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APPENDIX 2

Hereford Western Bypass

Phase One Full Business Case

Herefordshire Council

June 2026

Delivering a better world

Quality information

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Revision History

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1. Strategic Dimension

Hereford Western Bypass

Phase One - Strategic Dimension

Herefordshire Council

June 2026

Delivering a better world

Quality information

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1 Introduction

1.1 Foreword

1.1.1 The Hereford Bypass is a transformational opportunity to improve the environment through the city centre, making it a more attractive location, to live, work, study and undertake leisure activities. The full bypass also provides more resilience with an additional river crossing, as well as the opportunity to provide more homes within the city and support economic development and growth, supporting the expansion of existing employers as well as attracting new jobs and businesses to the city.

1.1.2 The full Hereford Bypass is a major road scheme, that will require significant external funding from the Council, Government (Department for Transport), National Highways and the private sector (e.g. employment site and housing developers). Recognising this the bypass will be delivered in two separate phases.

1.1.3 Funded entirely by Herefordshire Council, Phase One will start to the south of the city linking the A49 to A465. Phase One will provide the key building block from which the remainder of the bypass can be constructed. Phase One will also provide localised benefits in its own right, in particular through improving access to the Rotherwas Industrial Estate and the adjacent Hereford Enterprise Zone, which collectively are the largest employment area in the city; together with reducing traffic in the residential areas across South Wye and also reducing the inappropriate use of rural roads across the south of the city.

1.1.4 Phase Two will commence from the Phase One/A465 junction and route to the west of the city, before turning east to link back with the A49 to the north of the city. This stage of the scheme is in an earlier stage of development, with updated proposals for this element of the scheme anticipated to be published in 2027.

1.1.5 The complete bypass scheme is anticipated to provide significant benefits to the city of Hereford, reducing the volume of traffic travelling through the city centre and enabling significant growth to the west and north of the city. Phase One of the bypass is a downpayment on achieving transformational change within the city. The benefits of Phase One are modest relative to full bypass but still represent value for money in isolation; the benefits being mostly located across South Wye and the rural areas to the south of the city. However, the scale of benefits from Phase One makes it a value for money investment.

1.1.6 This Full Business Case document sets out the case for investing in Phase One of the bypass. This detailed report shows that across numerous different analysis types covering policy, environment, traffic and economy, that delivering Phase One by itself provides improvements that will benefit residents of the city and surrounding areas and represents a Value for Money investment.

1.1.7 The complete Hereford Bypass provides the opportunity to transform the City of Hereford. The delivery of Phase One of the bypass represents the first step of that journey. Whilst Phase One will not enable the scale of transformational change that the full bypass will, it will make a significant difference in South Wye whilst also providing that first step to a larger improvement for the whole city.

1.2 Overview

1.2.1 This report sets out the Full Business Case for the delivery of Phase One of the Hereford Western Bypass. This initial phase will act as the key enabler for the delivery of the full bypass at a later date, whilst also providing benefits in its own right to the people and transport networks in Hereford south of the River Wye.

1.2.2 These benefits include improved connectivity to the large employment area in the south of the city (Rotherwas Industrial Estate and Hereford Enterprise Zone (HEZ)), which will have a number of associated benefits such as relieving residential route pressures in the South Wye area, economic growth and improved business productivity, reductions in noise and air pollution close to residential receptors and improved social outcomes.

1.3 Scheme Background

1.3.1 The proposal for a bypass of Hereford was initially developed over 30 years ago in the early 1990s. Since then, various options for both eastern and western alignments (of the city centre) have been considered.

1.3.2 The preference for a western bypass came out of study work conducted between 2010-2013 and was included in the adopted Herefordshire Local Plan Core Strategy 2011-2031, as a key element of the long-term Hereford Transport Strategy (HTS). The scheme was identified in the Local Plan as a strategically important piece of infrastructure in reducing through traffic in the city centre and enabling the delivery of walking, cycling and bus improvements on the existing highway network, whilst helping to facilitate significant growth proposals.

1.3.3 At the same time, the South Wye Transport Package (SWTP) was identified in the Local Transport Plan (LTP) as an important strategy for promoting economic growth within Hereford whilst tackling specific problems in the South Wye area. The SWTP was part of the broader HTS and a key element of the package was the inclusion of a new Southern Link Road (SLR), from the A49 to the A465 (now forming ‘Phase One’ of the Western Bypass).

1.3.4 Delivery of the SLR and wider Western Bypass were the preferred options through the 2010s, based on various option assessment works. In May 2015, a planning application for the SLR was submitted and approved in July 2016 (which remains extant). Nominal works commenced in July 2019 to keep the planning permission live.

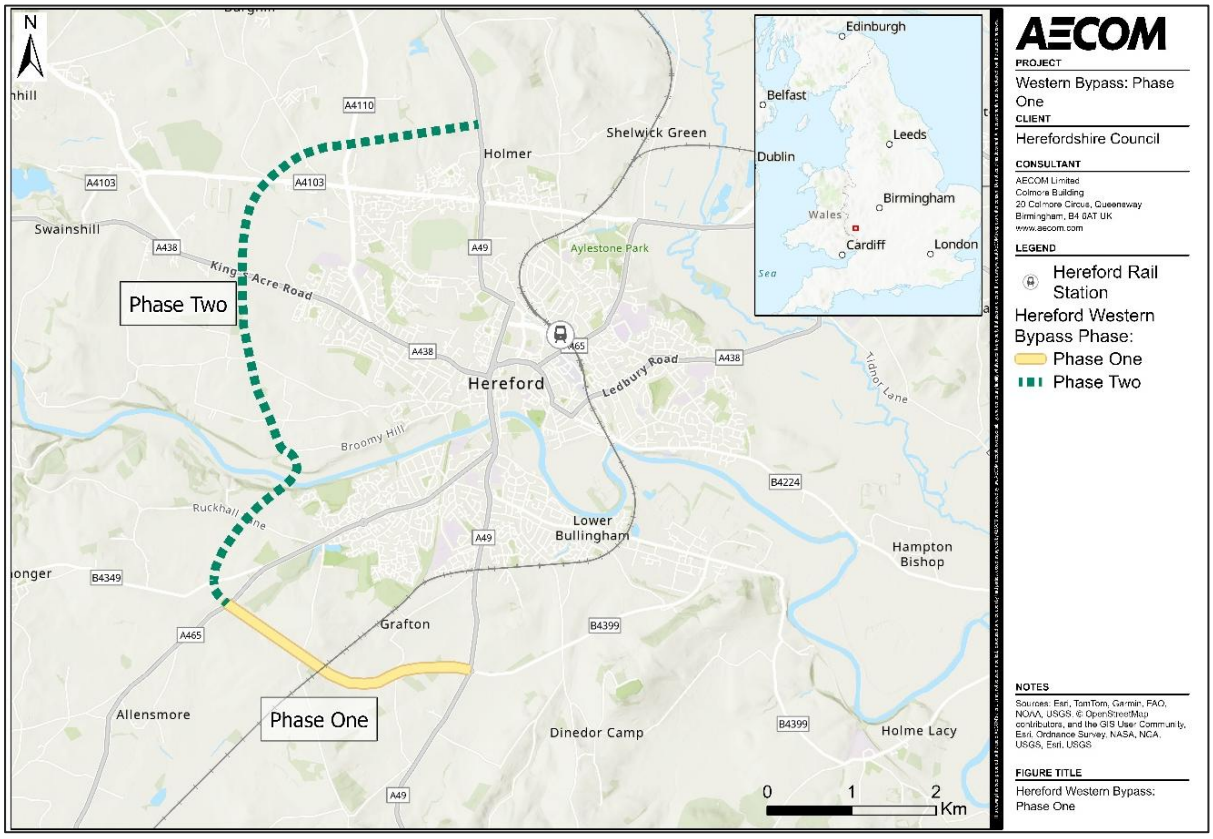
1.3.5 However, following the May 2019 Council elections, a decision was taken to pause work on all new major road schemes in Herefordshire. This meant that work that had started on the FBC in 2018 for the SWTP was halted. Between 2020–2021, consideration was given to a range of active travel measures and an eastern alignment of the bypass (the Eastern River Crossing). This decision was reversed following the elections in May 2023, with the New Road Strategy for Hereford (2024) recommending that progress should be recommenced with the Western Bypass.

1.3.6 In addition, the update to the National Planning Policy Framework (NPPF), published in December 2024, almost doubled Herefordshire’s housing target, leading to an increased focus on growth to the north and west of Hereford. This further emphasised the need for the full bypass to the west of Hereford which will likely have a significant role in unlocking land for housing and employment uses in the city.

Western Bypass – Phase One and Two

1.3.7 There are two Phases of the Hereford Western Bypass, which are shown in Figure 1-1.

Figure 1-1: Western Bypass Phases



1.3.8 Phase One forms the focus of this Full Business Case (FBC) which has been developed using the latest Department for Transport (DfT) business case guidance.

1.3.9 Phase One is the critical first stage of the broader, long-term Western Bypass scheme which sets the foundation for the future phase (Phase Two) whilst providing initial standalone, meaningful benefits across the South Wye area as described throughout this business case. Full planning permission is in place for Phase One. The alignment is fixed and forms the southern part of the overall Hereford Bypass project, providing a link between the A465 and A49.

1.3.10 Phase Two forms the northern component of the Western Bypass, connecting with Phase One at the A465 junction and providing onward connectivity, routing to the west of the city centre, including a crossing on the River Wye via a viaduct structure, before connecting with the A49 to the north of the city. It is at a less-advanced stage than Phase One but remains a key component of the wider bypass scheme, whereby the full strategic and network benefits will only be realised through the completion of both phases.

2 Strategic Dimension

2.1 Overview

2.1.1 The Strategic Dimension sets out the strategic rationale for the scheme, establishing the case for change and demonstrating how Phase One of the Hereford Western Bypass aligns with national and local policy, scheme priorities and key objectives. It summarises how the scheme supports wider transport and development strategies for Hereford, including improved access to the Rotherwas Industrial Estate and Hereford Enterprise Zone and enabling future delivery of Phase Two, to complete the Western Bypass.

2.1.2 The chapter is split into the following sections:

- Overview of study area;
- Scope of the scheme and approach taken to identifying the preferred scheme;
- Strategic context, including alignment with national and local policy;
- The 'Case for Change', based on network performance, socio-economic and environmental indicators;
- Detail on the stakeholder support expressed for the Phase One scheme;
- Objectives of the scheme;
- A Logic Map and detail on the measures for success of the scheme;
- Constraints and dependencies associated with the scheme;
- Scheme risks; and
- Findings from the Equality Impact Assessment (EQIA) undertaken for the scheme

2.2 Study Area

2.2.1 Phase One of the bypass is located within the South Wye area of Herefordshire, to the immediate south of Hereford city centre. The South Wye area contains large residential areas as well as the Rotherwas Industrial Estate and Hereford Enterprise Zone.

2.2.2 The Rotherwas Industrial Estate is a major employment site in Hereford, currently supporting over 350 companies and 3,500 jobs. The Hereford Enterprise Zone adjoins onto the Rotherwas site and currently accommodates a further 2,000 jobs in 91 companies with more construction underway. The scale of Rotherwas and the HEZ means that these collectively provide an important industrial and employment site that support the wider county and not just the city of Hereford. Throughout the remainder of this business case, we will refer to the Rotherwas and Enterprise zone site collectively as the HEZ.

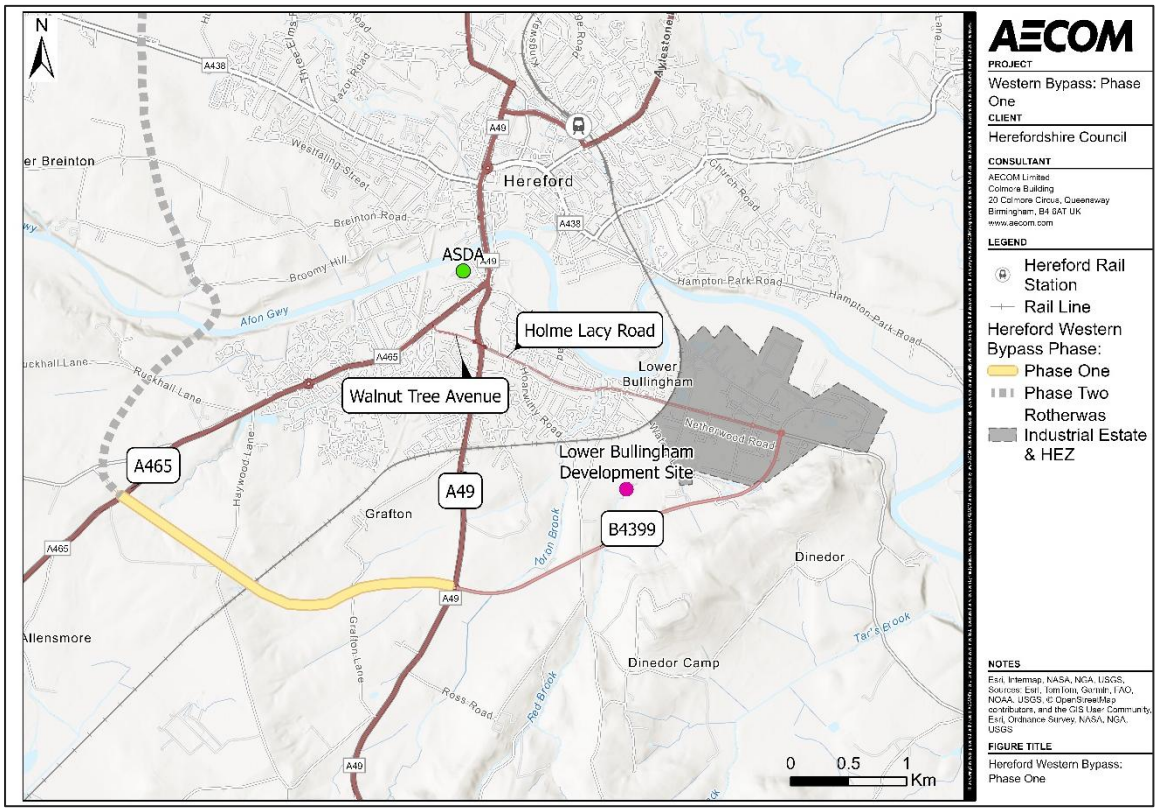
2.2.3 Lower Bullingham to the immediate east of the Phase One scheme is contains a proposed mixed-use site within the currently adopted Local Plan, which would also deliver significant housing and employment opportunities to the local area. South Wye is supported by a network of local distributor roads, including Holme Lacy Road and the B4399 which provide connectivity to the HEZ, along with the A49 and A465 which route through the study area.

2.2.4 Beyond the residential and commercial areas, the remaining land outside of the city is largely rural with several small settlements and villages.

2.2.5 The A49 and A465 are strategic routes which connect south of the city, at the "ASDA Roundabout" and provide a key corridor into and out of Hereford city, and across the River Wye. The A49 (which is part of the Strategic Road Network (SRN)

and managed by National Highways) currently has the only river crossing (Grey Friar's Bridge) in Herefordshire capable of carrying large volumes of traffic. The Phase One scheme will provide an important link between the A49 and A465. Figure 2-1 sets out the location of the Phase One scheme in the context of the South Wye study area.

Figure 2-1: Hereford Bypass Phase One Study Area



2.3 Scheme Scope and Option Assessment

Scheme Scope

2.3.1 The alignment for Phase One is fixed and forms the southern part of the route section of the overall Hereford Bypass project. Full planning permission is in place for Phase One. The scheme proposed under planning application ref. P151314/F will provide a new single carriageway road (one lane in each direction) between the A49 Ross Road at the roundabout with Rotherwas Access Road and the A465 / B4349 Clehonger Link Road junction.

2.3.2 The proposed route is approximately 3.6 km in length with a design speed of 60mph and extends westwards from a new fourth arm to the existing A49 roundabout, through Grafton Wood, continuing over Grafton Lane at Withy Brook before crossing above the existing Hereford to Newport railway line. It then passes below Haywood Lane and continues in a north westerly direction to the A465, where a new four arm roundabout would be provided with two entry lanes and two exit lanes. The road then extends from the proposed roundabout creating a new link to the B4349 (Clehonger Road).

2.3.3 Phase One also anchors and facilitates the wider Hereford Western Bypass (through delivery of the Phase Two element of the scheme), which will bring significant benefits to the city, county and wider region, enabling ambitions for housing and employment growth to be realised.

2.3.4 A detailed layout of the scheme is provided in Appendix A.

Option Assessment

2.3.5 The scheme and alignment options have been identified following a detailed option assessment process, which is outlined in the South Wye Transport Package Preferred Option Report Final (2014) [1]. As part of this, a long list of eight route alignment options (SC1 to SC7) were identified[2]. The indicative alignments of these routes are shown in Figure 2-2.

Figure 2-2: Long-list of Options

Source: Phase One alignment options have been re-produced for this report from Southern Link Road – South Wye Transport Package Consultation Report 3[3].

2.3.6 All eight options were appraised in alignment with DfT guidance. The appraisal assessed the full range of impacts including both positive and negative, across a consistent set of criteria;

- Economic
- Environment
- Social Impacts
- Public Accounts

2.3.7 The initial appraisal identified four options (SC1, SC3, SC4 and SC6) which did not represent feasible solutions to the transport problems and were found to result in significant environmental impacts. The removal of these options narrowed the assessment to four potentially viable routes (SC2, SC2A, SC5 and SC7).

[1] South Wye Transport Package Preferred Option Report Final (2014)
[2] Southern Link Road – South Wye Transport Package Consultation Report 3 (2014)
[3] Southern Link Road – South Wye Transport Package Consultation Report 3 (2014)

2.3.8 The remaining four route options were brought forward and considered as part of the South Wye Option Refinement Report (2019)[4] which demonstrated that all four options delivered strong economic and transport benefits, including:

- Enhanced access to the HEZ and future housing growth
- Improved journey times and reliability
- Reduced congestion

2.3.9 The assessment concluded that Option SC2 was the best overall preforming route option, delivering economic and social benefits with lower impacts on biodiversity and woodland relative to the alternative options, providing a greater balance between environmental effect and value for money.

2.3.10 Therefore, the appraisal and refinement process identified Option SC2 as the preferred route for Phase One of the Hereford Bypass and this route forms the focus of this FBC. The design for this option received planning permission in July 2016 (which remains extant) and forms the basis for this FBC. The Scheme Background section (section 1.2) provides further detail on the history of the scheme prior to the development of this FBC.

2.4 Strategic Fit

2.4.1 A key element of the Strategic Dimension is to demonstrate why the scheme is needed (Case for Change) and how it supports wider governmental and organisation objectives. The following sections of this document focus on these elements, commencing with a review of key policies and strategies at both a national and local level has been undertaken to determine the strategic fit of the Phase One scheme. This review is set out below.

National Policy

2.4.2 The alignment of the scheme with key polices and strategies at a national level is set out in Table 2-1.

Table 2-1: Scheme Alignment with National Policy

Document (year)	Alignment
The UK's Modern Industrial Strategy (2025)	The industrial strategy is a 10-year plan to increase business investment and to grow industries of the future in the UK. **Alignment:** The scheme contributes to achieving the government's aims for better modern infrastructure development, economic growth and improved connectivity. Phase One will provide a significant upgrade to Herefordshire's existing highway infrastructure across the South Wye area, providing improved connectivity to the Hereford Enterprise Zone (HEZ), aligning with the Modern Industrial Strategy which emphasises that "businesses rely on transport infrastructure to move their products and access talent".
Better Connected: A Strategy for Integrated Transport (2026)	'Better Connected' is an integrated transport strategy, published by the Department for Transport (DfT), which outlines the strategic vision and priorities for creating a safer, more reliable, accessible, and integrated transport system across England. The strategy sets out three core guiding principles: people, place and partnership. The strategy helps to ensure that transport systems are designed to meet the needs of individuals, creating better-

[4] South Wye Transport Package Options Refinement Report (2019)

Document (year)	Alignment
	connected communities and fostering collaboration between local leaders, government, and private sectors. **Alignment:** Phase One has clear alignment across the “Better Connected" guiding principles as follows: **People** - The scheme will take traffic out of predominantly residential areas in Belmont and along Holme Lacy Road, supporting measures being delivered through separate programmes such as LUF/ATE/LTP to encourage behavioural change by improving the environment for active travel in these areas. **Place** - Phase One will contribute to making the South Wye area a better place to live, work and operate a business. Improved transport links to the HEZ will make it easier for workers and goods/materials to be transported to/from there. It will also reduce traffic travelling through residential areas improving the environment for the people who live there. **Partnership** - the delivery of Phase One demonstrates that HC are listening to business and getting on with improving transport links to help attract new employers to the HEZ, whilst helping to support those who are already established in this area
Road Investment Strategy 3 (RIS3) (2026-2031)	RIS3 sets out government’s priorities for the Strategic Road Network (SRN) in England from 2026 to 2031 and places emphasis on growing the economy, improving safety for all, providing a resilient network, delivering improved environmental outcomes and improved network performance. **Alignment:** The Phase One scheme will act as an enabler for the delivery of the wider Western Bypass (including Phase Two) which will provide a viable alternative to the A49 for routeing north-south of the city and have a significant impact on the performance and resilience of the network. The ultimate aim being to de-trunk the A49 through the city and reclassify the new bypass as part of the SRN. HC’s commitment to delivering Phase One demonstrates to NH the importance that is placed on achieving the wider bypass of the city and provides the basis for closer engagement with NH throughout RIS3 for the purpose of securing future funding commitments for Phase Two.
Decarbonising Transport – A Better, Greener Britain (2021)	This strategy sets outs the DfT’s plan to net zero transport in the UK, the wider benefits it can deliver, and sets out the principles that underpin the delivery approach. **Alignment:** Phase One of the Western Bypass supports “Priority 1: Accelerating modal shift to public and active transport” by reducing congestion along the A465 Belmont Road and Holme Lacy Road, which will improve the reliability of bus services in the South Wye area. It will also increase the attractiveness of active travel schemes across the local area, as a result of reduced traffic flows.
National Planning Policy Framework (2024)	The revised NPPF sets out the government’s planning policies for England with an overarching focus on promoting sustainable development. **Alignment:** The NPPF sets out ambitious growth targets for Herefordshire, including 27,500 dwellings which can only be realised through significant investment in infrastructure improvements to the transport network across the county,

Document (year)	Alignment
	including the Western Bypass. The document also emphasises sustainable travel which the scheme will indirectly help to achieve by reducing traffic flows on key routes such as the A465 and Holme Lacy Road which will increase their attractiveness as bus/cycle routes. Phase One will support the delivery of growth in the south of the city that is contained within the current adopted Local Plan.
Cycling and Walking Investment Strategy (CWIS2) (2022)	The CWIS2 builds on the aims and targets in DfT's CWIS1 and Gear Change plan to set out the government's longer-term ambition for walking and cycling until 2040. The strategy's ambition is that "walking, wheeling and cycling are the natural choices for shorter journeys, or as part of a longer journey". The CWIS3 has recently been subject to public consultation up to December 2025 and is expected to be released and subsequently replace CWIS2 in 2026. **Alignment:** Phase One will help to reduce traffic demand along Holme Lacy Road for accessing the HEZ and therefore will provide a more appealing and safer environment for active travels users along this route. This complements the £20m funding that HC secured from the government's Levelling Up Fund which is being used to deliver Walking and Cycling improvements to Holme Lacy Road and the development of 'Quiet Routes' linking neighbourhoods to the HEZ.
National Bus Strategy – Bus Back Better (2021)	The national strategy sets out the vision and opportunity to deliver better bus services for passengers across England. **Alignment:** Phase One of the Western Bypass will support the National Bus Strategy by reducing congestion along key bus routes in South Wye, which will make bus services more reliable and attractive for accessing Hereford city centre.

Local Policy

2.4.3 The alignment of the scheme with key polices and strategies at a local level is set out in Table 2-2.

Table 2-2: Scheme Alignment with Local Policy

Document (year)	Alignment
Herefordshire Local Plan Core Strategy 2011 – 2031 (Adopted 2015)	The adopted Herefordshire Local Plan Core Strategy (2011-2031) includes Policy SS4 – Movement and Transportation, which states that Herefordshire Council will work with relevant partners to bring forward improvements to the local and strategic road network. **Alignment:** the provision of a Western Relief Road is a key part of the adopted Core Strategy - Policy SS4 'Movement and Transportation' and Phase One will deliver a key part of this infrastructure. The adopted Policy HD6 - Southern Urban Expansion (Lower Bullingham) plans for 1,000 new homes and 5Ha of employment land that will be accessed from the B4399 Rotherwas Access Road. Phase One will provide improved connectivity to this development site, increasing the attractiveness to it for developers and employers.

