works, including when and where the noisiest activities would be taking place and how long they are expected to last. Even with appropriate mitigation in place, it may not be possible to eliminate all noise and vibration impacts, as outlined below. However, best practice, considerate working hours as well as frequent and open communications with stakeholders would help to reduce the residual impact of construction noise and vibration.

Although construction noise impacts would be temporary and managed through measures in the Environmental Management Plan, some sensitive receptors have the potential to experience high noise levels due to a number of different construction activities over multiple construction phases. This is most likely at a couple of properties at Old Road and a single property at Tollemache Close, where significant adverse effects have been predicted during construction phases spanning approximately 18 months. These effects are attributed to demolition works, piling at Mottram Underpass, and work on the Mottram Underpass structure.

During the construction phase, potential significant adverse effects were predicted at six assessment locations due to daytime construction noise from individual construction activities. These are the assessment locations closest to the Mottram Underpass. No potential significant adverse effects were identified at night.

What are the effects during operation?

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.

The design of the Scheme was selected to reduce road traffic noise emissions as far as possible in the operation phase given other environmental and engineering constraints. This was achieved through consideration of the road alignment, junction designs, maximising the heights of cuttings and embankments close to noise sensitive receptors, use of low noise road surfacing and environmental noise barriers.

With the inclusion of mitigation measures, the Scheme would still would introduce a new noise source to the local area resulting in significant adverse road traffic noise effects on the following receptors:

- 8 dwellings on Edge Lane
- 20 dwellings on Ash Close
- 24 dwellings and 2 other sensitive receptors on Tollemache Close, Old Hall Lane, Old Hall Close and Old Road
- 50 dwellings on Market Street, Back Lane and Temperance Square
- 5 dwellings on Carrhouse Lane and Woolley Lane
- 9 dwellings along Woolley Bridge, including one farmhouse, which would also potentially qualify for an offer of noise insulation.

A total of 126 dwellings and 2 other sensitive receptors have been identified as having significant adverse effects due to the Scheme.

The predicted significant adverse effects are coupled with significant beneficial effects on Hyde Road and other properties within Mottram-in-Longdendale where the Scheme results in decreases at a locations with high existing noise levels. There are 357 dwellings and 9 other sensitive receptors identified as having significant beneficial effects. These dwellings are mainly located along Mottram Moor, Woolley Lane, Market Street, Hyde Road, Ford Grove and John Kennedy Road.

After the Scheme opens, groundborne vibration at vibration sensitive receptors would be avoided through regular maintenance of the road surfacing to minimise road surface roughness and undertaking remedial works when road surface irregularities are identified. On this basis, no adverse or significant adverse effects from groundborne vibration are likely from the Scheme.

Summary of operational assessment:

Significant adverse effects are predicted to occur on 128 noise sensitive receptors during operation of the Scheme.
Significant beneficial effects are predicted to occur on 366 noise sensitive receptors during operation of the Scheme.

Roe Cross Road looking North West

Population and human health

What aspects of population and human health the Scheme could potentially impact?

The Scheme has the potential to affect residential dwelling, commercial facilities, community facilitates, agricultural holdings, residents, walkers, cyclists and horse riders.

The Scheme could also impact human health, which is informed by the population 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.

What is the existing environment like?

Settlements of note located in and around the Scheme extent include Hattersley, Mottram-in-Longendale, Hollingworth, Hadfield and Gamesley. The identified settlements also include a variety of social and community infrastructure, including education and healthcare facilities, community centres, places of worship, libraries and sporting facilities. A number of commercial assets have been identified towards the east of the Scheme, including enterprises within Dinting Lodge Industrial Estate, Glossop Caravans and a BP Petrol Station. The Mottram Agricultural Showground is located to the north of the Scheme.

The principle land use within the footprint of the Scheme is agriculture including seven agricultural holdings. 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.

There are a large number of Public Rights of Way and footways within 500 metres of the Scheme. The main roads through the study area are the M67, A57, A560 and the A6018.

The human health baseline focuses on the population 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.

Life expectancy at birth for men and women within Tameside is slightly lower than the national average for England. Life expectancy at birth for men and women within High Peak is similar to that of the national average.

The unemployment rate in Tameside was slightly higher than North West as a whole. The unemployment rate in High Peak was lower than the East Midlands as a whole.

What are the effects during construction?

Land use and accessibility

The Scheme has been designed to minimise agricultural land take as far as reasonably practicable. Mitigation measures during construction would include temporary and permanent diversions and signage to limit the impacts on pedestrians, cyclists and equestrians and maintain agricultural accesses. The Traffic Management Plan would allow ongoing access to the existing A57 where possible and minimise potential disruption and severance for communities nearby. This would include overnight and weekend closures where possible. Therefore, the effects on the existing road infrastructure as a result of traffic management during construction would be temporary and not significant.