Document (year)	Alignment
Herefordshire Infrastructure Delivery Plan (2014)	The Infrastructure Delivery Plan (IDP) is a supporting document to the adopted Local Plan that focuses on the infrastructure capacity in Herefordshire. The IDP contains a list of the known strategic infrastructure requirements for Herefordshire which are grouped around three themes: Social Progress, Economic Prosperity and Environmental Quality. **Alignment:** The Hereford Western Bypass Phase One is identified as a key infrastructure requirement under the Economic Prosperity theme, in reference to its key role that it will play in improving access to the HEZ and supporting economic productivity.
Herefordshire Council Plan 2024 – 2028	This plan sets out the Council's priorities to ensure it delivers in providing a better and more successful Herefordshire. A number of challenges are laid out which the County currently faces and which need to be addressed in order to achieve the strategic vision of the Plan. This includes *'poor transport connectivity, which impacts on inward investment, travel and economic growth'.* **Alignment:** The scheme will go some way in helping to address this challenge by providing improved road infrastructure to the south-west of the city which will improve connectivity to the HEZ and thereby make it more attractive for inward investment and associated economic growth.
Herefordshire New Local Transport Plan (2025)	Herefordshire's new Local Transport Plan (LTP) was adopted in December 2025 and sets out the strategy and investment priorities for the county's transport network. The LTP contextualises the challenges and opportunities across the county, including the significant housing and employment growth required to support government targets and the associated transport infrastructure investment in the city and surrounding area which will be required to unlock the proposed growth. This includes delivery of the Western Bypass to provide access to new development areas and help remove through traffic from the City Centre. This in turn will help to improve air quality along key corridors and improve the journey time reliability of travel, whilst enabling the existing A49 through the city centre to be de-trunked. This will open up opportunities for other modes including dedicated facilities for people to cycle, walk and wheel in the city centre and support more reliable bus journeys as part of the wider strategy for Hereford to: – Support a thriving and prosperous economy – Enable healthy choices to improve wellbeing – Tackle climate change – Improve accessibility and inclusivity – Improve transport safety and security **Alignment:** The Phase One scheme will form a key component of the overall Western Bypass of Hereford and will be an enabler of the bypass coming forward and the overall strategy being realised. The LTP identifies further challenges across the county which have direct relevance to the Phase One element of the scheme, including the fact that some areas to the south-west of

Document (year)	Alignment
	the River Wye fall within the top 10% most deprived areas in England. As the Phase One scheme routes through this area, it will play a key role in attracting investment and improving connectivity and access to services and opportunities in this area of the county.
Herefordshire Big Economic Plan 2023 - 2050	This plan sets out the Council's strategy to support economic growth and opportunities for all residents and businesses to improve productivity and growth within the region. **Alignment:** The scheme aligns to the Council's 2050 vision by: – Providing a more reliable and resilient road infrastructure, with the new Phase One bypass expected to improve transport time reliability and capacity within the county – Improving accessibility to key employment sites, such as the HEZ, which will enable residents and businesses to access new opportunities – Increasing investment in infrastructure alongside increased inward investment within the county
Herefordshire Joint Local Health and Wellbeing Strategy (2023 -2033)	This strategy sets out how the Council and its local partners plan to address the health and wellbeing needs of its population during the period of 2023 - 2033. **Alignment:** The scheme will support the strategy's ambition of delivering 'Healthy and Sustainable Places'. By diverting traffic away from residential areas, particularly along the A465, the scheme will provide a healthier and safer environment with greater opportunity to be physically active and cleaner air for local residents.
Herefordshire Bus Service and Improvement Plan (BSIP) (2021)	The scheme will divert traffic away from key roads in South Wye such as the A465 Belmont Road and Holme Lacy Road and improve the reliability of bus services in South Wye, supporting a number of objectives outlined in Hereford's BSIP, including: – Objective 1: Establish a coherent, consistent and integrated bus network that is well understood and easy to use – by improving service reliability – Objective 4: Contribute positively towards Herefordshire's ambitions for decarbonisation and environmental improvement – improving service reliability that will encourage uptake in public transport – Objective 5: Support the wellbeing of Herefordshire residents, enabling people to access key services and live independently – improved service reliability enhances accessibility to services

Document (year)	Alignment
Herefordshire Council Delivery Plan (2025 - 2026)	Reviewed annually, the Delivery Plan outlines how the council's priorities and objectives will be achieved and delivered in the next 12 months. In the 2025 - 2026 document the four identified priority areas are People, Growth, Place and Transformation. **Alignment:** Phase One of the Western Bypass is directly referenced under the Objective: 'Expand and maintain the transport infrastructure network in a sustainable way and improve connectivity across the county'. Across 2025-26, the document states that the Council will "complete the necessary work to tender for the design and construction of Phase One of the Hereford Western Bypass", with a key milestone being the delivery of the Phase One business case (which is this document).

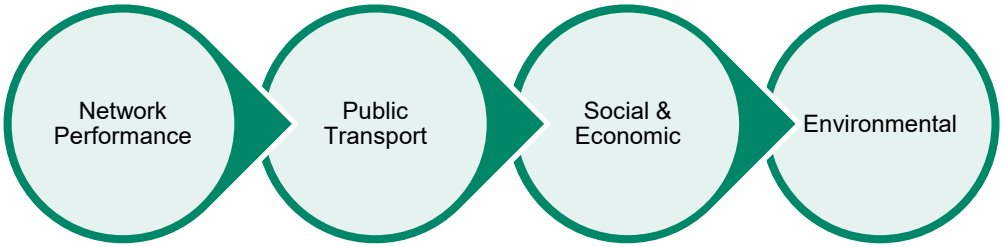
Summary of Strategic Fit

2.4.4 Phase One of the Western Bypass aligns with polices and strategies across all spatial scales and demonstrates a strong strategic fit. The scheme has been long been considered as an important component of Herefordshire's transport infrastructure which is required to be delivered to support economic growth and improve the network performance and resilience of the county. Its inclusion in the recently adopted LTP underlines the Council's commitment to delivering the scheme and its importance in realising the aims and priorities of Herefordshire's transport vision to 2041.

2.5 The Case for Change

2.5.1 Section 2.4 has identified that delivery of the Phase One scheme would align strongly with various policies and strategies at a national and local scale. These next sections are focused on demonstrating the case for change and strategic need for the scheme, based on analysis of existing problems, issues and opportunities. This analysis has been carried out across a range of themes to highlight how the delivery of the scheme would have a number of wide-ranging strategic benefits and demonstrating a strong case for investment. The key themes which have been analysed as part of this section are set out in Figure 2-3.

Figure 2-3: Case for Change – Key Themes



2.5.2 The following three sections of this document are structured around analysis against the above themes to highlight a compelling case for the scheme.

2.6 Network Performance

Existing Highway Network

2.6.1 The A49 is an important part of the SRN (managed by National Highways) that facilitates the connection between the English and Welsh borders, extending from Ross-on-Wye through Shrewsbury and into North Wales. The A49 provides an alternative north-south corridor to the motorway route via the M54, M5 and M50, therefore supporting the strategic movement of freight and long-distance traffic. Locally, the A49 runs through the centre of Hereford and plays a significant role in connecting the city's northern and southern areas. It is an urban dual carriageway and provides access across the River Wye via the (A49) Greyfriars Bridge.

2.6.2 To the south of the city centre, the A49 connects with the A465 Belmont Road, which serves the South Wye area of Hereford and provides connectivity to the Welsh borders. The A49 in South Wye also connects with Holme Lacy Road and the B4399, which both currently provide access to the HEZ

2.6.3 Extending west from Holme Lacy Road, Walnut Tree Avenue provides a connecting link between the A465 and the A49. This is an unclassified single carriageway road, which is residential in nature and has a school located along it. It also carries a weight restriction of 7.5 tonnes (except for access).

Network Resilience

2.6.4 Increased network capacity as a result of the Phase One scheme will improve network resilience south of the River Wye. The scheme will provide an alternative route between the A49 and the A465, avoiding the 'ASDA' roundabout where the A49 and A465 converge immediately south of the river. The scheme will also provide an alternative route to the HEZ from the A465, without needing to use Holme Lacy Road or other residential routes through Belmont. These alternative routing choices will relieve pressures on the existing network and ultimately improve the resilience of highway network south of the river.

2.7 Current Travel Patterns

Mode Share

2.7.1 The majority of journeys into Hereford city centre are made by car, however this varies by the origin of the trip. Figure 2-4 shows that while 55% of those that live and work in Hereford travel by using a car, 75% of trips that are taken by those living in market towns to commute into the city are by car. This increases to 90% when considering those living in rural areas (ONS Travel to Work TS061, Census 2021). Additionally, ONS data identifies that 86% of households own at least one car in Herefordshire compared to the national average of 75% (ONS Car and Van Availability, Census 2021).

Figure 2-4: Commuting Trips Split by Place

Source: Herefordshire Council – Local Transport Plan 5

2.7.2 The high dependency on trips by car in Herefordshire reflects the demographic rurality of Herefordshire. About 53% of the population in Herefordshire live in areas classed as 'rural', with the majority of these (43%) living in the most rural "village and dispersed areas" (Population around the County, Herefordshire Council). Secondly, a large proportion of residents in Herefordshire live in market towns that have limited public transport infrastructure and coverage, further increasing the dependence of journeys made by car.

2.7.3 Analysis of ONS Travel to Work (TS061) Census 2021 data undertaken in Herefordshire's Local Transport Plan 5 identifies that only 1% of commuting journeys in Herefordshire are made by bus or coach, and 4% made by wheeling and cycling which represents a low proportion of total mode share. Similarly, Census 2011 data indicates that 4% of commuting journeys were made by wheeling and cycling, while 2% were made by bus or coach (ONS Method of travel to work QS701EW, Census 2011) The lower share of journeys made by bus in 2021 may reflect the impacts of the COVID-19 pandemic on bus patronage.

2.7.4 The continued reliance on private vehicles strengthens the need for an efficient and reliable road network in Hereford. The Phase One scheme will provide additional network capacity, contributing to a better-performing network and will provide improved access to the HEZ.

2.7.5 Phase One will reduce demand on the A465 within Hereford for traffic travelling to and from the HEZ, which will free up network capacity and improve journey time reliability along an important bus route into Hereford. A more reliably performing bus network is likely to encourage modal shift and increase in bus users along this route. Traffic reductions on the A465 will also improve the environment for pedestrians and cyclists, which ties into the development of the western 'Quiet Routes' linking Belmont Road to Holme Lacy Road and to the city centre.

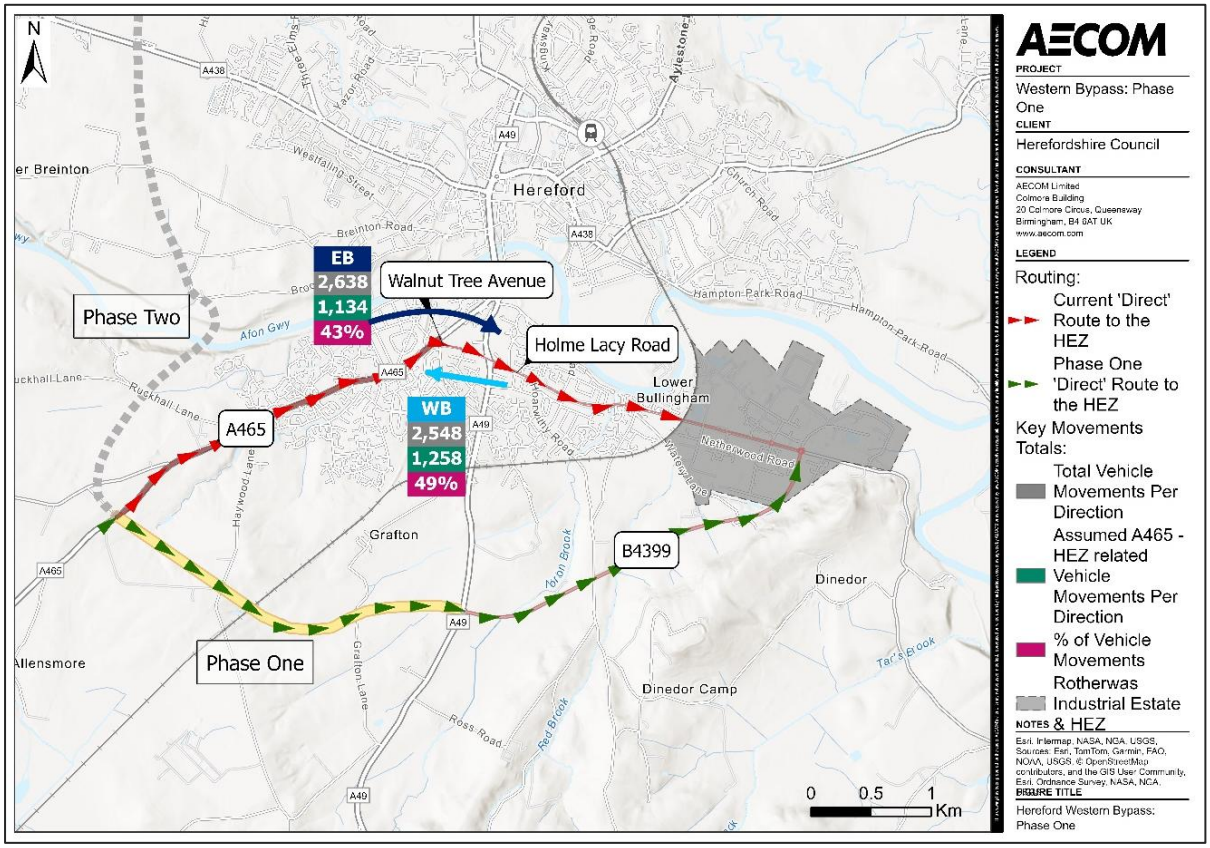
2.7.6 Similarly, a major scheme is being delivered along Holme Lacy Road aimed at transforming the road into a key 'spinal route' connecting residential areas to the HEZ and the city centre. A key focus of the scheme is improving facilities for active travel users through shared paths, raised tables and improved crossings, and with the Phase One scheme providing a viable alternative for vehicle-users to access the HEZ, this should in turn reduce vehicular demand along Holme Lacy Road and encourage more people to walk and cycle along this route. The Quiet Routes extend both to the west and east of Holme Lacy Road, helping to connect cyclists and walkers to the city centre and will encourage more people to shift to cycling and walking.

Key Movements

2.7.7 To access key trip attractors such as the HEZ, commuters from the southwest of Hereford will route along the A465 Belmont Road before turning right onto Walnut Tree Avenue, which then leads directly to Holme Lacy Road, as displayed in Figure 2-5. Automatic Number Plate Recognition (ANPR) data collected in April 2026 shows that 1,134 vehicles make this journey on an average weekday[5] which makes up 43% of all eastbound movements along Walnut Tree Avenue (2,638).

2.7.8 In the westbound direction along Walnut Tree Avenue (movements away from the HEZ), this equates to 49% of all movements out of a total of 2,548 vehicles. This highlights that almost 50% of all movements along Walnut Tree Avenue are making this specific journey highlighting the importance of this road as an access route to and from the HEZ. These key movements are shown in Figure 2-5. The Phase One scheme therefore has the potential to significantly reduce this traffic movement as it will provide an attractive, alternative route for commuters and freight traffic.

Figure 2-5: Current Key Travel Movement from Southwest Herefordshire to the HEZ



2.7.9 Walnut Tree Avenue is a weight-restricted local residential road (unclassified), with Our Lady's Catholic Primary School located half-way along the route. It is therefore not appropriate to be used as a through route for commuter traffic approaching the HEZ from the west. Similarly, the road leads on to Holme Lacy Road, which is also an unclassified residential road with significant works underway to improve its safety and appeal to active travel users, and again is unsuitable for accommodating significant commuter and industrial vehicular traffic.

2.7.10 As highlighted in Figure 2-5, the Phase One scheme will provide a more direct route from the southwest to and from the HEZ and reduce the need for commuter and freight traffic to route through residential areas to access the site. This will have a number of benefits, including:

[5] This is based on a two day average 12 hour survey period (28th - 29th April 2026 between 06:00 and 19:00)

- Improved, faster and more direct access to the HEZ for both commuter and freight traffic, which will make the site more attractive for inward investment.
- Reduced vehicular demand along the A465 Belmont Road, Walnut Tree Avenue and Holme Lacy Road, which will improve the safety of these residential routes, encouraging greater uptake of active travel
- Reduced vehicular demand along the section of the A465 Belmont Road north of the B4349 junction. This will improve journey time reliability along the route bus users and general traffic seeking to access Hereford city centre.

2.7.11 Reduced traffic routeing through in appropriate routes in rural and residential areas, improving safety and quality of life through reductions in noise and air pollution and helping to strengthen community cohesion.

Traffic Volumes

2.7.12 In April 2026, a traffic survey was undertaken to understand traffic volumes, classifications and movements, specifically in the Belmont area which is likely to be most affected by the implementation of the Phase One scheme. Automatic Traffic Counts (ATCs) were carried out for 7 days along Walnut Tree Avenue and Holme Lacy Road, with the results from this survey set out in Table 2-3 and Table 2-4 which show total vehicular counts.

2.7.13 The data is presented as a weekday average and shows the 12-hour total (06:00-19:00), AM peak (08:00-09:00) and PM (16:00-17:00) peak total vehicular traffic flows. Table 2-3 shows the Eastbound and Westbound movements along Walnut Tree Avenue. Overall, 2,638 eastbound and 2,548 westbound daily movements were recorded along Walnut Tree Avenue, and more vehicles were counted during the PM peak for both directions in comparison to the AM peak.

Table 2-3: Total Vehicular Counts (Weekday average) - Walnut Tree Avenue

Direction	12 Hour Total	AM peak	PM peak
Eastbound	2638	178	218
Westbound	2548	192	282

2.7.14 Along Holme Lacy Road, Table 2-4 shows that the overall total vehicle count is higher. The total number of daily vehicular movements is considerably larger in the westbound direction, and the PM peak period is busier than the AM peak period for traffic in both directions.

Table 2-4: Total Vehicular Counts (Weekday average) - Holme Lacy Road

Direction	12 Hour Total	AM peak	PM peak
Eastbound	4065	286	340
Westbound	6155	504	533

2.7.15 The Phase One scheme will provide an alternative route for commuter and freight traffic from the southwest accessing significant trip attractors such as the HEZ, which will reduce demand on a number of routes including the A465, Walnut Tree Avenue, and Holme Lacy Road. Likewise, the scheme will provide an alternative route for commuter and freight traffic leaving the HEZ for onward travel / distribution.

2.7.16 This is supported by evidence from the Herefordshire Strategic Transport Model (HSTM) which has shown that the introduction of Phase One alters routing choices for both local and through traffic. By providing an alternative East–West connection to the south of the urban area, traffic currently using constrained residential

corridors is redistributed to the new link; particularly from Holme Lacy Road and the A465 (Belmont Road).

2.7.17 Some longer-distance trips are also redistributed onto the Phase One scheme relieving pressure at critical junctions, such as between the A49 and A465, through Hereford city centre and along river crossings. Across the network, the redistribution is expected to lead to:

- reduced traffic volumes on sensitive urban routes;
- improved traffic speeds on key radial approaches; and
- increased resilience to incidents and peak-period congestion.

2.7.18 The HSTM has been used to extract the traffic flows in and around the Hereford city centre area and the Phase One scheme for the 2043 future year in a Do Minimum (without scheme) and Do Something (with scheme) scenario. These are set out in Table 2-5 and Table 2-6 covering the AM (08:00 – 09:00) and PM peak (16:00 – 17:00).

Table 2-5: 2043 DM vs DS Comparison (PCUs) - AM Peak

Locations	DM 2043 AM	DS 2043 AM	DS - DM	% change
Scheme Westbound	0	383	+383	100%
Scheme Eastbound	0	328	+328	100%
B4399 Westbound (East of the scheme)	344	443	+98	22%
B4399 Eastbound (East of the scheme)	384	462	+78	17%
A465 Northbound	585	493	-92	-19%
A465 Southbound	789	621	-168	-27%
Walnut Tree Avenue Westbound	376	292	-84	-29%
Walnut Tree Avenue Eastbound	164	127	-37	-29%
Holme Lacy Rd Westbound	802	758	-44	-6%
Holme Lacy Rd Eastbound	454	432	-22	-5%
A49 Ross Rd Northbound	866	834	-32	-4%
A49 Ross Rd Southbound	571	593	+22	4%

Table 2-6: 2043 DM vs DS Comparison (PCUs) - PM Peak

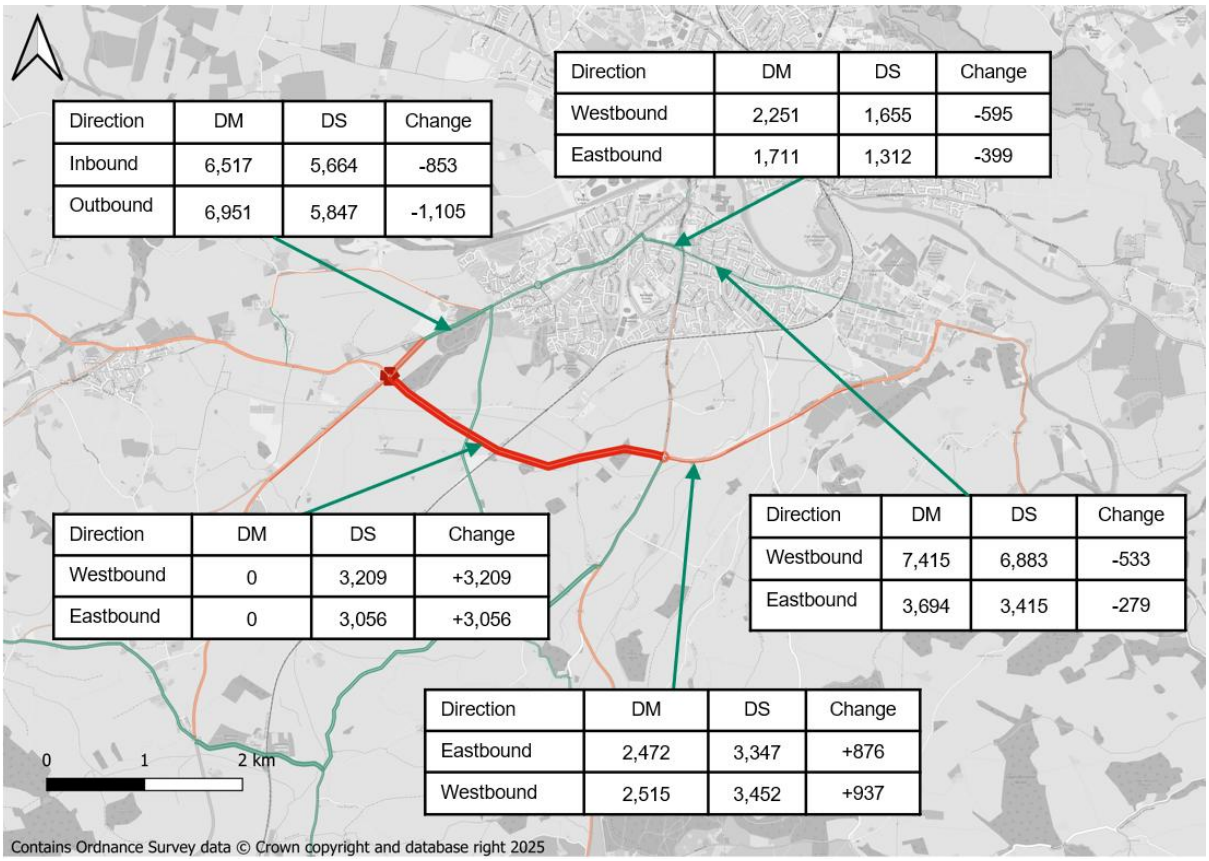
Locations	DM 2043 PM	DS 2043 PM	DS - DM	% change
Scheme Westbound	0	379	+379	100%
Scheme Eastbound	0	391	+391	100%
B4399 Westbound (East of the scheme)	398	478	+80	17%
B4399 Eastbound (East of the scheme)	297	411	+114	28%
A465 Northbound	725	622	-104	-17%
A465 Southbound	695	574	-122	-21%
Walnut Tree Avenue Westbound	180	134	-46	-34%

Walnut Tree Avenue Eastbound	179	140	-39	-28%
Holme Lacy Rd Westbound	668	627	-41	-7%
Holme Lacy Rd Eastbound	391	356	-34	-10%
A49 Ross Rd Northbound	683	686	+3	0%
A49 Ross Rd Southbound	665	682	+17	2%

2.7.19 As shown in the Tables above, reductions in vehicle flows are expected along the A465 (north of the junction with the Phase One scheme), Walnut Tree Avenue, and Holme Lacy Road in both directions and peaks when the scheme is in place compared to the DM scenario. The largest change in percentage terms is expected along Walnut Tree Avenue, with a reduction of up to 34% of flows in the 2043 DS scenario. The A465 shows the largest reduction in actual flows, with a decrease of almost 170 PCUs in the AM peak southbound direction. Limited change is expected along the A49. The Phase One scheme will connect on to the B4399 at its eastern extent, and therefore increases of between 78-114 PCUs are expected.

2.7.20 These reductions in flows along the A465, Walnut Tree Avenue and Holme Lacy Road are not just limited to the peak hours; Figure 2-6 shows the Annual Average Daily Traffic (AADT) forecasts for key links. A reduction of about 2,000 vehicles (15%) is expected along the A465, almost 1,000 vehicles reduction (25%) along Walnut Tree Avenue and a reduction of over 800 vehicles along Holme Lacy Road (7%).

Figure 2-6: 2043 AADT Flow Difference - Vehs



Freight

2.7.21 In Herefordshire, roads account for the majority of freight movements, with these movements focused upon the strategic trunk and A roads, such as the A49 and

A465. The A465 is a key corridor for strategic freight movements to and from the HEZ, especially for vehicles travelling from the southwest of Hereford.

2.7.22 The A465 links Hereford with Abergavenny and the industrial heartlands of South Wales. There is a height restriction of 4.4m where the Hereford to Newport railway crosses the road south of Pontrilas. However, this will only restrict HGVs with double deck trailers, with typical curtain sided HGV trailers being 4.2m high. HGV flows on the A465 have been obtained from the latest DfT Traffic Count[6], from 2024. This highlights that there are 429 HGVs per day on the section between the B4348 and Southholme Road roundabout, which represents 6% of the Average Annual Daily Traffic. This is higher than the typical HGV flow on a local authority A Road, which is 3.5%[7].

2.7.23 Analysis of the DfT's count data on the A465 shows that the proportion of HGV's varies throughout the day with the proportion of HGVs in the morning being up to 12% of the total traffic flow.

2.7.24 In addition to the DfT data, two-way HGV count data for the month of September 2025 has been obtained for the A465 Belmont Road from Drakewell C2 Cloud, which is a web-based traffic data and monitoring platform which Herefordshire Council has access to. The count site is situated along the A465, south of the junction with Walnut Tree Avenue and north of the Great Western Way footbridge. Overall, a total of 450 HGVs were recorded travelling along Belmont Road over a 24-hour period, showing a similar amount to the volume recorded at the DfT count site.

2.7.25 There are key industries to the southwest of Hereford City Centre that transport freight along the A465, for example the Pontrilas Sawmills. The sawmills at Pontrilas have confirmed that they generate nearly 50 HGV movements daily with three quarters of those movements headed northbound on the A465. They also believe that contractors accessing the sawmills generates another 60 to 80 HGV movements daily.

2.7.26 Based on data from the April 2026 traffic survey, the daily total and proportion of traffic that is freight traffic (HGVs) across the study area is Table 2-7 and Table 2-8. Along Walnut Tree Avenue and Holme Lacy Road, HGVs account for around 3% - 4% of the overall weekday traffic. The proportion of traffic that is HGV during the AM and PM peak periods across the study is also shown in Table 2-7 and Table 2-8.

2.7.27 Generally, HGVs make up a larger proportion of overall traffic in the AM peak as opposed to the PM peak on both Walnut Tree Avenue and Holme Lacy Road. Almost 4% of westbound traffic along Holme Lacy Road is HGVs in the AM peak. Given the residential nature of these roads, with active travel facilities and sensitive receptors (such as a primary school) located along them, this represents a high proportion of HGV flows. The Phase One scheme will offer a suitable and alternative route for HGVs requiring access to and from the HEZ, which will reduce the need for routeing through the residential areas.

2.7.28 Likely as a result of the 7.5t weight restriction (except for access) along Walnut Tree Avenue, the vast majority of freight traffic along this road comprises OGV1 vehicles (smaller 2-axle rigid trucks with a weight of at least 3.5 tonnes).

[6] https://roadtraffic.dft.gov.uk/count-points/77343
[7] https://assets.publishing.service.gov.uk/media/6a0b81d0c510c3913d8267d4/tra4205-miles-england-by-road-and-vehicle-type.ods

Table 2-7: HGV Count and proportion data (Weekday average) - Walnut Tree Avenue

	12 Hour Total (count)		12 Hour Total (%)		AM Peak %		PM peak %	
Direction	OGV 1	OGV 2	OGV 1	OGV 2	OGV 1	OGV 2	OGV 1	OGV 2
Eastbound	89	13	3.3%	0.5%	3.5%	0.8%	1.8%	0.5%
Westbound	76	11	2.9%	0.4%	3.8%	0.5%	2.0%	0.6%

Table 2-8: HGV Count and proportion data (Weekday average) - Holme Lacy Road

	12 Hour Total (count)		12 Hour Total (%)		AM Peak %		PM peak %	
Direction	OGV 1	OGV 2	OGV 1	OGV 2	OGV 1	OGV 2	OGV 1	OGV 2
Eastbound	133	30	3.3%	0.7%	3.3%	0.8%	1.5%	0.4%
Westbound	218	48	3.5%	0.8%	3.6%	1.3%	2.0%	0.7%

2.7.29 The Phase One scheme will provide a more direct route for HGVs from the southwest to access the HEZ, which will reduce freight demand along Holme Lacy Road, Walnut Tree Avenue and the A465 Belmont Road (north of the junction with the Phase One scheme).

Journey Times

2.7.30 Journey time savings arise from shorter travel distances and reduced delays at heavily trafficked junctions. The Phase One scheme will help to reduce vehicle flows across residential areas in Belmont, helping to ease congestion in these areas.

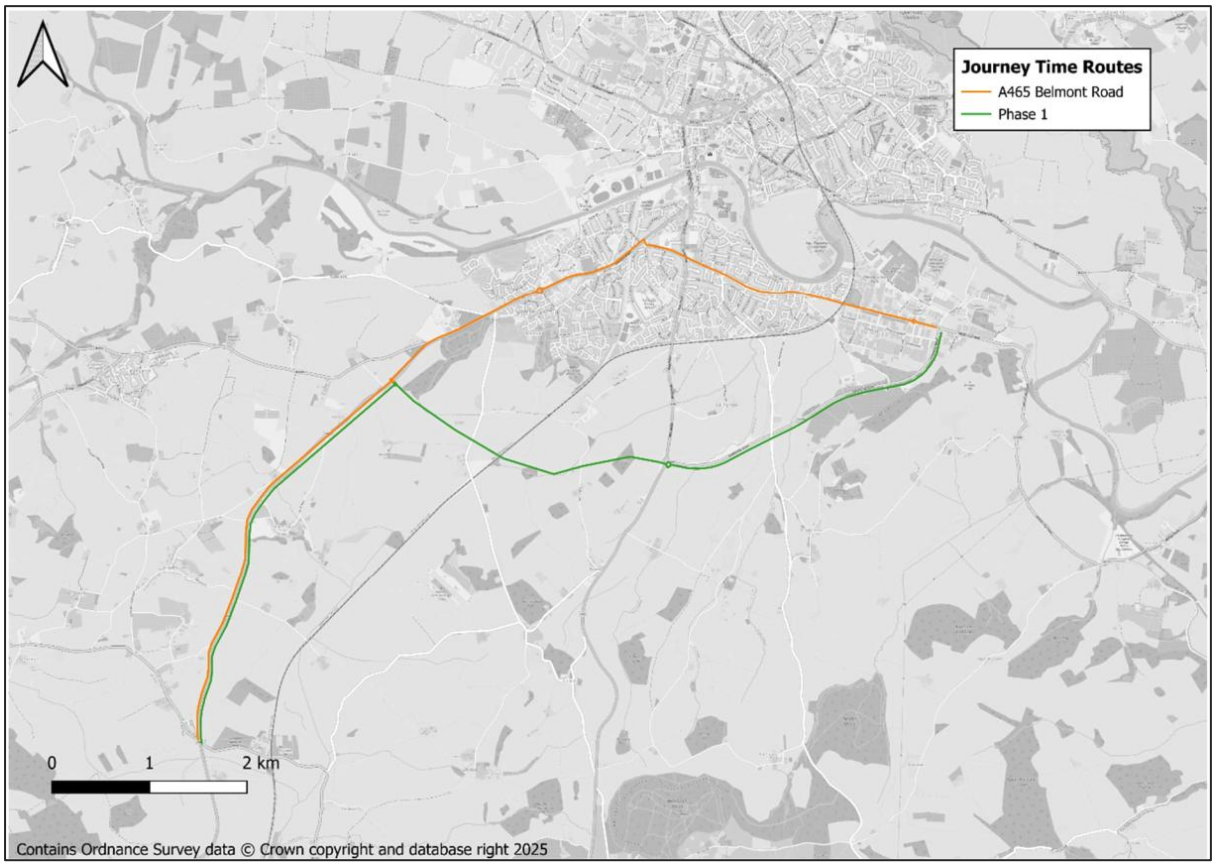
2.7.31 The design quality of Phase One will also reduce variability in journey times due to superior capacity and speed-flow characteristics. This is expected to yield measurable reductions in average journey times during peak periods.

2.7.32 As identified in Table 2-9 trips between A465 and HEZ, using Phase One and the adjoining B4399 (Gatehouse Road) receive an end-to-end journey time saving of approximately six and a half minutes in the 2043 design year. This is when compared to the existing commute route. Reduced journey times and variability in journey times is especially valuable for businesses and logistics, such as those located at the HEZ. The routes compared are visually shown in Figure 2-7.

Table 2-9: Design Year (2043) Journey Time Comparison: Phase One Scheme vs A465 Belmont Road

Direction	Route	AM Peak Time (mm:ss)	PM Peak Time (mm:ss)
Westbound	A465 Belmont Road	15:09	14:44
	Phase One Scheme	08:31	08:31
	Journey Time Savings	**-06:38**	**-06:13**
Eastbound	A465 Belmont Road	15:04	15:32
	Phase One Scheme	08:45	08:47
	Journey Time Savings	**-06:19**	**-06:45**

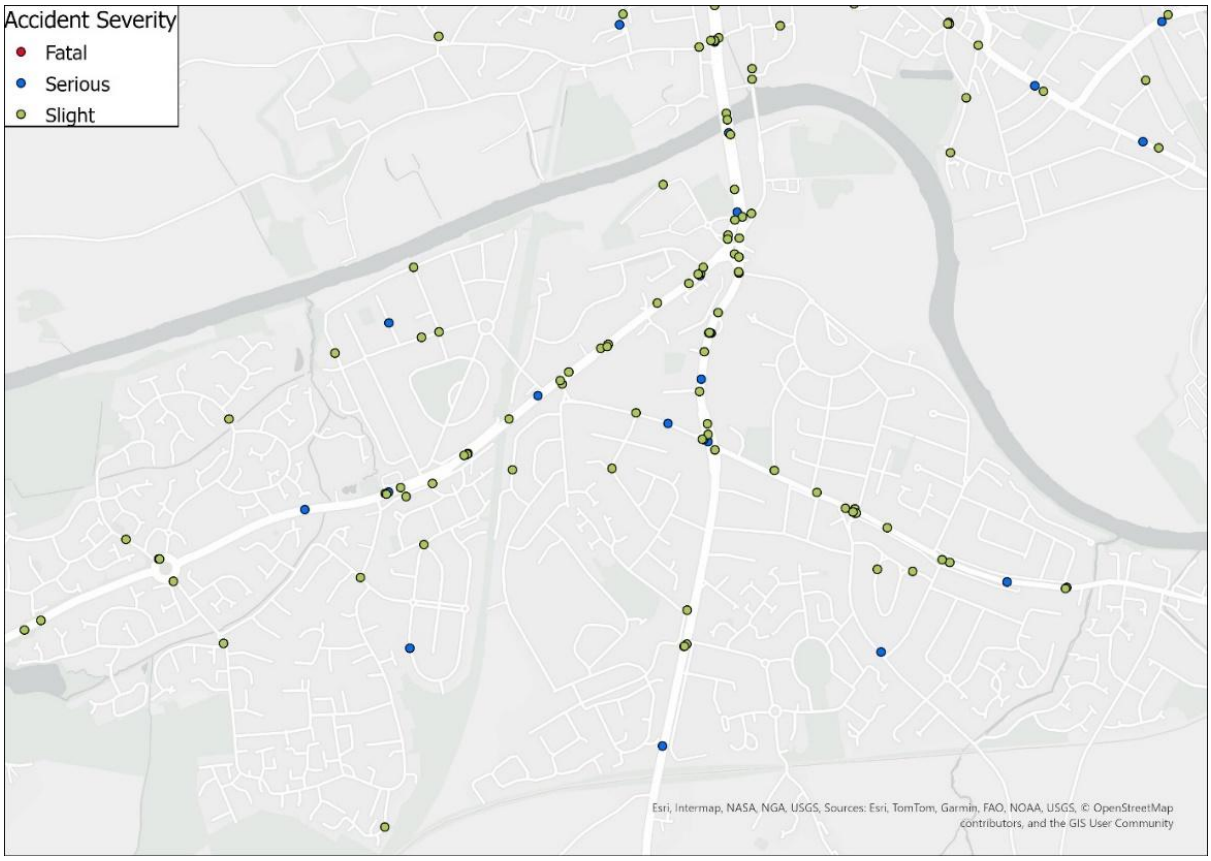
Figure 2-7: A465 and Phase One Journey Time Routes



Road Safety

2.7.33 Figure 2-8 shows collisions across Hereford that have occurred in the last five years between 2020 and 2024 (sourced from Herefordshire Council), including along Belmont Road and Holme Lacy Road and other minor roads such as Walnut Tree Avenue.

Figure 2-8: Collisions within the vicinity of the study area (2020-24)



2.7.34 There are a number of cluster locations where a particularly high number of collisions have been recorded, including at the A49/ A465 junction and the A49/ Holme Lacy Road junction. With the implementation of the Phase One scheme, this will provide a high standard of carriageway, designed to latest standards for accessing the HEZ, and will reduce demand along residential routes such as Belmont Road, Holme Lacy Road and Walnut Tree Avenue.

2.7.35 This in turn should reduce the number of collisions across the study area. This is supported by outputs from the COBA-LT assessment (described in further detail as part of the Economic Dimension). COBA-LT (Cost and Benefit to Accidents – Light Touch) is a cost-benefit analysis package available from the DfT in the form of a spreadsheet. It is used to forecast changes in the numbers of accidents and casualties associated with a change to the highway network.

2.7.36 Table 2-10 summarises the number of estimated casualties by accident type which forecasts an overall reduction of 9 collisions across a 60-year appraisal period. The reduction in slight casualties is likely due to traffic being diverted away from lower-speed roads within Hereford, while the small increase in fatal and serious casualties is likely associated with the introduction of the Phase One scheme operating at higher speeds.

2.7.37 It should be noted that the Area of Influence used to determine casualty savings in COBA-LT covers a much wider area than the area shown in Figure 2-8, and so the numbers presented in the table are not directly comparable with the map.

Table 2-10: Summary of casualty statistics

Description	Accident type	Number of accidents
Total Without Scheme casualties	Fatal	32.8
	Serious	411.0
	Slight	3460.5
Total With Scheme casualties	Fatal	33.9
	Serious	412.0
	Slight	3449.4
Total casualties saved by scheme	Fatal	-1.1
	Serious	-1.0
	Slight	11.1

2.8 Public Transport

Bus Services

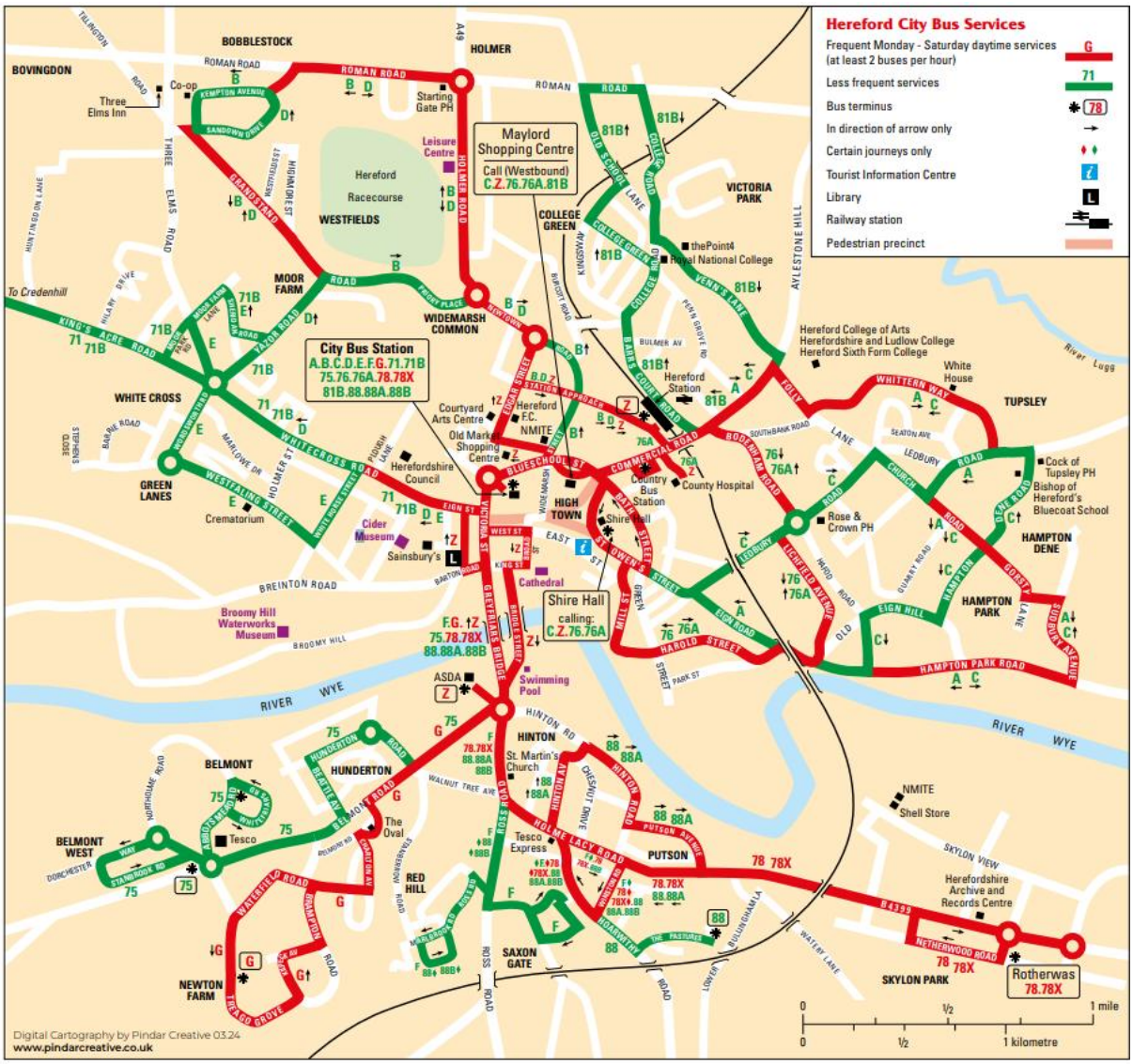
2.8.1 The Herefordshire Bus Service Improvement Plan (BSIP) 2024 identifies that only 43% of residents have access to an hourly bus service (in morning peak and early daytime off peak periods). Furthermore, this falls to only 8% of residents with access to services that run every 30 minutes.

2.8.2 Contrary to this however, buses are the most used form of public transport in Herefordshire, with 1.5 million trips made in 2023 and 2024, rising from 1.1 million in 2022 (Herefordshire Council – Local Transport Plan 5).

2.8.3 Figure 2-9 displays Hereford's bus services. The majority of bus services within Hereford are operated by various smaller, locally based operators such as Sargeants Brothers and Lugg Valley Travel and are low frequency services.

2.8.4 Some of the more frequent daytime services include the G service, which runs from Newton Farm to the City Bus Station via the A465 Belmont Road, continuing along the A49 at Belmont Junction and crossing Greyfriars Bridge. Additionally, the 78 and 78X routes link the city centre with the HEZ, travelling along the A49 south and Holme Lacy Road.

Figure 2-9: Hereford City Bus Services



Source: Hereford city bus map local services updated March 2024

2.8.5 Congestion in Hereford significantly impacts the reliability of local bus services. The Herefordshire BSIP identifies congestion within the city, particularly during peak hours, as a key factor causing unreliable journey times and weakened service frequency, which not only provides an unreliable service to passengers, but increases the operational costs, preventing further investment in additional services or journeys.

2.8.6 Indeed, as part of the BSIP, operators were asked to identify sections of road and junctions where delays to their services occurred. Figure 2-10 sets out these locations.

Figure 2-10: Pinch Point Locations in Herefordshire as Identified by Bus Operators

2.8.7 As highlighted in Figure 2-10, key congestion locations identified by bus operators include the A465 Belmont Road on the approach to the A49/A465 junction and A49 Ross Road at the junction with Holme Lacy Road. These are sections of the network which would be expected to experience a reduction in vehicular demand (and associated congestion) following implementation of the Phase One scheme which will provide alternative routeing choice for accessing the HEZ. This in turn would contribute to a more free-flowing network, reducing delays and improving reliability for operators in these locations and making the bus a more attractive mode of transport for users.

Rail Services

2.8.8 Rail connectivity across the county is limited with the closest railway station to the South Wye area being Hereford Railway Station which is located to the north of the city centre. There are no direct railway connections to the HEZ and it takes approximately a 56-minute walk from Hereford Railway Station to the employment sites.

2.8.9 Local rail connectivity is poor, and this is compounded further by there only being four railway stations located within the county. However, wider direct connections can be made to larger centres such as Cardiff, Newport, Shrewsbury and Manchester, as well as links to Birmingham and London via the Cotswold Line.

2.8.10 The feasibility of additional rail facilities across the county continues to be considered as part of the Local Transport Plan development process. A major scheme is currently underway to provide an Integrated Transport Hub at Hereford Station. Construction of the Transport Hub is currently underway, and it is expected to open in October 2026.