With the mitigation measures in place the following would result in significant adverse effects:

- The permanent loss/demolition of properties, industrial units and displacement of residents. It would also require land formally recognised as the Mottram Agricultural Showgrounds. 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
- Temporary disruptions to access regarding private property, housing and community facilities.
- Temporary loss / closure / diversion would be required at several Public Rights of Ways,
- Loss of seven agricultural holdings because of severance or land take. Where appropriate, underpasses or the creation of access to severed portions would be provided at five of the holdings.

Human health

During construction of the Scheme there would be the following impacts on human health

- The permanent land take/demolition of residential properties and commercial units and the loss of agricultural land holdings and / or severance at Farm holding
- Changes to the local area resulting from amenity / access impacts at houses within the study area, changes in access to and availability of good quality housing within the study area and 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)
- The 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
- Temporary severance, disruptions to access, pedestrian and cyclist delays and increases in journey length as well as temporary loss of amenity on the Public Rights of Way and the Transpennine Trail. Temporary loss of amenity on other active travel provisions within the Development Consent Order boundary including Public Rights of Way and the Transpennine Trail
- Impacts associated with the impacts associated with risk of air pollution, soil and water pollution, noise pollution and vibration, and landscape amenity

For all those health and well-being receptors considered, a negative health outcome would result during the construction of the Scheme.

Summary of construction assessment:

A number of residential properties and industrial units would be demolished.

Temporary disruption to access to residential properties and community facilities would occur.

Temporary closures and diversions would be required at several Public Rights of Ways causing potential disruption for users.

Impacts to several agricultural smallholdings due to severance or land take.

What are the effects during operation?

The Scheme design includes the permanent diversions of footways and public rights of way to maintain connectivity of the local network of footpaths bridleways and footways. Users would experience reductions and increases in journey length however these changes are not considered to be significant. Reductions in traffic on local roads and the provision of new and improved walker, cyclist and horse rider facilities in the form of shared footways, bridleways and cycleways would provide improved and attractive pedestrian, cycling and horse riding facilities that would have a positive effect on road safety in the area.

With the application of mitigation measures, the assessment does not find significant effects for any of the wider determinants of health for land use and accessibility during operation. 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

Summary of operational assessment:

There would be no significant effects on Population and human health receptors as a result of the Scheme during operation.

A57 Link Roads
Environmental Statement: Non-Technical Summary

Road drainage and the water environment

What aspects of the road drainage and water environment could the Scheme potentially impact?

For the assessment of road drainage and the water environment, the following are considered:

- Water quality – changes to watercourse chemistry and condition
- Flood risk – changes to risk from flooding
- Hydromorphology – changes to physical characteristics and functioning of watercourses
- Groundwater – changes to groundwater quality and quantity)

What is the existing environment like?

There are three main rivers within the study area including River Etherow, Hurstclough Brook and Glossop Brook.

Six Water Framework Directive water bodies are within the study area, comprising five river water bodies and one groundwater body:

- Glossop Brook (Long Clough to Etherow)
- Etherow (Glossop Brook to Goyt)
- Etherow (Woodhead Reservoir To Glossop Brook)
- Tame (Chew Brook to Swineshaw Brook)
- Wilson Brook
- Manchester and East Cheshire Carboniferous Aquifers

The study area is dominated by the Millstone Grit Group which comprises a sequence of thick sandstone (or grit) units interbedded with mudstone and/or siltstone units.

The study area for this Scheme is underlain by a single bedrock aquifer: Manchester and East Cheshire Carboniferous, classified as a Secondary A aquifer, which has potential to support water supplies at a local scale.

The majority of the Scheme is located in the low risk Flood Zone 1, however areas of Flood Zone 2 (medium flood risk) and Flood Zone 3 (high flood risk) associated with flood risk from the River Etherow are crossed by the Scheme near the proposed River Etherow Bridge

There is a high degree of faulting throughout the area, often offsetting sandstone and mudstone units against one another and creating a block-like sub-crop pattern. In the Mottram area, intersecting the proposed Mottram underpass there is a NW-SE trending geological fault, which has a significant effect on the groundwater regime.

What are the effects during construction?

Temporary construction activities could impact upon surface water quality and flows, as well as impact upon groundwater quality and flows. Impacts upon surface water and groundwater could result from accidental spillages or sediment containing run-off causing pollution and risk of contamination to surface water and groundwater, localised disruption to groundwater levels and worsening flood risk. With the implementation of industry best practice and other mitigation measures, such as the inclusion of sustainable drainage systems, realignments and in-stream channel works, no significant adverse effects are predicted for water quality and hydromorphology.

The design process has also sought to minimise in-channel working during the construction process. Where in-channel working cannot be eliminated entirely, best practice guidance would be adhered to. Temporary in-channel works would only be undertaken at certain times of the year to avoid impacts on sensitive aquatic habitats.