2.9 Socio-Economic Context

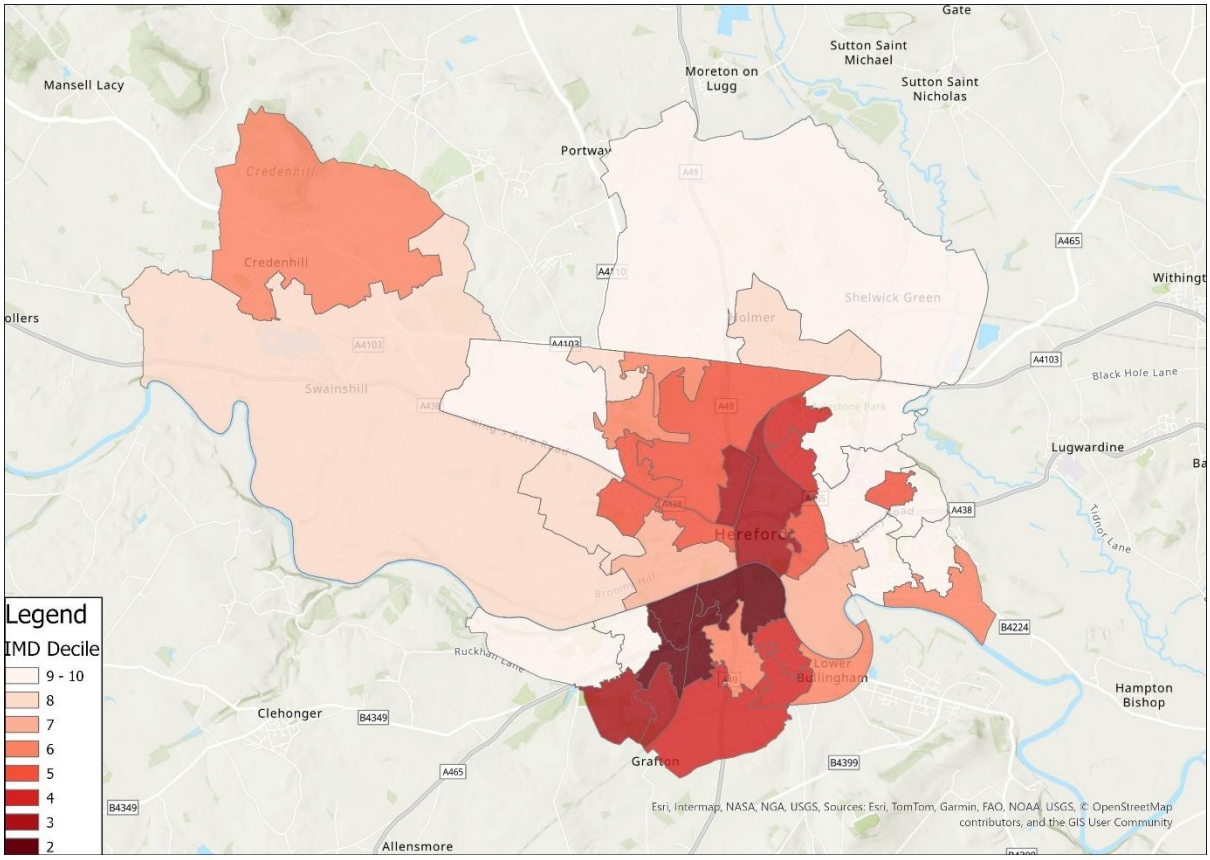
Deprivation

2.9.1 Table 2-11 presents the proportions of households deprived in 4 dimensions of deprivation: employment, education, health and disability and household crowding, based on data from the 2021 Census. Furthermore, Figure 2-11 displays the Index of Multiple Deprivation (IMD) 2025, which is a weighted combination of the seven domains: Income, employment, education, health, crime, barriers to housing and services and Living Environment. The IMD allows for the comparison of all identified UK small areas (LSOAs).

Table 2-11: Deprivation Dimensions

Deprivation	City of Hereford	Herefordshire County	England	South Wye Areas*
Household is not deprived in any dimension	47%	49%	48%	43%
Household is deprived in one dimension	35%	35%	34%	35%
Household is deprived in two dimensions	15%	13%	14%	17%
Household is deprived in three dimensions	4%	3%	4%	5%
Household is deprived in four dimensions	0%	0%	0%	0%

Figure 2-11: IMD Decile for LSOA's in Hereford



2.9.2 As shown in Table 2-11, while deprivation levels in Hereford are close to the national average, the South Wye area (which covers the location of the Phase One scheme) is considerably more deprived. Households in South Wye are 6% more deprived in one or more dimensions compared to the rest of the county, and 5% more than the national average. Furthermore, Figure 2-11 highlights that the LSOAs encompassing South Wye are the most deprived areas in Hereford. In particular, LSOAs covering Hunderton and parts of the A465 Belmont Road are in the second decile for IMD and are in the 20% most deprived areas nationally.

2.9.3 Phase One of the Western Bypass will reduce traffic flows through South Wye, in particular along the A465 Belmont Road, Walnut Tree Avenue and Holme Lacy Road having a positive local impact on the living environment. Improved access to the HEZ will also positively contribute to the Employment Dimension.

Community Cohesion

2.9.4 Issues such as rat-running, and congestion in South Wye can negatively impact upon community cohesion. As previously highlighted, the most direct and predominantly used route for commuter vehicles accessing the HEZ from the southwest is via Walnut Tree Avenue off the A465, which is an unclassified residential road with a school located along it.

2.9.5 ANPR traffic data collected during April 2026 confirms that vehicles travelling from the southwest along the A465 will route along Walnut Tree Avenue and on to Holme Lacy Road as opposed to travelling north along the A465 and south down the A49. According to the data, between 06:00 and 19:00 1,134 vehicles travel eastbound along Walnut Tree Avenue from Belmont Road to Holme Lacy Road while 1,258 vehicles travel westbound from Holme Lacy Road to Belmont Road via Walnut Tree Avenue.

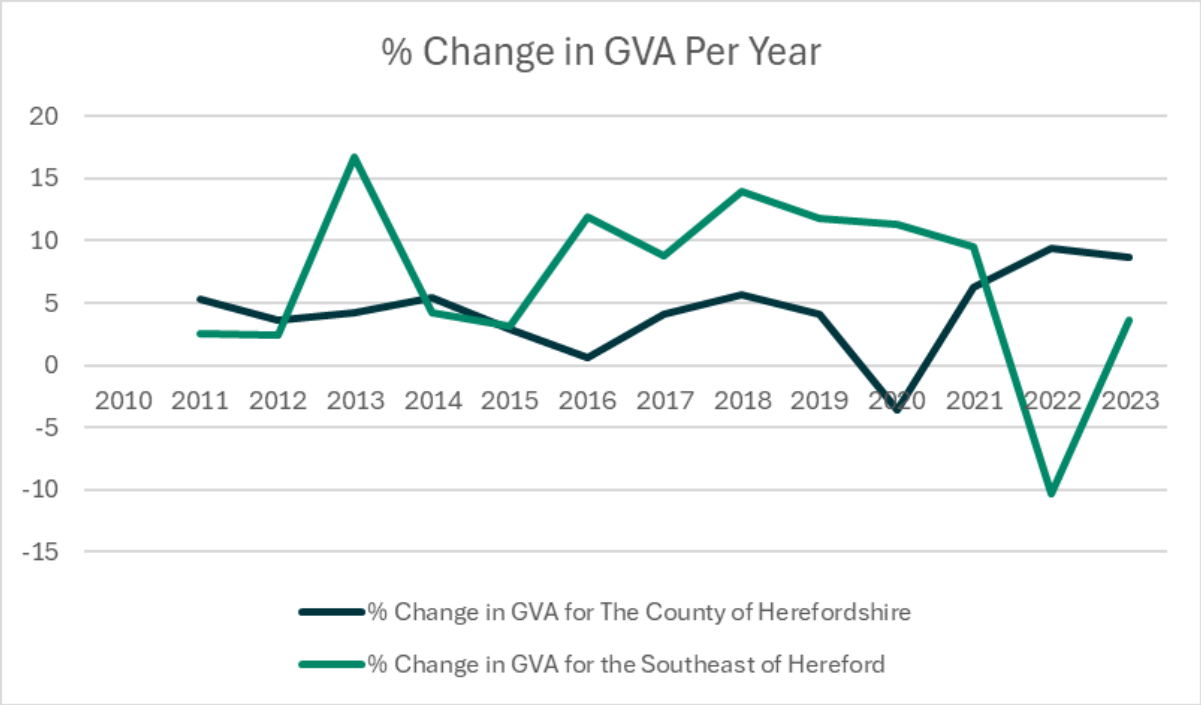
2.9.6 Using this road avoids vehicle users needing to use the congested A49/A465 junction but at the expense of community cohesion and quality of life for residents living along Walnut Tree Avenue and the adjoining Holme Lacy Road.

2.9.7 The Phase One scheme will provide a high-standard route between the A465 and A49, linking to the existing B4399, completing a route to the HEZ, that will separate vehicular traffic from residential routes which will positively impact upon community cohesion in the South Wye area.

Economic Growth

2.9.8 Figure 2-12 shows that while economic growth has recently levelled off across Herefordshire County, the Gross Value Added (GVA) in the southeast of Hereford (LSOA Herefordshire 021A), in the vicinity of the HEZ, rapidly grew between 2022 and 2023, therefore signifying economic expansion within this area.

Figure 2-12: Percentage Change in GVA



**Source: ONS-UK small area gross value added (GVA) estimates 2010 – 2023 for Lower Super Output Areas (LSOA). The number quoted is for the whole LSOA, which covers a large rural area as well as the HEZ.*

2.9.9 The Phase One scheme will provide improved connectivity to a growing area within Herefordshire, helping to further stimulate economic growth, and boosting opportunities for both businesses and people, as well as making the Rotherwas Industrial Estate, HEZ and surrounding areas more attractive for inward investment.

Key Industries

2.9.10 Table 2-12 shows the employment share by industry group by the City of Hereford, Herefordshire County, the Southeast of Hereford at Herefordshire 021A LSOA (in the vicinity of the Rotherwas Industrial Estate and HEZ) and England.

Table 2-12: Employment Share by Industry

Industry	City of Hereford	Herefordshire County	E01014026 : Herefordshire 021A	England
Agriculture, forestry and fishing	1.6%	5.4%	7.9%	0.8%
Mining and quarrying	0.1%	0.1%	0.2%	0.2%
Manufacturing	13.3%	10.9%	8.8%	7.3%
Electricity, gas, steam and air conditioning supply	0.4%	0.4%	0.3%	0.6%
Water supply; sewerage, waste management and remediation activities	0.7%	0.7%	1.1%	0.7%
Construction	8.9%	9.6%	9.4%	8.7%

Wholesale and retail trade; repair of motor vehicles and motor cycles	17.8%	15.8%	12.8%	15.0%
Transport and storage	3.0%	2.7%	2.6%	5.0%
Accommodation and food service activities	4.7%	4.5%	5.4%	4.9%
Information and communication	2.2%	2.8%	2.9%	4.7%
Financial and insurance activities	1.4%	1.5%	1.0%	3.8%
Real estate activities	1.2%	1.5%	2.0%	1.6%
Professional, scientific and technical activities	3.7%	5.2%	4.8%	6.7%
Administrative and support service activities	4.8%	5.3%	5.8%	5.3%
Public administration and defence; compulsory social security	6.3%	5.3%	6.7%	5.8%
Education	8.0%	8.6%	9.1%	9.9%
Human health and social work activities	17.9%	15.3%	14.7%	14.6%
Other	4.0%	4.4%	4.6%	4.6%

2.9.11 Manufacturing, wholesale, retail & repair, and health services are leading industries in Herefordshire County, whilst agriculture, manufacturing, construction, wholesale & retail, and health services are leading industries in the Herefordshire 021A LSOA in the southeast of Hereford.

2.9.12 Within the Enterprise Zone itself, the focus in on attracting new business from the following sectors:

- Defence and Security;
- Advanced Manufacturing and Engineering;
- Food and Drink Production; and
- Sustainable Technologies

2.9.13 A key facility on the Enterprise Zone is the Cyber Quarter which hosts the Midlands Centre for Cyber Security. This facility offers high quality research facilities through the University of Wolverhampton's Cyber Security Research Institute as well as providing office space for cyber businesses and advanced training facilities designed specifically to tackle threats in cyberspace.

2.9.14 This is a key growth sector for Hereford. The Defence and Cyber Security sectors boast exceptionally high labour productivity (GVA per employee) compared to the national average. The defence industry averages approximately £138,000 per employee, while the cyber security sector averages between £116,000 and £131,000 per worker [8].

[8] https://www.gov.uk/government/publications/cyber-security-sectoral-analysis-2025/cyber-security-sectoral-analysis-2025

2.9.15 Similarly, productivity in advanced manufacturing is high, with GVA per worker frequently exceeding £75,000. Recent companies expanding in the Enterprise Zone include TechTest Ltd, part of the HR Smith Group. Techtest specialises in the design and manufacture of search and rescue equipment, antennas and beacons for the aerospace industry. HR Smith Group invested £6m to create the new Techtest advanced manufacturing centre in Herefordshire that has created 50 jobs.

2.9.16 These examples highlight the benefits that employment in the HEZ area bring to both the local and national economy in terms of employment and GVA. Improving connectivity to the HEZ through delivering the Phase One scheme will make it a more attractive location for business to locate to and move convenient for attracting the high-quality workforce that is required.

Development Growth

2.9.17 In December 2024, the government updated the NPPF and the mandatory housing targets for the county, in which the new housing target for Herefordshire is approximately 27,500 dwellings together with 300ha of employment land over a twenty-year plan period. As a result of these changes, the council decided to cease further work on the Draft Regulation 18 Local Plan because a new spatial strategy is required to address the significant uplift in housing and employment growth.

2.9.18 The significant housing growth required across Herefordshire will likely need to include the development of larger sites. There is potential for new housing sites to be identified to the North, West and South of Hereford.

2.9.19 The new local plan is also expected to significantly increase the allocation of employment land, which will likely be in proportion to the increase in housing growth.

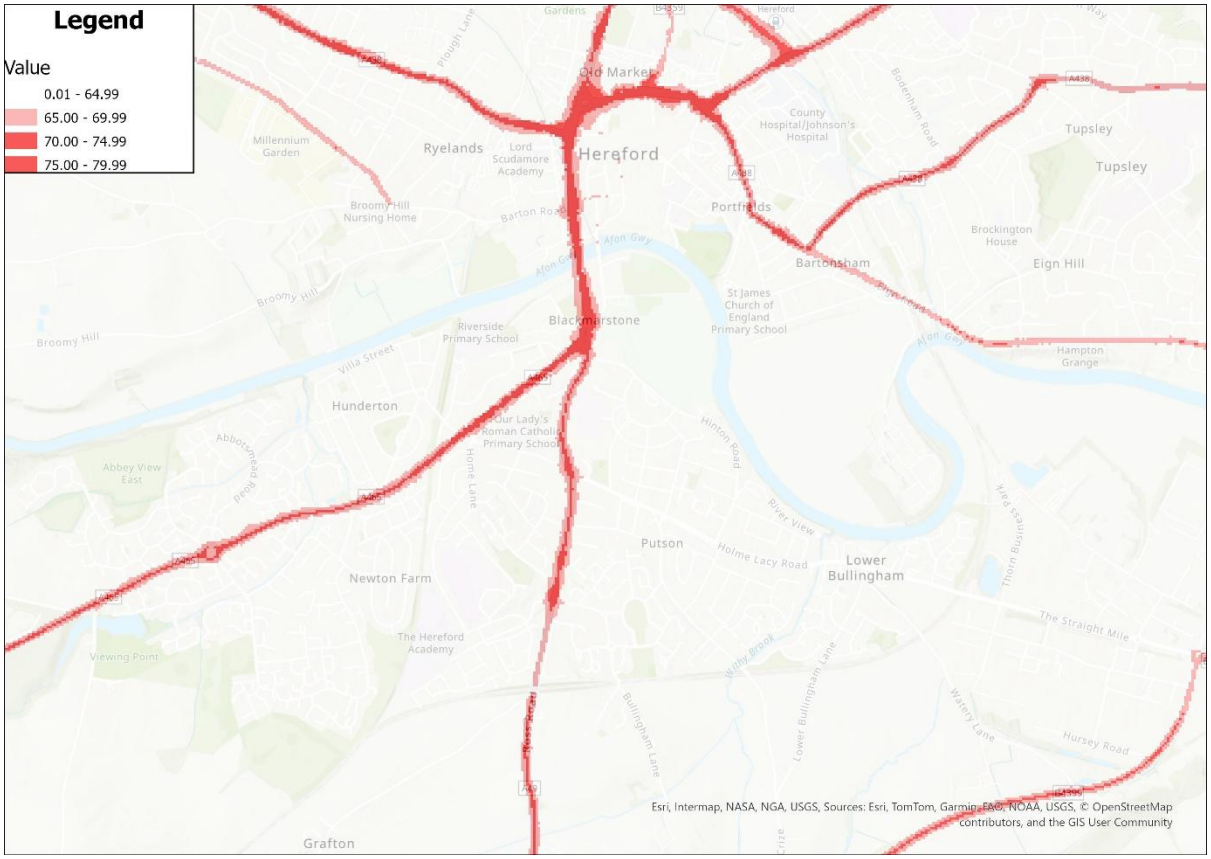
2.9.20 The Phase One scheme will provide improved access to any new housing and employment sites that are identified in the south and southwest of Hereford. This includes to the Lower Bullingham site, which is located to the east of the Phase One scheme and proposed to accommodate up to 540 homes and 5 hectares of employment as part of its first phase. As part of the wider Western Bypass, Phase One will also lay the foundation for providing the transport infrastructure required to support the mandatory housing targets for the county.

2.10 Environmental Context

Noise Pollution

2.10.1 The World Health Organisation identifies 65 Decibels (dB) as the threshold above which adverse health effects become more prevalent, including increased stress, sleep disturbance and reduced cognitive performance in children. Within Hereford, noise mapping data from the Department for Environment, Food and Rural Affairs (Defra) demonstrates that this threshold is exceeded – particularly along the A465 Belmont Road and the A49, south of River Wye, among other major connecting roads. The noise mapping from Defra is identified in Figure 2-13.

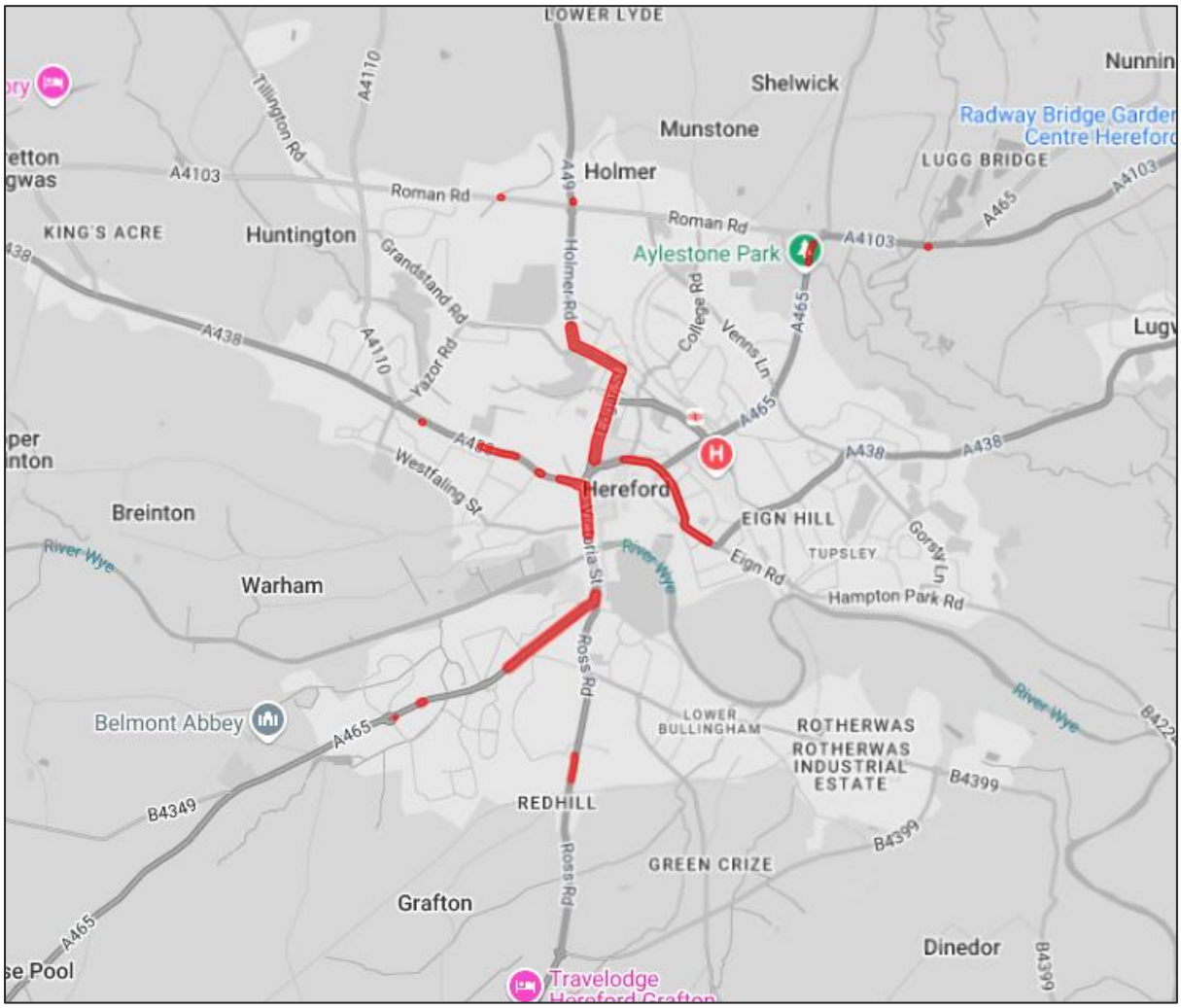
Figure 2-13: 24 hour annual average noise levels in decibels for roads greater than 65dB (Defra, 2021)



Source: Road Noise - All Metrics - England Round 4

2.10.2 Furthermore, Figure 2-14 currently demonstrates that four out of the five corridors leading into and out of Hereford have been identified as Noise Important Areas (NIAs), placing them in the noisiest 1% of roads in the UK. In particular, parts of the A465 Belmont Road have been identified as an NIA, notably the northernmost section of this route on the approach to the A49/ A465 junction.

Figure 2-14: Noise Important Areas in Hereford



Source: Extrium > England Noise and Air Quality Viewer

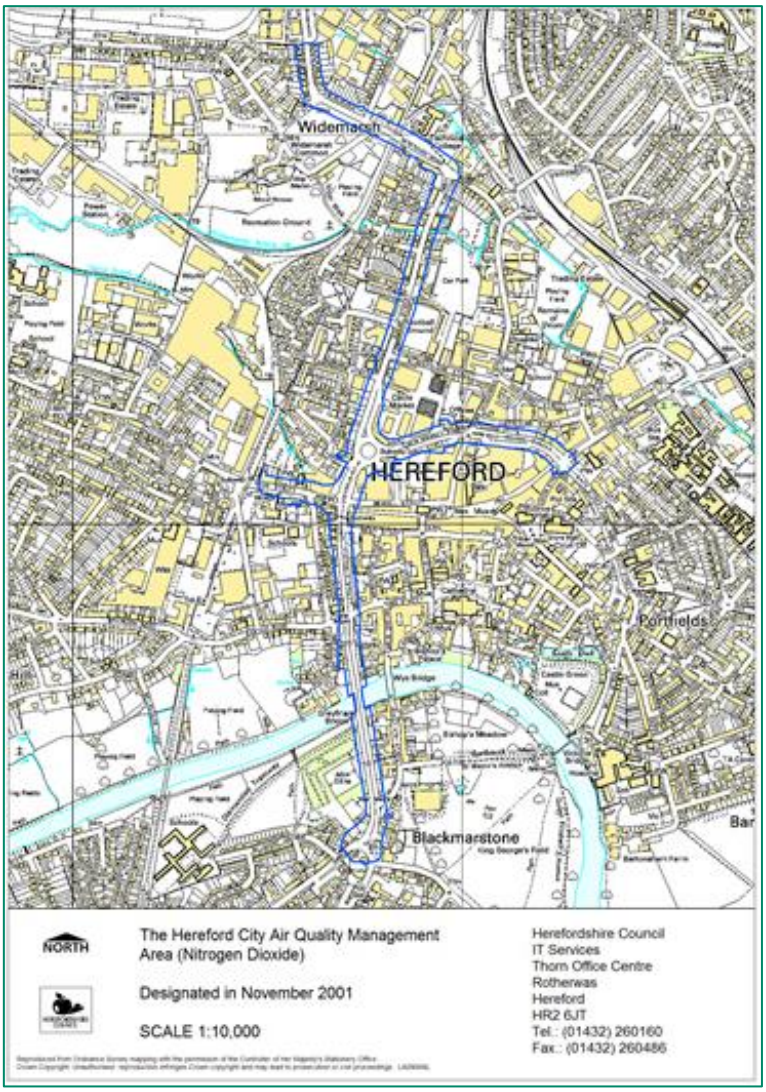
2.10.3 The Phase One scheme will redirect commuter traffic (including freight traffic which can be a significant contributor of noise) heading to the HEZ from A465 Belmont Road (north of its junction with the B4349), which will lead to a reduction in traffic and hence noise along this corridor. This would also have associated benefits to community cohesion, health and quality of life in the local area.

Air Pollution

2.10.4 Herefordshire Council continues to enjoy good air quality with no exceedances of the annual mean NO_2 objective. Herefordshire Council are in the process of revoking their Hereford AQMA as it has been compliant for over five years.

2.10.5 The Hereford Air Quality Management Area (AQMA) was declared in November 2001 due to elevated levels of nitrogen dioxide (NO_2), associated with vehicular traffic. The AQMA covers a corridor extending from Holmer Rd in the north to Belmont Rd in the south, continuing east along New Market and Blue School Street and west along Eign Street as far as Barton Yard. The extent of the Hereford AQMA is shown in Figure 2-15.

Figure 2-15: Hereford AQMA Extent



Source: AQMA Details - Defra UK Air - GOV.UK

2.10.6 NO_2 was the main pollutant of concern in Herefordshire, primarily originating from vehicle emissions. This was the key reason for designating the area an AQMA. However, in recent years the concentrations have fallen below the Air Quality Objectives, with concentrations below 10% of the objective (36 µg/m3) since 2020. Therefore, as set out in the 2026 Air Quality Annual Status Report, Herefordshire Council are beginning the process of revoking the Hereford AQMA.

2.10.7 Nonetheless, traffic levels in the city remain high and NO_2 and particulate pollution (PM_{10} and $PM_{2.5}$) can impact upon the development of the young and impact on the health of adults with respiratory illnesses. Removal of traffic that currently accesses the HEZ via the A465, A49 and Holme Lacy Road corridors as a result of the Phase One scheme, will help to further improve air quality in these residential areas.

2.11 Case for Change Summary

2.11.1 Based on a review of the key themes, the following problems and issues have been identified in relation to the study area:

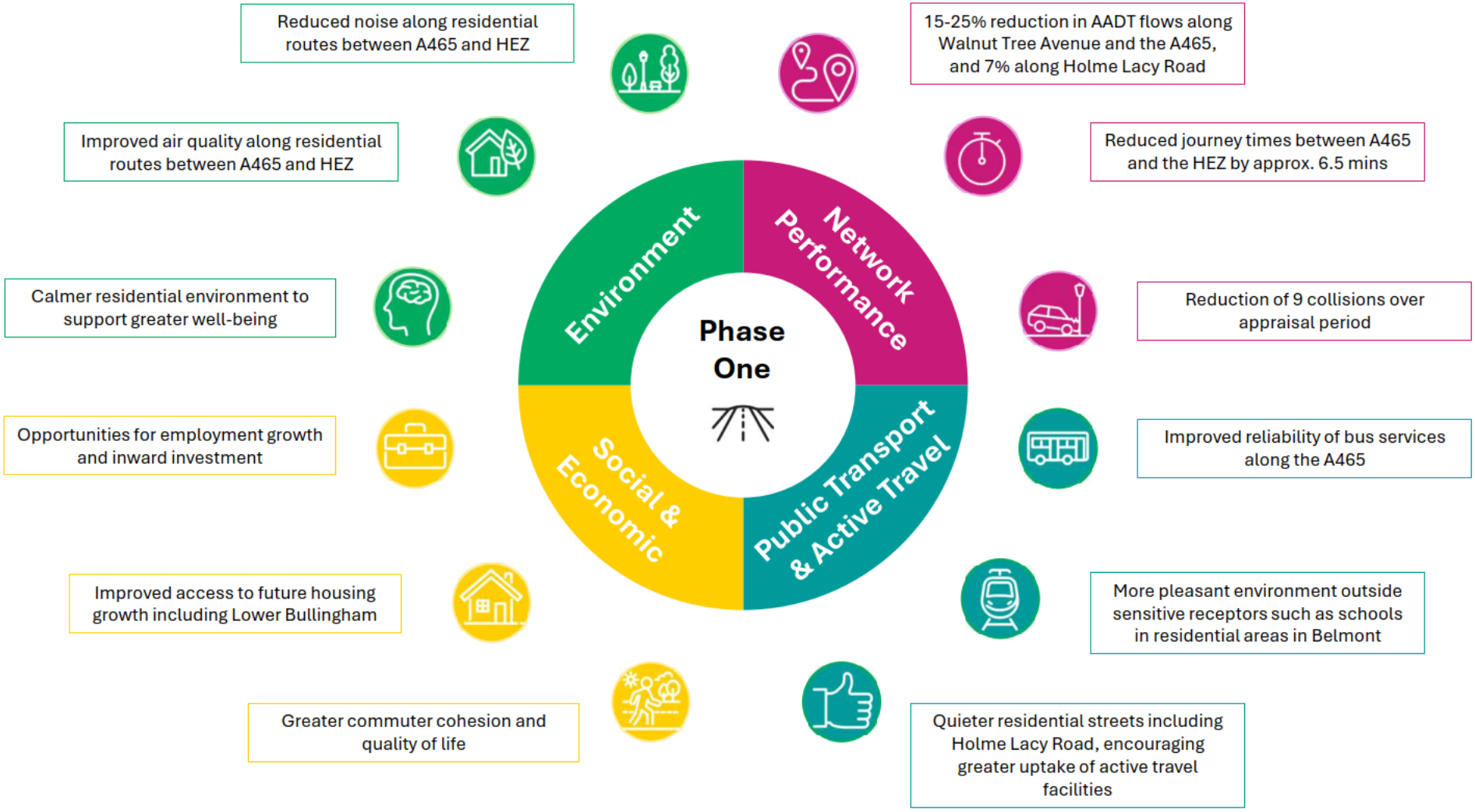
- The need for a more efficient and reliable road network, particularly in the context of high levels of car dependency across Herefordshire.

- Limited connectivity to the HEZ, resulting in traffic routeing along inappropriate rural and residential roads to access the site, a key example of this being recent ANPR data showing a key movement being the A465 – Walnut Tree Avenue – Holme Lacy Road.
- Journey time unreliability resulting in potential productivity losses and increased operating cost for commuters and HGVs travelling to the HEZ.
- Clusters of road collisions across the study area and an unattractive environment for active travel.
- Congestion leading to disruptions to the reliability of local bus services in South Wye.
- High traffic flows contributing towards social impacts such as high levels of deprivation identified within South Wye and negative impacts on community cohesion.
- Noise pollution along the A465 in South Wye.

2.11.2 These challenges reinforce the need for change and support the case for the Phase One scheme to come forward to deliver a range of environmental, safety, traffic, community and economic benefits across Hereford.

2.11.3 This Case for Change has highlighted a large number of benefits that the scheme will bring which are summarised in Figure 2-16.

Figure 2-16: Phase One Benefits Summary



2.12 Stakeholder Support

2.12.1 Alongside a clear Case for Change and need for intervention, there is also stakeholder support for the scheme.

2.12.2 Public and stakeholder engagement has taken place at various stages of the scheme development and is discussed in more detail as part of the Management Dimension.

2.12.3 In advance of submitting the planning application for Phase One in 2015, a public consultation on the South Wye Transport Package and Phase One scheme alignment was undertaken during a 6-week period between 1st July 2014 and 8th August 2014. Consultation responses indicated that traffic conditions in the South Wye area were problematic, with issues particularly concentrated along the A465 corridor and around the Belmont area. Overall, respondents expressed support for the scheme. The majority of respondents (56%) agreed with the proposal for the new link road and 95% of respondents to survey material agreed that traffic conditions in the South Wye area needed to be improved.

2.12.4 More recently, and as part of the Herefordshire LTP development process, an engagement exercise with stakeholders and the public was undertaken between March - May 2024. The key aims of the exercise was to understand participants priorities for transport, and improvements they would like to see to make travelling around the county easier, more reliable and sustainable.

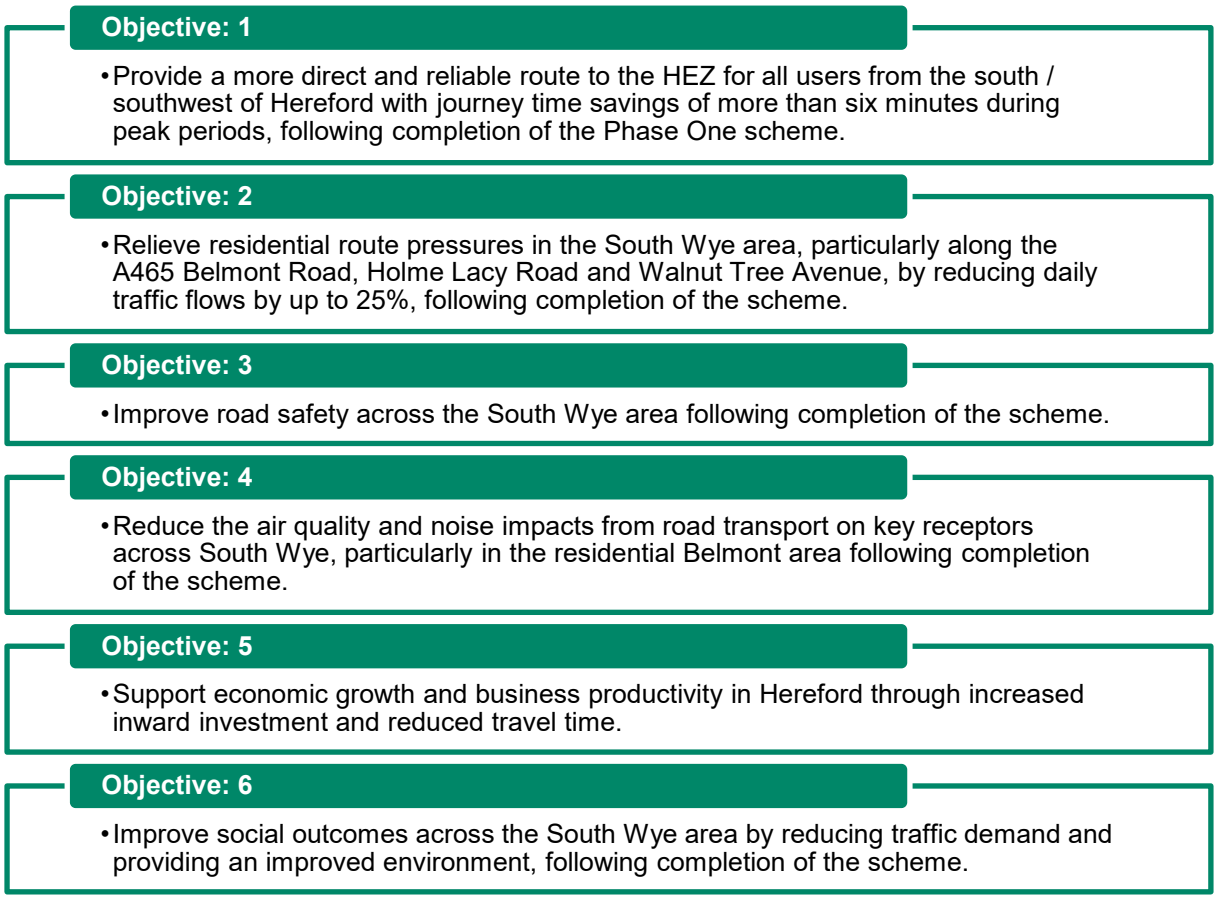
2.12.5 The online survey asked respondents to order a number of supporting actions against LTP Theme A: Supporting a thriving and prosperous economy. Of the 8 actions identified, providing a transport network with less delays came in at number 2 while building new roads such as a bypass came in at number 4. This highlighted concerns around delays and how new road infrastructure is deemed as a viable solution to resolve the issues.

2.12.6 Alongside this, Herefordshire Council has also received letters of support for the scheme from a number of key stakeholders, including National Highways and Hereford Enterprise Zone. This evidence of support is set out in Appendix B.

2.13 Scheme Objectives

2.13.1 A series of objectives were identified as part of the SWTP Option Assessment Report (OAR) (2019) for the scheme. These objectives have since been reviewed, taking into consideration the emerging priorities identified from the Case for Change analysis for the Phase One scheme. They have also been developed in such a way to ensure that they are SMART (Specific, Measurable, Achievable, Relevant and Time-Based). The updated objectives for the scheme are set out in Figure 2-17.

Figure 2-17: Scheme Objectives



2.14 Logic Map and Scheme Outcomes

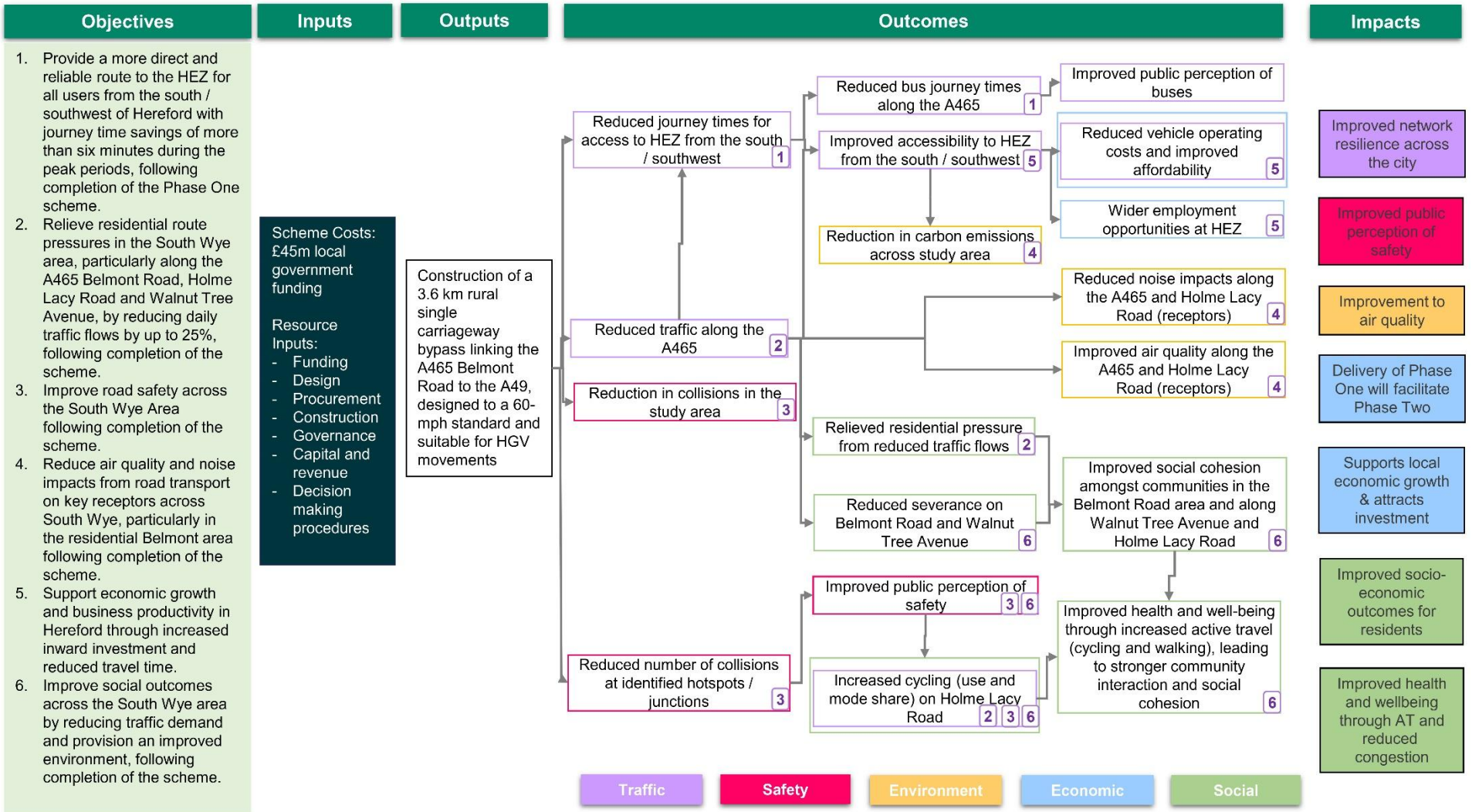
2.14.1 A Logic Map (LM) has been prepared for the scheme. This sets out the causal links between the inputs, outputs and the resulting outcomes and impacts of the scheme.

2.14.2 Outcomes are the short to medium-term effects of an intervention. Scheme outcomes will be monitored to assess whether the intervention is having the desired outcomes. This will be reviewed through the collection of primary and secondary data. The key outcomes relating to this scheme are set out in the LM (Figure 2-18).

2.14.3 The identified outcomes such as reduced journey times, improved accessibility to the HEZ and reduced traffic on sections of the network align with the transport strategy for the county as outlined in Herefordshire's LTP.

2.14.4 To assess outcomes and impacts of the scheme process, impact and value for money evaluations will be undertaken based on a combination of qualitative and quantitative data (as described in the Management Dimension).

Figure 2-18: Phase One Logic Map



2.15 Success Criteria

2.15.1 The measures of success aligned to the identified scheme objectives are set out in Table 2-13.

Table 2-13: Measures of Success

Objective	Success Criteria
1 - Provide a more direct and reliable route to the HEZ for all users from the south / southwest of Hereford with journey time savings of more than six minutes during the peak periods, following completion of the Phase One scheme.	• Delivery of a rural all-purpose single carriageway between the A465 and A49. • Reduced travel time to the HEZ from the south / southwest.
2 – Reduce traffic levels on inappropriate rural roads and in residential areas across South Wye, including the A465 Belmont Road, Holme Lacy Road and Walnut Tree Avenue, by reducing daily traffic flows by up to 25%, following completion of the scheme.	• Reduction in weekday traffic flows by up to 25% on key roads within South Wye and improved network resilience • Reduction in HEZ journeys travelling along in appropriate rural roads and residential areas including along the A465, Walnut Tree Avenue and Holme Lacy Road • Improved residential amenity by reduced traffic and opportunities for active travel • Improved bus journey time reliability along the A465.
3 - Improve road safety across the South Wye Area following completion of the scheme.	• Reduction in the number of collisions across the wider area as well as identified hotspots at the A49 / A465 Belmont Road Junction, the A465 / Walnut Tree Avenue junction and the A49 / Holme Lacy Road junction.
4 - Reduce air quality and noise impacts from road transport on key receptors across South Wye.	• Reduction in noise levels due to traffic re-routing to use the Phase One scheme. • Contribute to further local improvements in air quality through traffic re-routing to use the Phase One scheme.
5 - Support economic growth and business productivity in Hereford through increased inward investment and reduced travel time.	• Increased inward investment • Increased job hires at HEZ • Reduced journey times to and from Hereford's key employment areas • Improved journey time reliability for commuter and freight movements • Improved access to the proposed Lower Bullingham mixed use site
6 - Improve social outcomes across the South Wye area by reducing traffic demand and provision an improved environment, following completion of the scheme.	• Reduction in traffic along the A465 Belmont Road, Walnut Tree Avenue and Holme Lacy Road positively impacting on the local environment and road safety. • Reduced deprivation and improved quality of life in the Belmont area.

2.16 Constraints

2.16.1 Whilst there is a compelling case for the scheme, there are a number of constraints and dependencies which need to be accounted for as part of the delivery of the scheme.

Constraints

2.16.2 Table 2-14 sets out potential constraints associated with Phase One and how these are being navigated as part of scheme delivery.

Table 2-14: Key Constraints and Management Approach

Theme	Potential Constraint	Management of Constraint
Policy and planning constraints	Policy conflict between road-building and net zero targets	The scheme will reduce traffic flows on the A465 and Holme Lacy Road which will encourage modal shift through improved bus reliability along the A465 and a quieter, more attractive environment along Holme Lacy Road for active travel users. A Carbon Management Plan has also been developed which identifies a range of opportunities for carbon reduction as part of scheme design and construction (Appendix C).
	Lapsing of planning permission P151314/F	A nominal commencement of works took place in July 2019 comprising an approximate 150 m length section of the SLR and includes earthworks, road pavements and fencing. This nominal start of works secured the planning permission prior to it expiring, meaning that the permission remains valid.
	Planning conditions to be discharged	The pre-commencement planning conditions associated with application P151314/F were discharged, with conditions 6, 7 and 8 partially discharged to allow for the nominal commencement of works. Further detail will be required to support the full discharge of these conditions to enable works to commence on the remainder of the SLR. Further to this, other conditions previously discharged may need to be re-discharged due to the time lapse since the submission of the original discharge detail.
Environmental constraints	Environmental constraints associated with the scheme	An environmental impact assessment was carried out in support of the planning application and included mitigation measures to be incorporated into the design and construction of the Phase One scheme. Updated ecological surveys have been carried out in 2025 and 2026 and will inform protected species license applications. Mitigation method statements are being prepared to support the discharge of remaining conditions.

Theme	Potential Constraint	Management of Constraint
	European Protected Species hazel dormouse and great crested newts are confirmed to be present within the site.	European Protected Species Mitigation Licence (EPSML) applications are in the process of being drafted and will be sent to Natural England for approval. Additional EPSMLs or species licences may be required to support required mitigation works dependant on the results of on-going surveys, and will be applied for from Natural England accordingly. Mitigation works are seasonally constrained and cannot be carried out during hibernation season (approx., October-March).
	Loss of Ancient Woodland	To account for approximately 0.53 ha (1.3 acres) of habitat within Grafton Wood Ancient Semi-Natural Woodland (ASNW) is being lost as well as a small area of the front edge of Unnamed Woodland 2 ASNW, east of the railway). To help compensate for this 4.8 ha (11.86 acres) of species-rich woodland and woodland edge habitat will be created.
Physical and engineering constraints	Presence of utilities	Statutory undertaker surveys have been carried out, with four utility providers expected to be affected by the scheme, including Dwr Cymru / Welsh Water, Western Power Distribution, Cadent and BT Openreach. John Graham Construction Ltd (Graham) as the contractor for the scheme are now responsible for progressing the statutory undertaker diversions and associated liaison. Private water mains / land drains were not included within the original utilities searches and Graham / Bruton Knowles as the land agent will need to establish requirements as part of the landowner accommodation works and discussions.
	Interface with existing transport infrastructure	Significant and positive engagement has been carried out with Network Rail and National Highways in relation to obtaining relevant approvals for interfacing with their assets, including the requirement for a railway structure. Further information on the status of these approvals is set out as part of the Management Dimension.
	Unknown ground conditions	Extensive ground investigations were carried out to inform the scheme design, reducing the likelihood of unknown ground conditions being encountered.
Land and property constraints	The scheme requires acquisition of much of the land along its route, with only one parcel of land outside of the highway extents currently in HC ownership (approx. 10-15% of	The Council has been prioritising acquiring land voluntarily by negotiation through discussions with landowners (seven in total), which has been led by Bruton Knowles as the Council's property and land consultant. In December 2025, the cabinet agreed to proceed with undertaking Compulsory Purchase Orders (CPOs) in parallel with negotiations, supported by a draft Statement of Reasons.

Theme	Potential Constraint	Management of Constraint
	the total land required).	
	Rights of way and access	Accommodation works such as new field accesses are included within the supplementary planning application.
Financial and funding constraints	Budget availability to enable delivery of scheme	The Council has put in place capital funds from its own resources/borrowing to deliver the Phase One scheme, with the budget receiving S151 approval. Alternative funding sources are also being explored as detailed in the Financial Dimension. A Value Engineering (VE) exercise is underway to identify cost savings associated with scheme design and delivery.
Construction and operational constraints	Contractor availability	A Design & Build contractor has been appointed (John Graham Construction Ltd). Graham are currently working with the Council under a Pre-Construction Services Agreement (PCSA), which involves the contractor finalising the designs, resolving planning conditions, seeking temporary works planning applications and gaining approvals from third parties, along with confirming construction costs.
	Operational impacts during construction	Construction of the scheme is largely through agricultural land and therefore should cause minimal disruption. However, there will be some potential disruption along the A465, with the addition of the new roundabout. These impacts have been accounted for as part of the appraisal of scheme benefits/disbenefits in the Economic Dimension. A Construction Management Plan is also being developed which will further consider impacts
	Additional asset maintenance requirements	Maintenance of the new road will be carried out in line with the Council's Highway Maintenance Plan.
Organisational constraints	Availability of resource and staff	Key personnel for the delivery of the project are already in place and have significant experience of delivering complex highway projects. AECOM may continue to act as the Council's professional advisors through the delivery phases (to be confirmed at the time of this FBC submission).