Construction activity in the vicinity of the River Etherow, including compensatory flood storage provision, flood embankment and right bank groundworks would be carefully programmed so as not to increase flooding risk to others, resulting in a non-significant effect.

Summary of construction assessment:

There would be no significant effects with the implementation of mitigation measures on road drainage and the water environment.

What are the effects during operation?

During Scheme operation, road run-off during rain events could result in flooding and cause pollution impacts on surface water and groundwater. As such, a road drainage system would be provided which would collect highway runoff, with water being discharged into ponds and watercourse. A number of wet ponds, filter drains, broad and vegetated channels, new highway ditches and flow separators have been incorporated into the overall drainage strategy. These have been designed to mimic natural drainage and to provide naturalistic ecological habitat. The Scheme has been designed to consider predicted changes in rainfall and river flow due to climate change.

This drainage strategy also includes compensation for where there is loss of floodplain storage close to the River Etherow Bridge. This would be provided by a Flood Compensation Storage Area. Furthermore, where the Scheme interacts with the River Etherow, impacts are minimised by including a single span crossing.

The Hurstclough Brook and Tara Brook would need to be permanently realigned for the Scheme. New channels and watercourse realignments would be designed to be ecologically sensitive and to promote a natural water flow. Any structures associated with watercourse realignments, such as culverts, would also be designed to maximise connectivity with the open channel.

Summary of operational assessment:

No significant effects on the water environment are likely to occur.

Climate

What aspects of the climate could the Scheme potentially impact?

This assessment considers:

- Effects of the Scheme on climate change - The potential effects of the Scheme on climate, in particular changes to greenhouse gases emissions emitted during both construction and operation
- Vulnerability of the Scheme to climate change - in particular the impacts of extreme weather (caused by climate change) during operation and construction and design measures that can be made to manage these effects.

What is the existing environment like?

Effects of the Scheme on climate change:
The transport sector was the largest emitting sector of UK greenhouse gas emissions in 2018, contributing 28% of emissions. For the assessment baseline, the quantity of emissions that are generated by the existing road users in terms of greenhouse gases were predicted, together with the operation and maintenance of the existing A57. The assessment was then based on a comparison of these predicted greenhouse gas emissions without the Scheme in place with predicted greenhouse gas emissions from both the construction and operational stages of the Scheme.

Vulnerability of the Scheme to climate change:
The assessment considers the current climate, as well as the projected climate changes for the region. The current climate within the north west of England is one of relatively mild winters and mild summers and the monthly temperatures are average for the UK. Long term it is projected that, on average, the north west of England is likely to experience hotter and drier summers and warmer and wetter winters.

Alongside these changes in the average conditions, it is likely that climate change would increase the frequency and severity of extreme weather events, such as heavy rainfall, storms and heatwaves.

What are the effects during construction?

Effects of the Scheme on climate change: Emissions are produced from the production and transportation of materials to be used in construction and those emitted onsite through construction activities (for example from emissions from fuel use in construction plant). The majority of greenhouse gas emissions during construction are likely to arise from production of materials, followed by the transport of materials to site, then on-site construction activities.

Mitigation measures include exploring the potential for low carbon solutions (including technologies, materials and products) to minimise resource consumption and reusing and / or refurbish existing assets to reduce the extent of new construction. Minimising the effects of the Scheme on climate change in this way would include applying the carbon reduction hierarchy: Avoid/prevent, Reduce and Remediate.

To fully embed the carbon reduction hierarchy in the project team's ways of working, they have committed to look at ways to reduce carbon emissions across the whole life of the project:

- At the design stage, the Scheme has been developed to minimise carbon emissions in all cases to contribute to the UK's target for net reduction in carbon emissions. This has included modifying the design which has resulted in the removal of new infrastructure that had previously been proposed (for example the Roe Cross link road and roundabout) and reducing the size of the River Etherow Bridge to be single span. This has reduced the volume of materials required.
- At construction stage, this has been considered through reusing materials on site (for example to build earthworks), using recycled materials to reduce emissions for the production of new materials, purchasing materials locally to reduce transport, and using electricity from renewable sources, as well as using electric and hybrid vehicles where feasible. Carbon emissions would be predicted and measured at key points during the process, to make sure lower carbon materials and methods are always considered.

Vulnerability of the Scheme to climate change:
construction is not expected to be sufficiently far into the future for the climate to change so significantly that construction related impacts would be different to those expected in the current climate. Climate change would therefore not intensify construction related impacts and accordingly no significant construction effects are identified.

Summary of construction assessment:

No significant construction effects are predicted

What are the effects during operation?