2.17 Dependencies

2.17.1 While the Phase One scheme has planning permission, there still remain some dependencies which will need to be resolved prior to delivery, as outlined below.

Land ownership and CPO

2.17.2 The Phase One scheme requires the acquisition of much of the land along its route, with only one parcel of land currently within the council's ownership (approximately 10-15% of the total land required). The land required for the construction of the scheme is largely agricultural land and agreements are required with seven

landowners across the scheme extent. The land purchase is processing through a combination of negotiations and compulsory acquisition. A Compulsory Purchase Order (CPO) overview plan identifying and updating land boundaries in relation to the scheme has been developed.

2.17.3 The council's position is that it is aiming to secure all of the necessary rights and land ownership through negotiation. It is running the CPO process in parallel as a fallback position in case a negotiated agreement cannot be reached in all cases.

2.17.4 Relevant land negotiations and CPOs will need to be finalised before construction can commence on each parcel of land, and therefore this is a key dependency. At the time of the FBC submission in late May 2026, out of the seven affected landowners, Herefordshire Council have Heads of Terms out with two landowners.

2.17.5 Further detail on the land acquisition and CPO process being followed is set out in the Management Case.

Third Party Interfaces

2.17.6 Significant engagement with a range of third parties including National Highways, Network Rail and Natural England has been required in the progression of the Phase One scheme due to the significant interface that the scheme will have with infrastructure associated with these third parties. Whilst the scheme had previously been fully designed to a level that had received approval in principle by Network Rail and National Highways, the standards and approval processes utilised by both organisations have moved on and therefore there has been a need to resubmit the scheme for formal approval.

2.17.7 In the case of Network Rail, the scheme intersects with the Hereford – Newport Railway Line which is owned by Network Rail. The air rights above the railway line are being acquired to facilitate the construction of a bridge which will form the Phase One scheme. Herefordshire Council is working closely with Network Rail to ensure the design meets the legal requirements. Sign off and legal consent will be required before construction can commence.

2.17.8 Relating to National Highways, the scheme will connect with the A49/B4339 junction and the A49 is owned and managed by National Highways. Work is on-going to ensure the design and engineering of the scheme is in alignment with National Highways and DMRB standards. As with Network Rail, sign off and legal consent will be required before construction can commence.

2.17.9 In terms of engagement with Natural England, European Protected Species Mitigation Licence (EPSML) applications are in the process of being drafted and will be sent to Natural England for approval. This follows the detection of hazel dormouse and great crested newts at the study area. Both hazel dormouse and great crested newt are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and under the Wildlife and Countryside Act 198. Additional EPSMLs or species licences may be required dependent on the results of on-going surveys and will be applied for from Natural England accordingly. These applications and suitable mitigation works will need to be undertaken in advance of the scheme being constructed. Further detail on the third-party interfaces is set out as part of the Management Dimension.

Planning Conditions

2.17.10 The planning application for Phase One was determined at planning committee on 6th June 2016, and the planning permission decision notice was issued on 18 July 2016. The planning consent is subject to 21 conditions, which are set out as part of the decision notice for the application.

2.17.11 For a planning permission to be implemented lawfully, all necessary pre-commencement planning conditions must be discharged prior to construction work commencing on site. The pre-commencement planning conditions associated with application reference P151314/F were discharged with conditions 6, 7 and 8 being partially discharged.

2.17.12 A non-material amendment application (reference P191223/AM) relating to conditions 17 and 18of planning permission P151314/F was approved on 27 June 2019. The non-material amendment was with regards to the pre-commencement requirement for the further design details pertaining to the section of the link road at the junction of the A49 trunk road, this amendment allowed the commencement of development prior to the discharge of conditions 17 and 18.

2.17.13 A nominal commencement of works was undertaken between 1 July 2019 and 18 July 2019 comprising an approximate 150 m length section of the SLR, earthworks, road pavements and fencing. This secured the planning permission before it expired and confirmation from the planning case officer was obtained to clarify this position.

Delivery of Phase Two

2.17.14 Whilst Phase One of the Western Bypass can be delivered in its own right and will bring a range of benefits as identified in the Strategic and Economic Dimensions, the full extent of benefits which the Western Bypass could deliver will not be realised until the delivery of the Phase Two component of the wider bypass scheme.

2.18 Risks

2.18.1 A bespoke risk register has been developed detailing scheme risks (including both pre-construction and construction risks) and assigning appropriate categorisation of risk, including cost/programme impact and likelihood, and ownership. This is a ‘live’ document throughout the scheme development and delivery process to ensure a thorough and dynamic understanding of risks. Where appropriate, the approach to risk management is to eliminate the risk or prepare relevant mitigation measures to manage and reduce the impact of the risk.

2.18.2 Risks have been identified, categorised and agreed between Herefordshire Council, AECOM as the Council’s technical partner and Graham Construction as the D&B contractor. The detailed Risk Register is set out in Appendix D. Further detail on the identification and management of risk is set out in the Management Dimension.

2.19 Equality Impact Assessment

2.19.1 An Equality Impact Assessment (EqIA) is a systematic assessment of the effects of the plans or policies on groups with protected characteristics as defined by the Equality Act 2010. As a public body, Herefordshire Council has a legal duty to pay due regard to the Public Sector Equality Duty (PSED) which aims to eliminate unlawful discrimination, promote equality and cohesion between different groups and advance equality of opportunity.

2.19.2 An EqIA has been prepared to consider the potential equality impacts of the Phase One scheme. The approach followed and detailed findings from the EqIA is set out in Appendix E.

2.19.3 The EqIA has considered the potential impacts of the scheme on groups with protected characteristics, informed by a review of baseline demographic data, relevant policy context, and the identification of potential construction and operational effects. It has also considered the latest position in relation to land

requirement, including the potential need for CPO and associated impacts in an equalities context.

2.19.4 The assessment identifies a combination of temporary adverse effects during construction and longer-term beneficial effects during operation, particularly in relation to improved connectivity, reduced congestion along key links and potential economic opportunities. However, there are also localised negative impacts, including potential negative impacts associated with loss of land if compulsory purchase becomes necessary, and some redistribution of environmental impacts (e.g. noise and air quality) to new areas.

2.19.5 In relation to the PSED under Section 149 of the Equality Act 2010, this EqIA provides evidence that Herefordshire Council has had due regard to the three statutory aims:

- **Eliminating unlawful discrimination, harassment and victimisation:** The assessment has identified potential disproportionate impacts on certain groups (such as older people, children and disabled people), particularly during construction and in relation to accessibility and safety. Appropriate mitigation measures (e.g. traffic management, maintaining access, and environmental controls) have been recommended to minimise these risks.
- **Advancing equality of opportunity:** The scheme has the potential to improve access to employment, services and healthcare – particularly for rural populations and those currently affected by congestion and poor connectivity. Consideration has also been given to the differing needs of protected groups, for example those with mobility impairments or increased reliance on public transport.
- **Fostering good relations between different groups:** Based on the assessment, no overall impacts in terms of relations between different groups are expected as a result of the scheme.

2.19.6 It demonstrates that equality considerations have been embedded within the design and assessment process and that potential adverse impacts have been identified transparently alongside mitigation measures.

2. Economic Dimension

Hereford Western Bypass

Phase One - Economic Dimension

Herefordshire Council

June 2026

Delivering a better world

Quality information

Prepared by	Checked by	Verified by	Approved by
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Revision History

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Figures

Tables

1. Economic Dimension

1.1. Introduction

1.1.1. This section of the Full Business Case for Phase One of the Hereford Bypass sets of the Economic Dimension and provides an evidence-based assessment of the economic impacts of the scheme. Following this introductory section, it is structured as follows:

- The traffic modelling used to forecast impacts.
- Key assumptions and inputs used in the economic assessment.
- The scheme's monetised impacts (used to calculate the initial and the adjusted BCRs).
- Scheme costs.
- Analysis of the Monetised Costs and Benefits (AMCB).
- Distributional impact assessment.
- Sensitivity testing.
- Overall value for money and concluding statement.

1.1.2. The Economic Dimension is aligned with HM Treasury's (HMT) Green Book appraisal guidance and the Department for Transport's (DfT) Transport Analysis Guidance (TAG) requirements. It considers the economic, social, environmental and financial cost impacts, providing quantitative and qualitative assessments of the impacts of the project. This is used to determine the scheme's Value for Money (VfM) and whether the project's benefits outweigh the costs. More detailed information on the approach and results can be found in the Economic Appraisal Report (EAR) in Appendix F. The economic appraisal and assessment of the VfM of the scheme in this Economic Dimension can be broken down into the following steps:

- Estimation of the Present Value of Benefits (PVB), which gives the monetised value of the benefits of the project less any private sector contributions to project costs.
- Estimation of the Present Value of Costs (PVC) giving the net cost to the public sector of investing in the project.
- Calculation of a Benefit Cost Ratio (BCR) which gives the ratio of the PVB to the PVC and indicates a likely return to the public of investment in the scheme.
- Calculation of the Net Present Value (NPV) of the scheme (PBV – PVC).
- Sensitivity testing of both the benefits and costs to calculate the potential range of the PVB and the PVC and hence the likely range of the BCR.
- A VfM assessment, which considers both the BCR and any non-monetised or qualitatively assessed impacts, to determine whether the scheme represents a

valuable use of public resources in a way that creates and maximises public value.

1.1.3. The appraisal of the scheme considers a wide range of impacts which include journey time savings, operating costs, fuel impacts, accidents and other impacts. These are direct impacts on users of the highway network, both those on and in the vicinity of the scheme and users on the wider network. There are also indirect impacts which occur due to the scheme, which can be negative and positive impacts, and include environmental impacts such as noise, air quality and greenhouse gases amongst others.

1.1.4. These user and non-user impacts which can be appraised and monetised are referred to as Level 1 impacts in TAG. in-line with Green Book guidance, these are appraised over a 60-year period after the opening of the project and are re-based and discounted to 2023 prices and included in an initial PVB. Once the costs of the scheme are appraised and are also rebased and discounted to 2023 prices, these form the PVC.

1.1.5. Other less certain impacts can also be appraised and monetised, which include reliability benefits on the highway network and wider economic impacts. These benefits are less certain but can also be appraised and discounted in the same way as the initial benefits which form the PVB. These are referred to as Level 2 benefits. Once these have been added to the initial PVB, an adjusted PVB and BCR can be calculated which is used to inform the initial VfM category of the scheme. DfT VfM guidance gives the bandings which should be used to classify the VfM category of a project. Using the initial and adjusted BCRs, the values which correspond to the VfM categories are:

- Poor VfM – BCR between 0 and 1.
- Low VfM - BCR between 1 and 1.5.
- Medium VfM – BCR between 1.5 and 2.
- High VfM – BCR between 2 and 4.
- Very High VfM – BCR greater than 4.

1.1.6. Non-monetised impacts of the project are assessed which can include social impacts such as severance, active travel and other environmental impacts.

1.2. Transport Modelling

Herefordshire Strategic Transport Model

1.2.1. A key input to the appraisal process is the changes in travel time and demand brought about by the opening of the scheme. To estimate these changes in travel time and demand, a transport model has been used to test the scheme. This section provides a brief description of the transport model developed and used for the appraisal and provides a summary of the forecast impacts of the scheme.

1.2.2. The Herefordshire Strategic Transport Model (HSTM) was commissioned by Herefordshire Council. It consists of three interacting models: a highway assignment model, a public transport assignment model and a variable demand model.

1.2.3. The HSTM is an entirely new model covering all of Herefordshire, replacing the existing Hereford-focused Hereford Transport Model (HTM). The HSTM highway, public transport and variable demand models were developed to represent peak

hours within a typical weekday (Tuesday to Thursday) and Saturday in June 2023 from latest underlying data using the current guidance.

1.2.4. The model was developed to test the forthcoming Herefordshire Local Plan, to be suitable to assess transport network schemes and to provide an evidence base for potential business case submissions to the Department for Transport (DfT).

1.2.5. To support these applications, the HSTM has thus been designed to allow users to understand the existing provision and constraints on transport within Herefordshire, forecast the impact of proposed growth on the highway and public transport networks, and to develop and ass

1.2.6. ss policies and multi-modal transport schemes required to deliver the proposed level of growth.

1.2.7. The HSTM has been developed with reference to national guidance, particularly the DfT's Transport Analysis Guidance (TAG). It seeks to accord with this guidance where possible in all modelling principles, as well as using the guidance to obtain economic parameters (such as fuel prices and values of time).

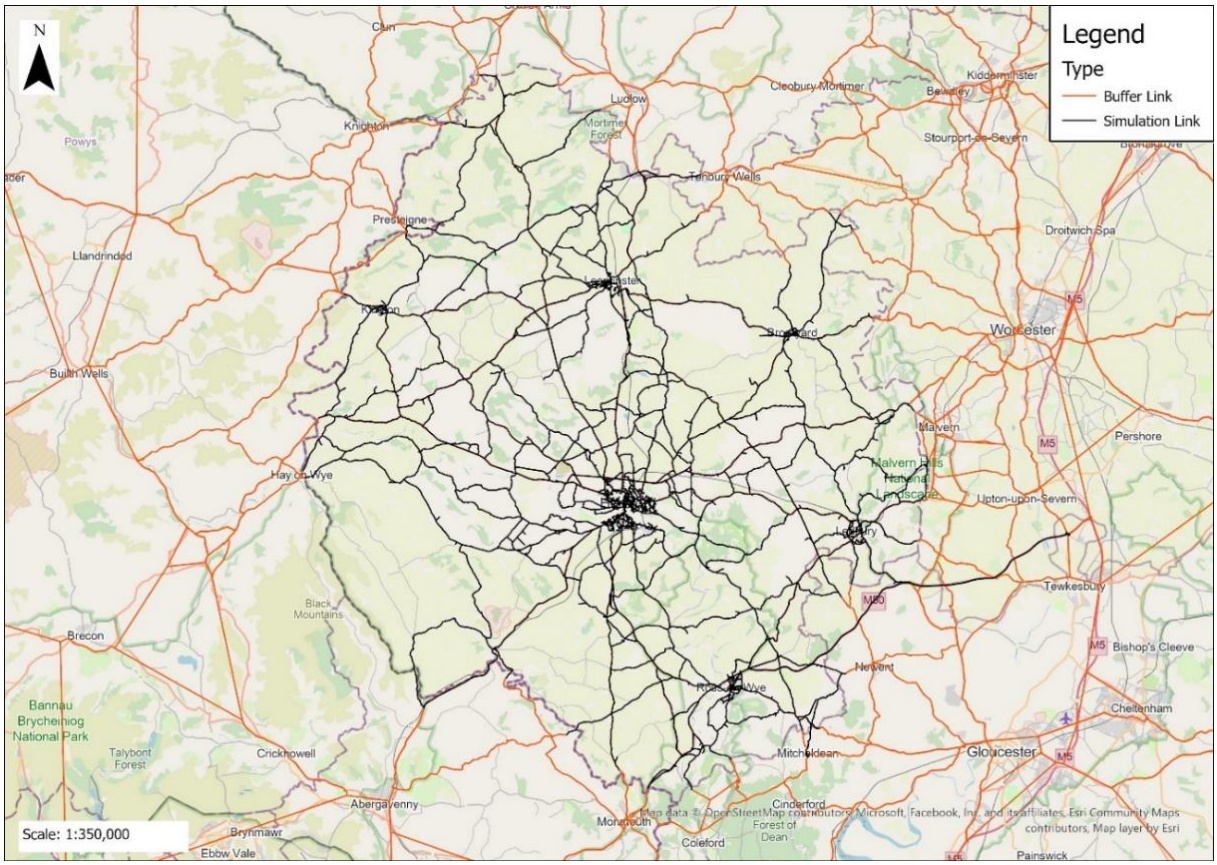
1.3. Forecast Scheme Impacts

Introduction

1.3.1. The scheme creates a new strategic link between the A49 and A465 south of Hereford, mainly improving local conditions by diverting traffic away from residential areas and in appropriate rural roads. It is the first part of a wider transport improvement package aimed at reducing congestion, improving journey time reliability, and enabling future growth within the city.

1.3.2. The scheme impacts were assessed using the HSTM aligned with current planning assumptions and DfT guidance. The modelling, which includes updated land-use data and committed schemes, confirms that the scheme continues to deliver positive traffic outcomes under current demand forecasts. For reference, the modelled highway network is shown below in Figure 1-1.

Figure 1-1: HSTM Highway Network



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1.3.3. The HSTM model includes the 2028, 2043 (design year) and 2061 future years for both Do Minimum and Do Something scenarios. The Do Minimum models contain all committed schemes for each corresponding year. Relative to the Do Minimum network, the Do Something model also includes the scheme coding, providing a new link road between the A465 and A49 to the south-west of Hereford city centre as illustrated in Figure 1-2. This new road is a 3.6km long section of rural all-purpose single carriageway, with a design speed of 60mph.

Figure 1-2: HSTM Do Minimum and Do Something Modelled Network

Traffic Flow and Speed Impacts

1.3.4. The modelling has shown that the introduction of the scheme alters routeing choices for both local and through-traffic. By providing an alternative east–west connection to the south of the urban area, traffic currently using constrained residential corridors and rural roads to the south of the city, is redistributed to the new link; particularly from Holme Lacy Road, Walnut Tree Avenue and the A465 (Belmont Road). Longer-distance trips are also redistributed onto the scheme from the B4348 to the south and the A438 North of the River Wye with a small reduction in river crossings through Hereford.

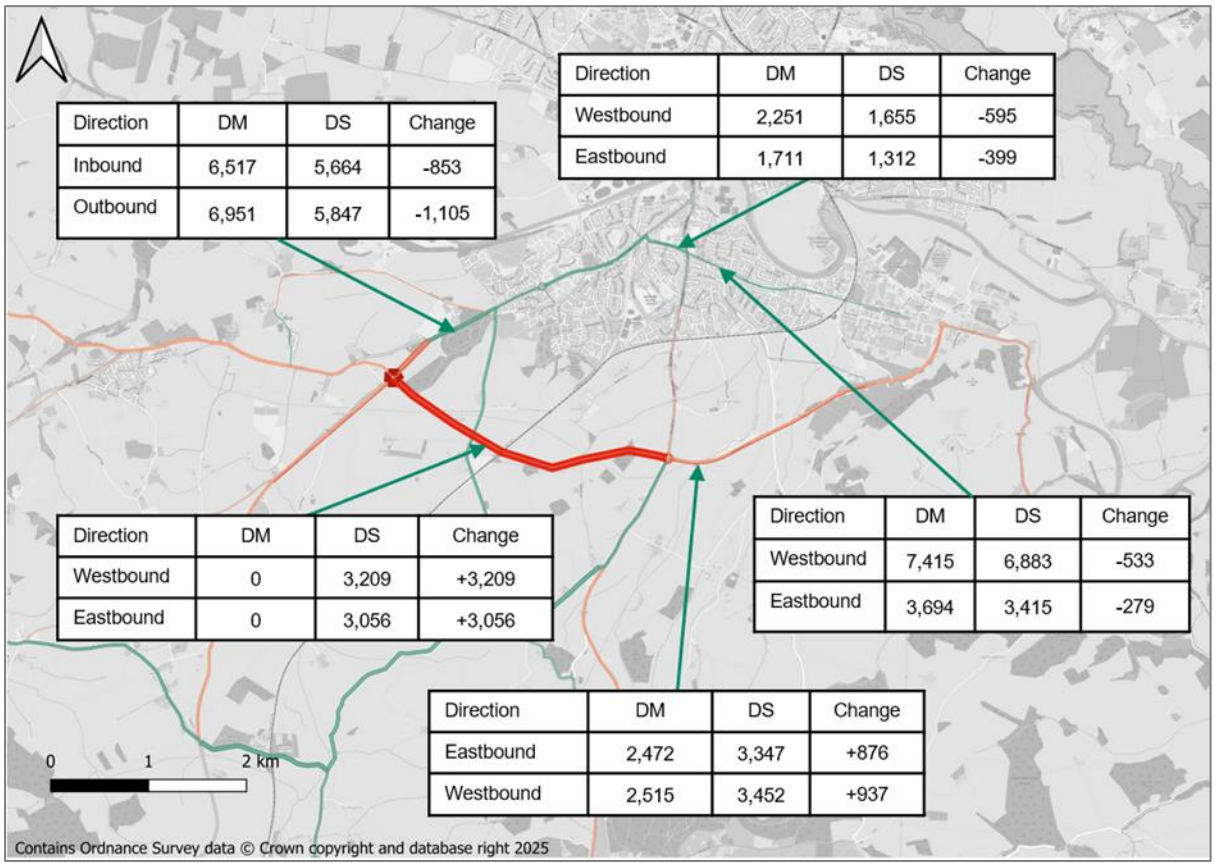
1.3.5. Across the network, the redistribution results lead to:

- reduced traffic volumes on sensitive urban and some rural routes;
- improved traffic speeds on key radial approaches; and
- increased resilience to incidents and peak-period congestion.

1.3.6. The scheme will lead to a reduction in peak-hour traffic flows on Walnut Tree Avenue, Holme Lacy Road, and the A465 in the 2043 design year. Figure 1-3 shows the Annual Average Daily Traffic (AADT) forecasts for key links. A reduction of about 2,000 vehicles (15%) is expected along the A465, almost 1,000 vehicles reduction (25%) along Walnut Tree Avenue and a reduction of over 800 vehicles along Holme Lacy Road (7%).

1.3.7. These reductions occur as traffic is diverted to the scheme rather than passing through residential areas in the South Wye area. This rerouting of traffic results in an increase in traffic flow on the B4399 of 937 vehicles (37%) westbound and 876 vehicles (35%) eastbound.

Figure 1-3: 2043 AADT Flow Difference (vehicles)



1.3.8. Network speeds on key links, as illustrated in Figure 1-4, are expected to be impacted by Phase One (A465 Belmont Road, Walnut Tree Avenue, Holme Lacy Road, and A49 Ross Road) and are shown in Table 1-1 for both the Do Minimum and Do Something scenarios in the AM and PM Peaks (improved speeds highlighted in green and similar speeds highlighted in amber and worsened speeds highlighted in red). The results show that Phase One generally improves local road speeds, with the most significant improvement observed on the A465 southbound in the AM Peak, where modelled speeds increase from 28 mph to 32 mph.

Figure 1-4: Road Sections for Speed Analysis

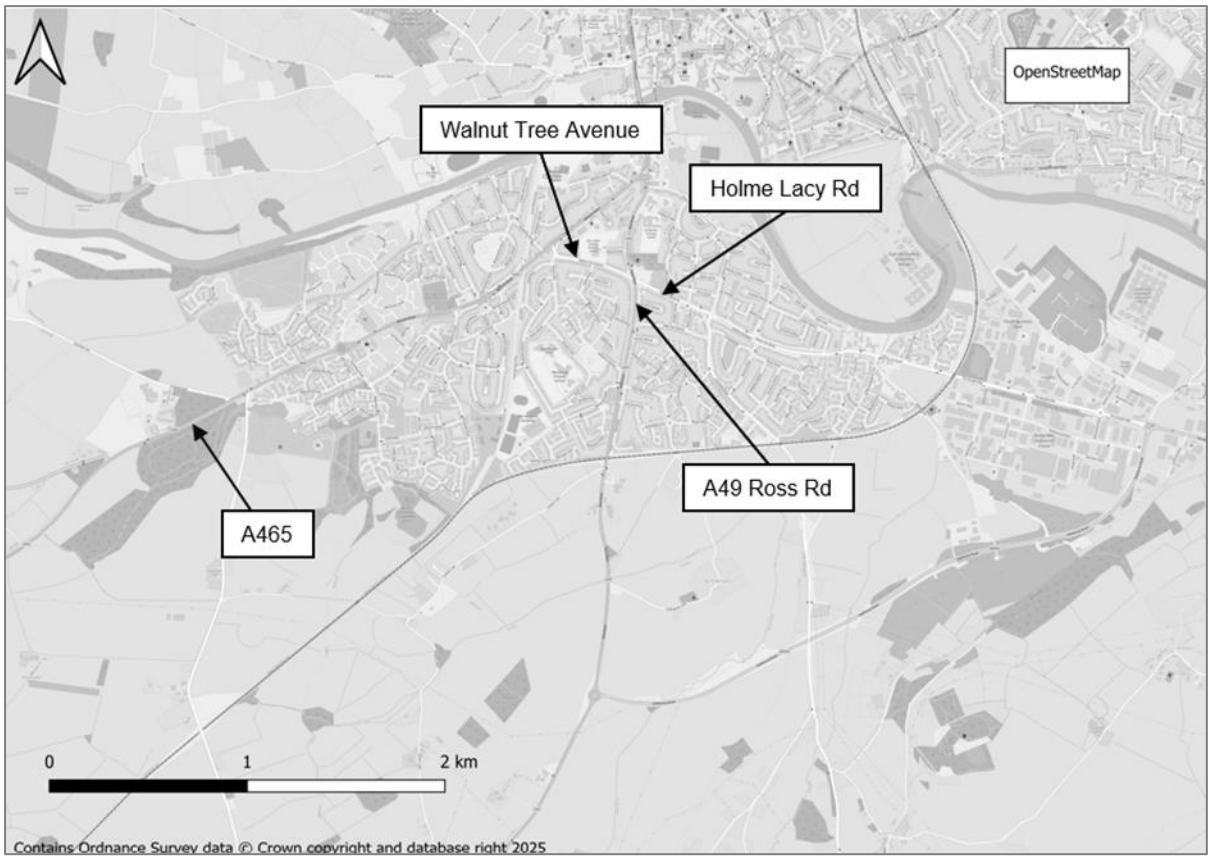


Table 1-1: Network Speed on Key Links

Link Location	2043 DM AM	2043 DS AM	2043 DM PM	2043 DS PM
A465 Northbound	31 mph	32 mph	29 mph	30 mph
A465 Southbound	28 mph	32 mph	30 mph	32 mph
Walnut Tree Avenue Westbound	18 mph	19 mph	19 mph	19 mph
Walnut Tree Avenue Eastbound	19 mph	19 mph	19 mph	19 mph
Holme Lacy Rd Westbound	20 mph	20 mph	20 mph	20 mph
Holme Lacy Rd Eastbound	16 mph	16 mph	17 mph	17 mph
A49 Ross Rd Northbound	20 mph	21 mph	23 mph	23 mph
A49 Ross Rd Southbound	23 mph	23 mph	22 mph	22 mph

Journey Time Impacts

1.3.9. Journey time savings arise from shorter travel distances and reduced delays at heavily trafficked junctions. The scheme will help to reduce vehicle flows across residential areas in Belmont, helping to ease congestion in these areas.

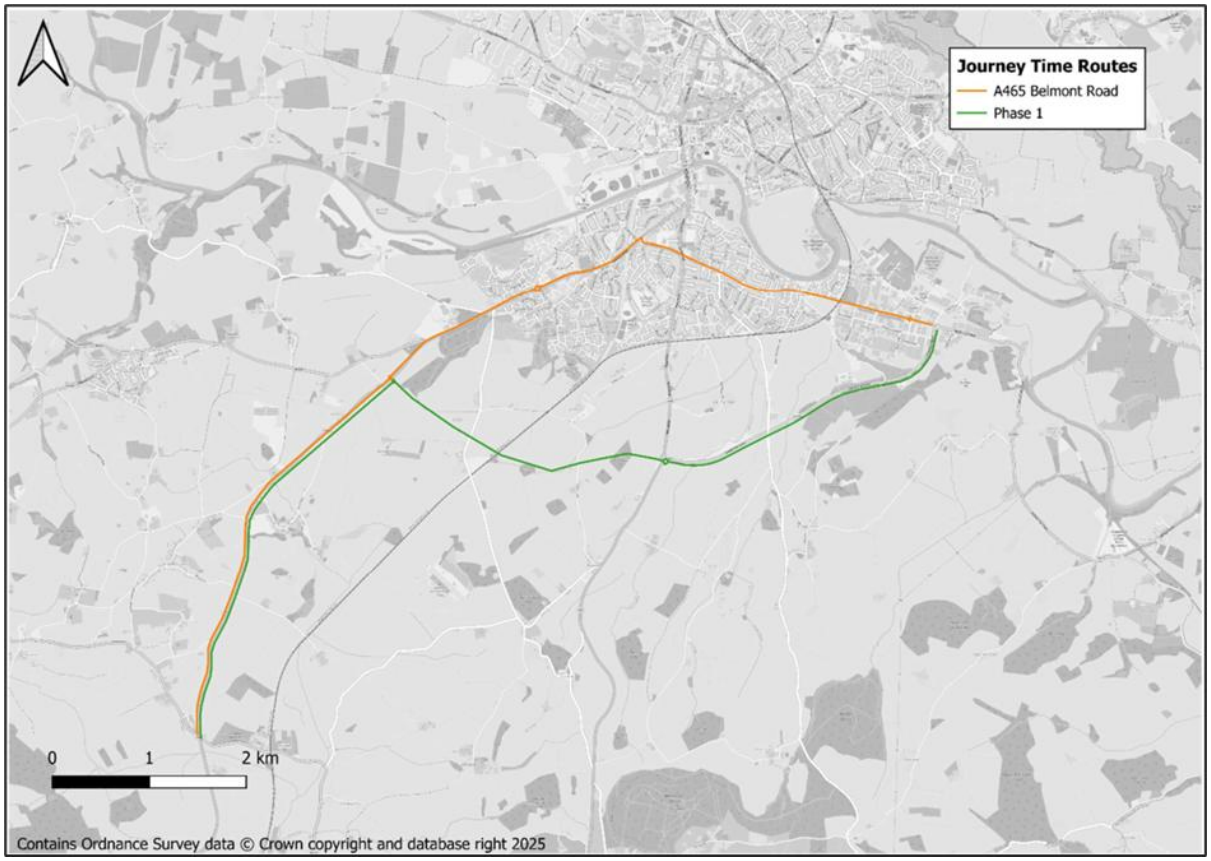
1.3.10. The design quality of the scheme will also reduce variability in journey times due to enhanced capacity and speeds. This is expected to yield measurable reductions in average journey times during peak periods, and to reduce the variability of journey times.

1.3.11. As identified in Table 1-2 trips between A465 and the Hereford Enterprise Zone (HEZ), using the scheme and the adjoining B4399 (Gatehouse Road) receive an end-to-end journey time saving of approximately six and a half minutes in the 2043 design year. This is when compared with the existing route via Belmont Road. Reduced journey times and variability in journey times is especially valuable for businesses and logistics, such as those located at the HEZ. The routes compared are visually shown in Figure 1-5.

Table 1-2: Journey Time Comparison: via the Scheme and A465 Belmont Road

Direction	Route	AM Peak Time (mm:ss)	PM Peak Time (mm:ss)
Westbound	A465 Belmont Road	15:09	14:44
	Phase One Scheme	08:31	08:31
	Journey Time Savings	**-06:38**	**-06:13**
Eastbound	A465 Belmont Road	15:04	15:32
	Phase One Scheme	08:45	08:47
	Journey Time Savings	**-06:19**	**-06:45**

Figure 1-5: A465 and Phase One Journey Time Routes



Overview of the Scheme Impacts

1.3.12. The forecasts demonstrate that the scheme delivers significant reductions in traffic volumes on congested residential and urban routes, particularly the A465, Walnut Tree Avenue, and Holme Lacy Road. The most notable change is an AADT reduction of ~1,100 vehicles on the A465 southbound, indicating that the scheme effectively diverts traffic away from sensitive urban corridors and reduces pressure

on critical junctions and river crossings. The scheme also diverts traffic from the B4348 to the south onto quicker and more direct routes.

1.3.13. The introduction of the scheme, a new east–west link south of the urban area, results in substantial journey time benefits, with savings of up to six and a half minutes during peak periods on key corridors, such as the route between the A465 and the Hereford Enterprise Zone.

1.3.14. Forecasts for 2043 indicate that the scheme will carry ~3,200 vehicles (AADT), with corresponding decreases in traffic on urban and rural routes. These reductions also provide opportunities to improve conditions for walking and cycling, particularly where complementary public realm and active travel measures are implemented, such as on Holme Lacy Road.

1.4. Key Assumptions and Approach

Introduction

1.4.1. This chapter summarises appraisal approach. in-line with TAG appraisal guidance, the assessment considered economic, social, environmental and fiscal impacts which have been assessed using quantitative or qualitative methods. Where it is possible to monetise impacts, these were consolidated to calculate a scheme BCR. However, the full range of monetised and non-monetised impacts are considered when assessing the overall VfM of the proposed scheme.

Key Impacts Considered

1.4.2. Table 1-3 provides a summary of the impacts evaluated and documented in this FBC. It includes a brief overview of the methodology applied, along with any relevant software used.

Table 1-3: Summary of Appraisal Methodologies

Impact being appraised	Description of methodology	Software used
Travel time benefits	• Economic benefits of the scheme come from savings in travel times to both business and consumer users. • Business users include car and LGV occupants travelling on employers' business along with HGV drivers. Consumer users (including commuters) include any non-business travellers in cars and LGVs. • Transport Economic Efficiency (TEE) benefits are derived from forecast travel time changes during construction and normal operation after scheme opening (compared with the 'Without Scheme' scenario). • Sensitivity testing was undertaken to reflect uncertainty in the model inputs around growth. in-line with recent guidance in TAG, selected Common	Appraisal conducted using TUBA software (v1.10.01) and the May 2026 data book assumption s

	Analytical Scenarios were used for sensitivity testing.	
Vehicle operating cost benefits	• Vehicle operating costs (VOC) estimated for all users. These occur due to changes associated with fuel and non-fuel costs. Non-fuel costs include items such as oil, tyres, vehicle maintenance and depreciation. • Factors affecting the VOCs are the speed and distances and how those change when the scheme opens.	Appraisal conducted using TUBA and the May 2026 data book
Accident benefits	• The safety impacts of the scheme were assessed and monetised. Changes in the number of accidents due to the scheme were estimated using standard accident rates by road type. • CoBA-LT compares accidents by severity (slight, serious and fatality) across the modelled network in the both the 'Without Scheme' and 'With Scheme' forecasts. • Accident benefits were monetised and form part of the initial BCR.	Assessed using DfT CoBA-LT software (version v2.10 released in April 2026)
Indirect tax	• Changes in indirect tax were calculated through a conventional transport user benefit appraisal. These impacts were estimated using the TUBA software and using the same demand (trips), distance and travel time skims as the user travel time benefits	Appraisal conducted using TUBA and the May 2026 data book
Greenhouse gases	• An assessment of Greenhouse Gas (GHG) emissions and a monetisation of this impact was undertaken. • Post-opening user emissions were estimated the DfT Vehicle Emissions Carbon Tool (VECAT). • GHG emissions during construction are currently being estimated.	Assessed using DfT VECAT (v1.01)
Construction impacts	• The costs to existing transport users due to disruption experienced during the construction stage. • Construction impacts are monetised and form part of the initial BCR.	Appraisal conducted using a bespoke spreadsheet and the May 2026 data book

Noise and air quality impacts	• Assessed in accordance with TAG using traffic data from the HSTM highway model.	TAG worksheets
Journey time reliability	• The change in journey time reliability was estimated based on the guidance contained within TAG Unit A1.3, Section 6.3 for urban roads. • Approach considered the ratio of assigned time within the highway model to the free-flow time as a measure of the standard deviation in journey times. • This was monetised using the same assumptions as adopted within the TUBA assessment of the scheme impacts.	Bespoke spreadsheet model
Wider economic impacts	• Wider impacts from generalised cost changes used the same modelled time and distance outputs as was used for the TUBA assessment. • To assess wider economic impacts, the DfT's WITA software or guidance in TAG Unit A2.1 and associated Unit A2.2 were used to calculate the impacts.	Assessed using DfT WITA v2.3 / TAG Unit A2.1

Transport model inputs to appraisal

1.4.3. The HSTM is a SATURN / EMME transport model which was developed to be able to test the impacts of the scheme. The highway assignment model was developed in SATURN software which is an industry standard software package. SATURN version 11.5.05N was used. Full details of the development, calibration and validation of the model are available in the "HSTM Local Model Validation Report".

1.4.4. The HSTM highway assignment model has a base year of 2023 and for the assessment of this scheme, three forecast years (2028, 2043, 2061). There are five modelled highway user classes:

- car commute;
- car business;
- car other;
- light goods vehicles (LGV); and
- heavy goods vehicles (HGV).

1.4.5. TUBA provides an assessment of benefits by journey purpose, split by vehicle type. The number and flow of vehicle types were taken from the HSTM highway model output. The TUBA assessment of the scheme was undertaken for 7 user classes, comprising:

- car business;
- car commute;
- car other;
- LGV (freight);
- LGV (non-freight);
- HGV (OGV1); and
- HGV (OGV2.

1.4.6. The TUBA appraisal requires trip, travel time and distance matrices to be defined for each user class, time-period and modelled year. Matrices were defined for both the 'Without Scheme' and the 'With Scheme' forecasts. These matrices were created by 'skimming' data from the forecast year assignments using the HSTM highway assignment model.

Appraisal Period and Assessment Years

1.4.7. In-line with TAG Unit A1.1, the economic assessment was conducted over a 60-year appraisal period after the opening year of the project. The opening year is assumed to be 2028; therefore, the appraisal period extends to the year 2087.

1.4.8. To assess the economic benefits arising over the life cycle of the scheme, three forecast years were developed in the traffic model. These three years are used to interpolate and extrapolate impacts over the 60-year appraisal period. For the scheme, the three forecast years are as follows:

- 2028 (scheme opening year);
- 2043 (design year); and
- 2061 (final modelled year).

1.4.9. The impacts of the scheme are based on the difference between the 'Without Scheme' and 'With Scheme' forecasts.

1.4.10. The benefits arising due to these changes are interpolated between each of the forecast years and extrapolated from the final modelled year of 2061 to cover the whole appraisal period. The extrapolation of the scheme benefits up to the year 2087 assumes zero growth in the magnitude of impacts after the final modelled year (2061), although growth is applied to the value of impacts, for example, to reflect forecast changes in values of time, as set out in DfT's data book, and impacts are discounted as explained below.

Annualisation Factors

1.4.11. The highway model contained within HSTM represents a morning (AM) peak hour, an average interpeak (IP) hour and an evening (PM) peak hour, as well as the busiest hours on a Saturday. Benefits generated in the modelled hours were annualised using annualisation factors, defined as the number of times each modelled hour occurs over a full year. These factors were based on analysis of traffic data. For the off-peak, demand was based on factoring the interpeak demand to those off-peak hours with similar flows and traffic conditions to the interpeak and which would be expected to have similar user impacts. Weekend hours are represented by the Saturday model data. The factors are summarised in Table 1-4.

Table 1-4: Annualisation Factors

Modelled hour	Period	Modelled hour to be factored to:	Factor
08:00-09:00 Weekday	AM	07:00 to 09:00	554
Average interpeak hour Weekday	IP	09:00 to 15:00	1,793
17:00-18:00 Weekday	PM	15:00 to 18:00	718
Average interpeak hour	Off-peak	Off-Peak	1016
1100-1200 Saturday	Saturday	Weekend & Bank Holidays	735

Price Base and Discounting

1.4.12. As described in the Green Book, there is significant evidence to suggest that costs and benefits which accrue now are considered to be worth more than those which accrue in the future (time preference).

1.4.13. In-line with TAG, and unless otherwise stated, all monetised impacts and scheme costs in the Economic Dimension are presented in discounted 2023 market prices.

1.4.14. A discount rate of 3.5% per year for the first 30 years after the current year (2026) and 3.0% per year for the remainder of the appraisal period was applied. project costs as well as benefits are treated in the same way.

1.4.15. User benefits in TUBA are already presented in market prices. scheme costs, as set out in the Financial Dimension, are in factor costs, and so are converted to market prices using the indirect taxation correction factor of 1.19, as well as converting to discounted 2023 real prices.

1.5. The Scheme's Monetised Benefits

Introduction

1.5.1. This section gives the results for each of the scheme impacts which have been appraised (see Table 1-3). Full details on the appraisal results are available in the "Economic Appraisal Report". This section summarises the scheme impacts in terms of transport user benefits, indirect tax, accidents, noise, air quality, greenhouse gases, construction impacts, reliability and wider economic impacts. When compared with the scheme costs these are used to calculate the initial and adjusted BCRs, as set out in Section 1.17 and Section 1.18 respectively.

1.5.2. The results presented here are for the 'Core' scenario. Results for other scenarios are presented in Section 1.20, which summarises the impact on scheme benefits and the BCR resulting from changes in key assumptions (sensitivity tests).

1.6. User Benefits

1.6.1. The Transport Economic Efficiency (TEE) benefits consist of travel time benefits and vehicle operating costs (VOC) expected to be realised due to the scheme.

1.6.2. The calculation of TEE benefits to road users was undertaken using TUBA (see Table 1-3) and TAG data book May 2026 (published December 2025).

1.6.3. TUBA compares journey times/ costs between the 'Without Scheme' scenario (Do Minimum) and the 'With Scheme' scenario (Do Something) to establish the value of the savings in road user travel times and vehicle operating costs. The results are set out in Table 1-5, split by trip purpose. There is a total of £65.7m in user benefits once the scheme is operational over the 60-year appraisal period, with 18% (£12.0m) of benefits accruing to commuters, 23% (£15.2m) to those on business trips (including freight), and 59% (£38.5m) to other users (e.g. trips for leisure, shopping or education).

Table 1-5: Discounted TEE Benefits by Purpose– Core Scenario, £000s 2023 Prices and Values

Trip purpose	Travel Time	Vehicle Operating Costs	Total
Non-Business: Commuting	£11,961	£47	£12,008
Non-Business: Other	£22,764	£15,734	£38,498
Business (Freight)	£9,571	-£1,204	£8,367
Business (Personal)	£7,378	-£702	£6,676
Total	**£51,674**	**£13,875**	**£65,549**

1.6.4. Table 1-6 shows the split in user benefits by purpose and vehicle type, and Table 1-7 shows the split by five modelled time periods. Freight Goods vehicles account for 13% (£8.4m) of total benefits. The largest total benefits (£21.3m) are in the interpeak (33%), with the AM and PM Peaks contributing 13% and 21% respectively, with the 14% attributable to the off-peak and 19% to weekends and bank holidays. These results are strongly influenced by the calculated annualisation factors (i.e. total demand over the total time period covered) in those periods.

1.6.5. Table 1-8 shows the forecast scheme benefits within the four time periods expressed on a per hour basis, i.e. excluding the effects of annualisation. This figure shows that forecast scheme benefits per hour are forecast to be highest in the morning and evening peaks, with the lowest levels of scheme benefits per hour forecast during the interpeak and off-peak periods with weekends in-between the morning and evening peak periods.

Table 1-6: Discounted TEE Benefits by Purpose and Vehicle Type– Core Scenario, £000s 2023 Prices and Values

Trip purpose	Private Cars and LGVs	Goods Vehicles LGV/OGV Freight	Total
Non-Business: Commuting	£12,008		£12,008
Non-Business: Other	£38,498		£38,498
Business	£6,676	£8,367	£15,043
Total	**£57,182**	**£8,367**	**£65,549**

Table 1-7: Discounted TEE Benefits by Time Period – Core Scenario, £000s 2023 Prices and Values

Scenario	AM	PM	IP	Off-peak	Weekend	Total
Core Scenario	£8,707	£13,914	£21,319	£9,130	£12,479	£65,549

Table 1-8: Discounted TEE Benefits per Hour – Core Scenario, £s 2023 Prices and Values

Scenario	AM	PM	IP	Off-peak	Weekend
Core Scenario	£263	£324	£199	£150	£284

1.7. Transport Economic Efficiency

Table 1-9: Transport Economic Efficiency (TEE) table, £000s 2023 prices and values

Non-business: Commuting	**ALL MODES**		**ROAD**	
User benefits	**TOTAL**		**Private Cars and LGVs**	
Travel time	£11,961		£11,961	
Vehicle operating costs	£47		£47	
User charges	£0		£0	
During Construction & Maintenance	£0		£0	
NET NON-BUSINESS BENEFITS: COMMUTING	£12,008	*(1a)*	£12,008	
Non-business: Other	**ALL MODES**		**ROAD**	
User benefits	**TOTAL**		**Private Cars and LGVs**	
Travel time	£22,764		£22,764	
Vehicle operating costs	£15,734		£15,734	
User charges	£0		£0	
During Construction & Maintenance	£0		£0	
NET NON-BUSINESS BENEFITS: OTHER	£38,498	*(1b)*	£38,498	
Business				
User benefits			**Goods Vehicles**	**Business Cars & LGVs**
Travel time	£16,949		£9,571	£7,378
Vehicle operating costs	-£1,719		-£1,175	-£544
User charges	£0		£0	£0
During Construction & Maintenance	-£187		-£29	-£158
Subtotal	£15,043	*(2)*	£8,367	£6,676
Private sector provider impacts				
Revenue	£0			
Operating costs	£0			
Investment costs	£0			
Grant/subsidy	£0			
Subtotal	£0	*(3)*		
Other business impacts				
Developer contributions	£0	(4)	£0	
NET BUSINESS IMPACT	£15,043	*(5) = (2) + (3) + (4)*		
TOTAL				
Present Value of Transport Economic Efficiency Benefits (TEE)	**£65,549**	*(6) = (1a) + (1b) + (5)*		

Notes: Benefits appear as positive numbers, while costs appear as negative numbers.

All entries are discounted present values, in 2023 prices and values.

1.7.1. The Transport Economic Efficiency (TEE) benefits consist largely of travel time benefits and vehicle operating cost benefits (for non-business travel) expected to be realised due to the scheme. The overall TEE benefits amount to £65.5m.

1.8. Indirect Taxation

1.8.1. Impacts on indirect tax mainly arise from increases or decreases in tax take from changes in, for example, fuel use. The scheme is expected to have a positive impact on indirect tax post-opening, with revenues accruing to Government increasing by £7.5m.

1.9. Construction Impacts

1.9.1. Construction is due to commence in December 2026, and it is expected that it will be completed in September 2028.

1.9.2. Due to the nature of the scheme, traffic management will be required at A465 Abergavenny Road and A49 Ross Road.

1.9.3. The contractor (John Graham Construction Ltd) will develop the construction traffic management plan during the pre-construction development phase. The contract includes specification documents prepared for the same works in September 2018. These documents were well developed, and it is reasonable to assume that the proposed traffic management requirements will be similar to those specified in the original contract.

1.9.4. Appendix 1/17 of the specification provided details of the traffic safety and management for the scheme.

1.9.5. The traffic management proposals including programme and layout will be submitted by the contractor for approval by Herefordshire Council. The traffic management requirements at the A49 roundabout will also require approval by National Highways.

1.9.6. The A465 roundabout will be constructed offline with the tie-ins to the existing highway network completed under temporary signal operation. Such works are likely to require single way working for four weeks at each tie-in. Thus, the A465 will operate under single way working for a total duration of eight weeks.

1.9.7. The existing A49 roundabout was designed to enable a fourth arm to be added on its western side to accommodate the new southern link road proposals. It is anticipated that these works will be completed by narrowing the carriageway width on the A49 northbound approach and exit to a single lane. However, the overall extent of works and depth of pavement construction will require approval by National Highways. If it requires additional pavement works on the circulatory carriageway further traffic management measures may be required. A temporary site access will be provided on the western side of the roundabout for the duration of the works. This will operate without disrupting regular traffic as the site traffic will effectively use the new fourth arm of the roundabout.

1.9.8. The Table 1-10 below is taken from the 2018 specification (the term ‘SCW NSL’ stands for single carriageway national speed limit).

Table 1-10: Extract from 2018 Specification

Highways, Private Roads and Other Ways Affected by the Works

Location	Predicted 24 Hour Annual Average Daily Traffic AADT	% HGVs	Use of route by Buses / Coaches	Average Speed of Cars MPH	Speed Limit MPH (if proposed, mandatory or advisable)	Type(s) of Traffic Control	Special Facilities (Pedestrian/ Equestrian)	Whether to be kept open or closed
A465 Abergavenny Road	20,623	4.62%	Yes	24.9	SCW NSL	Traffic Signals		To be kept open
A49 Ross Road	22,153	5.73%	Yes	25.3	SCW NSL	Subject to agreement with Highways England		To be kept open

1.9.9. There is a requirement for temporary traffic signals to be operated manually from 07:00-09:00 and 16:00-18:00 (Monday to Friday) to minimise disruption during peak hours. There is also a requirement that traffic shall be free flowing over bank holidays and that the contractor is to liaise with Herefordshire Council and National Highways to identify and accommodate special events.