Effects of the Scheme on climate change:
The UK government has set legally-binding 'carbon budgets' which are targets to be met as part of the pathway to achieving the long term objective of achieving 'net zero' carbon emissions by 2050. The Scheme would lead to an increase in greenhouse gas emissions once operational, as the traffic is expected to increase across the local network. However, it is considered unlikely that the Scheme's greenhouse gas emissions would, on their own, be significant enough to affect the UK government's ability to meet any future carbon budget targets. Furthermore, mitigation measures that are embedded into the Scheme design would make sure opportunities to reduce emissions are considered throughout the life of the Scheme.

Vulnerability of the Scheme to climate change:
The assessment finds that the Scheme could be vulnerable to operational impacts linked to changes in the UK climate, as projections for the 2050s consider that average mean temperatures are likely to increase throughout the year leading to warmer and wetter winters. Warmer temperatures are likely to result in a reduction in the cost and frequency of winter road maintenance and improved driver safety.

The increased risk of heat waves could lead to increased deformation and rutting of road surfaces as well as over expansion and buckling structures including bridges. Increased erosion due to drier summers may occur which may cause sedimentation with the drainage infrastructure. Higher rainfall is also predicted which can lead to increased flooding, pothole formation and also reduce driver safety.

Mitigation measures that either avoids these impacts, minimises them or reduces their consequences include using materials that are resistant to twisting and buckling due to hot weather, reducing the need for maintenance, ensuring structures are made from materials that can adapt to expected future variations in temperature, retaining trees where possible and replacing trees and vegetation that is removed, allowing for climate change in the drainage design and flood risk assessment, and futureproofing the landscape strategy of the Scheme from climate change by including a diverse range plant species, including drought tolerant species, whilst still having regard to the local character, and generally planting only native species.

Summary of operational assessment:

No significant operational effects are predicted.

Cumulative effects

What aspects of the Scheme would potentially impact on cumulative effects?

There are principally two types of cumulative impact:

- Single project cumulative effects (e.g. numerous different effects impacting a single receptor) which are those which arise from the reaction between effects of a single project on different aspects of the environment, e.g. numerous different effects impacting a single receptor)
- Different projects cumulative effects (together with the project being assessed) which are those that result from additive effects caused by different projects together with the project being assessed.

Single project cumulative effects assessment

This assessment requires the identification of receptors that would be affected by more than one element of the Scheme during construction and operation. Where there is more than one effect on a particular receptor, it is determined whether there is the potential for an interaction between the environmental topics.

To avoid duplication of information or assessment, a number of interactions are not considered in the single project cumulative effect assessment as they have been dealt with in the relevant chapters already. For example the Population and human health assessment considers identified effects from other environmental topics (Air quality, Noise and vibration, Landscape and visual effects, Geology and soils and the Road drainage and water environment).

Summary of construction assessment:

The construction of the Scheme would result in significant effects on residential receptors in close proximity to the construction of Mottram Underpass (Four Lanes and Tollemache Close) as a result of visual and noise impacts.

A number of properties have the potential to experience combined impacts associated with visual intrusion and noise, vibration during the Scheme construction phase. Such combined impacts are predicted where Scheme construction activities would be taking place in close proximity to such receptors. The Environmental Management Plan would include a range of best practice construction measures that aim to minimise the potential for construction phase environmental impacts (e.g. impacts associated with visual intrusion, noise, dust and vibration). Implementation of the measures as detailed in the Environmental Management Plan would therefore aim to minimise the occurrence of single project cumulative effects.

Summary of operational assessment:

The operation of the Scheme would result in significant effects on residential properties. Again, these would be for receptors in close proximity to Mottram Underpass, as a result of visual and noise impacts.

Different project cumulative effects assessment

A review of planning applications made to local authorities, as well as other National Significant Infrastructure Projects and Transport Works Act Orders developments within the area around the Scheme was undertaken to identify any other developments which have the potential to result in a different project cumulative effect together with the Scheme.

Forty-two other residential, employment and mixed-use developments were identified and assessed in the vicinity of the Scheme. The predicted traffic flows associated with area developments were accounted for in the traffic data used for the noise, air quality and human health assessments. As such, for those developments included in the traffic model these assessments are considered to be inherently cumulative and were not assessed again in this chapter.

The assessment concluded that no significant different project cumulative effects with other developments would be likely during construction or operation.

What happens next

Highways England has submitted an application under Section 37 of the Planning Act 2008 for an Order to grant Development Consent for the Scheme. Following submission of the application for Development Consent, the Planning Inspectorate will consider, on behalf of the Secretary of State for Transport, whether the application should be accepted for examination.

If accepted, the documents accompanying the application will be publicly available on the Planning Inspectorate's website. Interested parties will be able to make relevant representations about the Scheme and its potential impacts. Representations received by the Planning Inspectorate will be considered as part of the examination into the application.

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