1.9.10. The A49, A465 and B4349 Clehonger Road are used extensively by public transport. The Contractor will be required to liaise with the various bus companies and provide them with sufficient notice of any restrictions to enable them to make alternative arrangements for routeing their vehicles or relocating stops.

1.9.11. In the absence of a construction management plan at the time of writing, a spreadsheet assessment of the construction impacts on existing highway users have been undertaken.

1.9.12. This analysis has assumed no user delays at the eastern end of the scheme (A49 tie-in) and traffic management measures at the western end of the scheme (A465 tie-in). Following the discussion above, the following assumptions have been made for this western A465 tie-in:

1.9.13. A465 tie-in is assumed to occur during 2028;

- 24-hour AADT (2-way) of 6420, of which 207 is HGV (*derived from 2028 HSTM 'without scheme' forecast);
- 8-weeks of single-way working;
- average delay per vehicle of 2 minutes across the day;
- 2028 values of time derived from TAG May26 data book;
- journey purpose splits derived from TAG May26 data book; and
- 2028 value of time savings discounted to 2023 using a discount rate of 3.5%.

1.9.14. The result of this analysis is a net cost of **£0.187m** (**£0.029m** for HGV, **£0.158m** for light vehicles), expressed in 2023 prices and values.

1.10. Greenhouse Gases

1.10.1. The DfT's Vehicle Emissions Carbon Tool (VECAT) and the DfT's greenhouse gases TAG workbook have been used to estimate the greenhouse gas impact of the scheme. The methodology outlined in Department for Transport (DfT) Transport

Appraisal Guidance (TAG) Unit A3 has been followed in this assessment, alongside the use of VECAT.

1.10.2. The TAG greenhouse gases workbook is used to assess the monetary value of the impacts of proposed transport schemes on CO_2(e) emissions over a 60-year appraisal period.

1.10.3. To inform the assessment, traffic data were extracted from the HSTM (AM Peak hour, interpeak average, PM Peak hour, and weekend periods) for 'Without Scheme' and 'With Scheme' forecasts in the three forecast years (2028, 2043, and 2061).

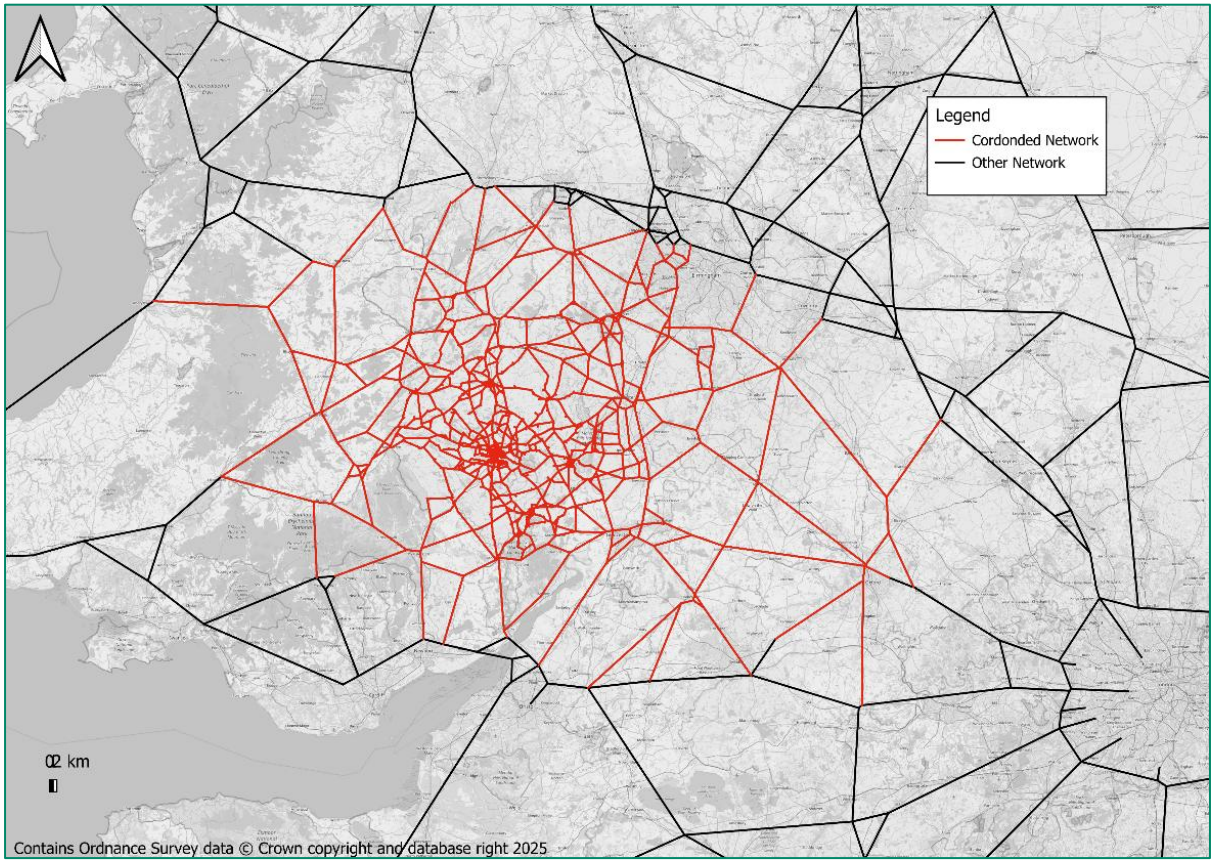
1.10.4. VECAT v1.01 was used in the estimation of CO_2(e) emissions for time period-flow traffic data for each modelled year, with and without the scheme.

1.10.5. VECAT provides CO_2(e) output for traded and non-traded emissions. In this instance, traded emissions are those associated with generating the power to charge electric and plug-in hybrid vehicles, and non-traded emissions are those associated with vehicle exhausts.

1.10.6. Changes in CO_2(e) emissions from the opening year (2028) to the end of the 60-year appraisal period with and without the scheme in place, for traded and non-traded emissions, were input into the Greenhouse Gases Workbook (November 2025).

1.10.7. To ensure that the emissions assessment captures the scheme's area of influence while excluding areas beyond its likely impact, a defined emissions analysis area was applied. This area, illustrated in Figure 1-6, includes the full simulation network and an extended buffer network.

Figure 1-6: Area of Influence (VECAT Assessment)



1.10.8. The CO2 equivalent emissions from VECAT have been imported to the DfT's greenhouses gases workbook. The results in Table 1-11 are summarised as follows, in 2023 prices, discounted to 2023, in market prices. Overall, the scheme is estimated to deliver a total reduction of 4,040 tonnes of CO_2e over the 60-year appraisal period compared with the Do Minimum scenario, of which 64.7 tonnes relate to traded emissions. This corresponds to a net present value of £0.865m for greenhouse gas impacts over the appraisal period. This benefit reflects the impact of Phase One, which shortens journey lengths for longer-distance trips and therefore lowers overall vehicle kilometres travelled relative to the Do Minimum (DM) scenario.

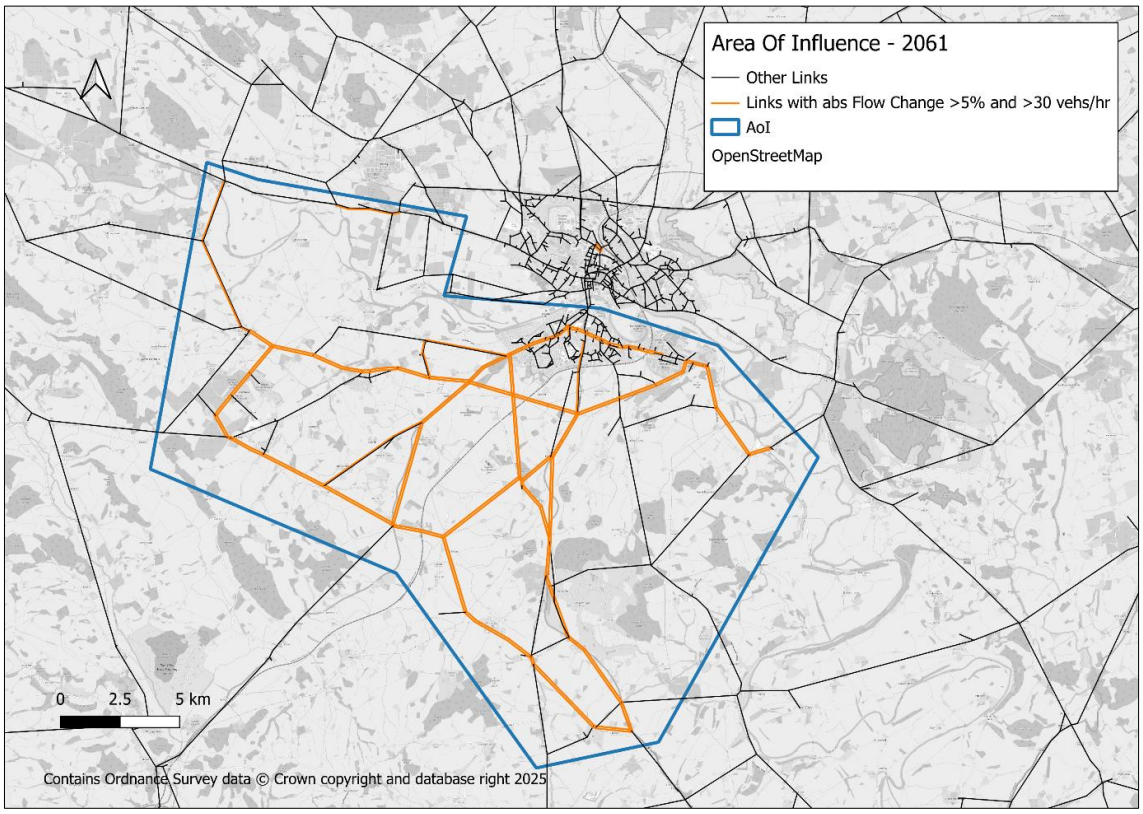
Table 1-11: Summary of Greenhouse Gas Impacts

Metric	Total
Change in $CO_2(e)$ over 60 years (tonnes)	-4,040
Of which traded (tonnes)	-64.7
Change in $CO_2(e)$ in 2028 (tonnes)	-260
NPV of greenhouse gas impact over 60 years	**£864,905**
Upper estimate of NPV	£1,298,433
Lower estimate of NPV	£431,631

1.11. Accident Impacts

1.11.1. For the assessment of accident impacts, CoBA-LT (Cost and Benefit to Accidents – Light Touch) v2.10 was used. It forecasts changes in the numbers of accidents and casualties associated with a change to the highway network and monetises those impacts over the 60-year appraisal period. The assessment was undertaken on the highway network within the scheme's Area of Influence, as shown in Figure 1-7. in-line with TAG Unit A4.1 Social Impact Appraisal national average accident rates were used.

Figure 1-7: Area of Influence (Accident Assessment)



1.11.2. Table 1-12 summarises the number of estimated casualties by accident type. While the total number of accidents is approximately the same for the Without and With scheme forecasts, there is an increase in the severest accidents (fatal and serious). The reduction in slight casualties is likely due to traffic being diverted away from lower-speed roads within Hereford, while the small increase in fatal and serious casualties is likely associated with the introduction of the scheme operating at higher speeds.

Table 1-12: Summary of casualty statistics

Description	Accident type	Number of accidents
Total Without Scheme casualties	Fatal	32.8
	Serious	411.0
	Slight	3460.5
Total With Scheme casualties	Fatal	33.9
	Serious	412.0
	Slight	3449.4
Total casualties saved by scheme	Fatal	-1.1
	Serious	-1.0
	Slight	11.1

1.11.3. The scheme is forecast to generate accident disbenefits of £1.009m (Table 1-13). These accident disbenefits are associated with the higher economic weighting applied to fatal and serious casualties; the total number of casualties reduces as an impact of the scheme, with traffic removed from Hereford, but this is at the cost of an additional serious and fatal injury in the area of influence over the 60-year appraisal period.

1.11.4. It should be noted that this is a technical outcome of the methodology used within CoBA-LT, which calculates the product of vehicle-kilometres travelled and standard national accident rates, rates which increase in severity above 40mph. Therefore, by adding a new stretch of 3km road with the national speed limit, which will also draw in traffic into the area of influence as a result of the scheme, the modest increase in more serious casualties as a result of the scheme is not unexpected.

Table 1-13: Summary of accident appraisal, £000s 2023 prices and values

Description	Value
Total Without Scheme accident costs	247,128
Total With Scheme accident costs	248,137
Total accident benefits saved by the scheme	-1,009

1.12. Noise Impacts

1.12.1. Major (>=5 dB) increases in road traffic noise are expected at receptors in close proximity to the scheme; this impacted area is however sparsely populated.

1.12.2. Despite being close to the scheme, receptors along Haywood Lane are expected to experience a minor decrease in road traffic noise. This is due to fewer vehicles using this road with the scheme constructed.

1.12.3. Major decreases in road traffic noise are expected along the closed section of the B4349. Reductions in traffic noise are also expected along Belmont Road, Walnut

Tree Avenue and Holme Lacy Road. However, the scale of these reductions falls below the threshold to be included in the economic analysis of this impact.

1.12.4. Due to the introduction of the scheme minor increases in road traffic noise are expected along the B4349 between the scheme and Clehonger. These changes are just above the threshold to be included within the economic analysis of this impact. The minor noise increase continues from Clehonger along the B4352 into Madley. From Madley minor increases in road traffic noise are expected along Bage Pitch Road up to the A438. This is due to rerouting of traffic which would have otherwise used an existing route prior to scheme opening.

1.12.5. These existing routes from where traffic has been diverted are expected to experience minor decreases in road traffic noise. From east to west these are as follows:

- roads through Callow and Portway off Haywood Lane;
- the road connecting Haywood Lane to the B4348;
- the B4348 from this junction to St Bartholomew's Church, Thruxton;
- B4348 between Blackthorn and the junction with the B4349; and
- Stone Street Between Blackthorn and the B4352.

1.12.6. The following numbers of households are forecast to experience material changes in noise with the scheme in place with the scheme delivered, in the design year of 2043.

- 290 households experience increased daytime noise;
- 226 household experience reduced daytime noise;
- 74 households experience increased nighttime noise; and
- 129 household experience reduced nighttime noise.

1.12.7. The monetised impact of the change in traffic noise was calculated using the relevant TAG workbook (based on guidance produced by Defra on assessing the impacts of transport related noise from different sources). This resulted in a net benefit of £0.960m in discounted 2023 prices and values.

1.13. Air Quality Impacts

1.13.1. The air quality study area is located within Hereford. Herefordshire Council has declared two air quality management areas (AQMAs) for exceedances of the NO2 annual mean objective, one of which is in the city of Hereford (as described in the Strategic Dimension). However, the scheme is located outside these, located approximately 2.5 km from the closest AQMA (Hereford AQMA). The nearest monitoring site to the scheme reported an annual mean NO2 concentration of 20.3 µg/m3 in 2024. This is diffusion tube site 79, which is located approximately 2.3 km to the north of the scheme, at a roadside location on Belmont Road in Hereford. The scheme is located in a rural area to the south of Hereford, meaning that monitored concentrations are therefore likely to be lower than those reported at the nearest monitoring site. It is also worth noting that Herefordshire council are in the process of revoking the AQMA within Hereford as the NO2 concentration levels have been below the threshold values by 10% for the last five years.

1.13.2. With the scheme operational, both decreases and increases in pollutant concentrations are anticipated, due to changes in traffic flows and road layouts associated with the scheme, which could lead to relative improvements or deteriorations in air quality respectively.

1.13.3. The largest increases in forecast traffic flows are on roads located in close proximity to the scheme. These include the southern section of the A465, on approach and leaving the proposed roundabout within the scheme, as well as the B4349 and the Clehonger Link, located between the A49/B4399 roundabout and the proposed roundabout on the A465. There are properties located within 20 metres and 50 metres of these roads, which could experience a deterioration in local air quality. However, when considering the magnitude of the change in traffic flow, the existing air quality, the impacts are not likely to be significant.

1.13.4. The largest decreases in traffic flows were seen on a rural road off the A49 and along the northern section of the A465, as it travels through Belmont towards Hereford. There are properties located within 20 metres of these roads, which could experience an improvement in local air quality. However, when considering the magnitude of the change in traffic flow, the existing air quality, the impacts are not likely to be significant.

1.13.5. In addition, decreases in traffic flow were also predicted in the more populated areas to the south of Hereford and therefore improvements in air quality at residential properties would also be expected in these areas. However, the magnitude of change in the number of vehicles on the roads was below the criteria to be included in the quantitative air quality appraisal. For example, a decrease of approximately 700 vehicles per day is anticipated on Walnut Tree Avenue and a decrease of approximately 600 vehicles per day is anticipated on Holme Lacy Road.

1.13.6. Overall, the air quality impacts are considered to be **not material**, with a very slight overall monetised disbenefit of £0.08m in discounted 2023 prices and values.

1.14. Reliability Impacts

1.14.1. The scheme is likely to result in wider economic impacts that are additional to the transport user benefits set out in the preceding sections. It is also likely to improve journey time reliability due the additional capacity that the scheme represents.

1.14.2. The methodology to quantify and monetise such benefits is based on an evolving approach and is less widely accepted and researched. When combined with the benefits summarised in the preceding sections of this chapter to calculate the initial BCR, an adjusted BCR can be calculated.

1.14.3. The change in journey time reliability was estimated for the scheme's Area of Influence based on the guidance contained within TAG Unit A1.3, Section 6.3 for urban roads. This approach considers the ratio of the assigned time within the highway model to the free-flow time as a measure of the standard deviation in journey times and monetises this using the same assumptions as adopted within the TUBA assessment of the forecast scheme impacts.

1.14.4.

1.14.5. Table 1-14 summarises the results of the reliability assessment by user class. An overall journey time reliability benefit of £1.714m is estimated over the over the 60-year appraisal period.

Table 1-14: Summary of reliability benefits by user class, £m 2023 prices and values

User class	Value, £m
HGV	0.027
LGV	0.178
Car Employers' Business	0.175
Car Other	0.862
Car Commute	0.472
Total	**1.714**

1.15. Wider Economic Impacts

Introduction

1.15.1. Wider economic impacts arise because market failures in secondary (non-transport) markets, such as the product, labour, and land markets, mean that the full welfare impact of a transport investment may not be reflected in the transport market. The underlying assumption is that improved connectivity and accessibility between areas will effectively reduce the 'economic distance' between enterprises, increasing business productivity and competition.

1.15.2. The wider economic impacts are described in TAG Unit A2 and can be divided into three distinct groups on the basis of land-use change: fixed land-use, implicit land-use change; and explicit land-use change. As none of the housing or employment developments assumed in the forecasting are specifically dependent upon the scheme (although the scheme will be one of the enablers for this growth), wider economic impacts were assessed based on the assumption of fixed land-use and calculated using the DfT's Wider Impacts in Transport Analysis (WITA) software (v2.3).

1.15.3. In assessing the potential scale of wider economic impacts, it is useful to determine the extent to which the scheme is located within or sufficiently close to a 'Functional Urban Area' (FUR), and hence to check that the range of possible wider economic impacts is likely to materialise. FURs contain a high density of businesses that are able to benefit from clustering, through achieving agglomeration (productivity) benefits such as learning, networking and coordination. The scheme is located on the edge of the Hereford FUR, but also has MRN and SRN connections to the nearby Leominster and Ledbury FURs to the north and southeast respectively. Agglomeration effects decay over distance. Empirical evidence suggests that for agglomeration to occur the relative travel times must be within 45 minutes; peak morning journey times to Worcester are generally more than this, although interpeak and evening peak journey times from those locations may be feasible within 45 minutes.

Agglomeration

1.15.4. WITA was used to assess static clustering, the impact on productivity of the decrease in generalised travel costs that in effect brings firms and employees closer together and assumes no change in land-use. It was not considered justifiable to assess productivity impacts on the basis of land-use change brought about by the scheme (dynamic clustering), given there are a number of drivers and factors behind forecast increases in employment and dwellings, not all of which can be attributed to the scheme.

Labour supply impacts

1.15.5. WITA was used to assess labour supply impacts. Transport costs are likely to affect the overall costs and benefits to an individual from working. In deciding whether to work, an individual will weigh travel costs against the wage rate of the job travelled to. A change in transport costs is therefore likely to affect the incentive to work and hence the overall level of labour supplied in the economy.

1.15.6. As the scheme reduces the generalised cost of travel, mainly through improved travel times rather than a reduction in vehicle operating costs, there will be a higher level of labour supplied in the economy due to its implementation. It should be noted that only the tax revenues from changes in the labour supply are counted as additional benefits.

Increased output in imperfectly competitive markets

1.15.7. As detailed in TAG, the impact of increases or decreases in output in imperfectly competitive markets is calculated as a factor of the total business user benefits derived from TUBA. The estimate of the factor of benefits to take is specified in TAG Unit A2.2 Paragraph 4.3.1 as 13.4%. This can also be applied to journey time reliability assessments, although this was not undertaken in this case, and would only have had a very small positive benefit.

Results

1.15.8. Table 1-15 shows the forecast benefits arising from agglomeration, by industrial sector. It shows there are positive agglomeration impacts realised from the scheme, providing around £0.73m of benefits across the 60-year appraisal period. This is due to the reductions in journey times and delays (for both personal and business trips) as the scheme improves the connectivity and accessibility between suppliers and firms. Most of the benefits are associated with Herefordshire (£0.47m), the district in which there is the largest congestion relief and increase in accessibility.

Table 1-15: Benefits arising from agglomeration impacts, 2023 prices and values

Industrial sector	Value of benefit
Manufacturing	£13,384
Construction	£98,425
Consumer services	£242,701
Producer services	£372,055
Total	**£726,565**

1.15.9. As the scheme is forecast to reduce the cost of travel, through improved travel times and reliability, there will be a higher level of labour supplied in the economy due to its implementation. As shown in Table 1-16, there is expected to be a marginal tax revenue increase of more than £0.31m.

Table 1-16: Benefits arising from labour supply Impacts, 2023 prices and values

Economic impact type	Value of benefit
Welfare Benefit from Labour Supply Impact	£781,991
Tax Revenues from the Labour Market Impact of Additional Workers	£312,796
Total	£1,094,787

1.15.10. The impact of increases or decreases in output in imperfectly competitive markets, calculated as an uplift factor of the total business (including freight) user benefits derived from the conventional transport user benefit appraisal, is estimated to be £2.06m (Table 1-17).

Table 1-17: Benefits arising from increased output in imperfectly competitive markets, 2023 prices and values

Economic impact type	Value of benefit
Output Change in Imperfectly Competitive Markets	£2,057,168

1.15.11. The overall wider economic impacts, as summarised in Table 1-18, are estimated to be £3.88m. Of these, just over half (53%) are forecast to be realised through Change in Imperfectly Competitive Markets, with the scheme improving accessibility between firms and their suppliers, markets and workers, with much of this benefit accruing in Herefordshire.

Table 1-18: Summary of wider economic impacts, 2023 prices and values

Economic impact type	Value of benefit
Agglomeration	£726,565
Labour market impacts	£1,094,787
Imperfectively competitive markets	£2,057,168
Total	**£3,878,520**

1.16. Scheme Costs

Introduction

1.16.1. This section summarises the scheme costs as used in the economic assessment, based on May 2026 estimates.

Scheme Costs

1.16.2. The base costs for the scheme have been estimated through the development of a bill of quantities exercise that was undertaken following the appointment of the D&B contractor for the scheme and the completion of the detailed design process. The costs encompass project development activities, construction, and support resources and are distributed between financial years 2026/27 and 2028/29. Sunk project development costs incurred between financial years 2024/25 and 2025/26 inclusive have been discounted from the base costs given that they are now unrecoverable regardless of the scheme's construction.

1.16.3. The present value cost of the scheme has been developed in-line with DfT TAG Unit A1-2 Scheme Costs, which outlines the methodology for converting base costs into present value costs.

1.16.4. The initial base cost has been calculated as the total cost developed through the bill of quantities minus sunk costs and the monetary output of the quantitative risk assessment (QRA) detailed in Appendix G. The output of the QRA has been discounted as this forms part of the later stages of the methodology of DfT TAG Unit A1-2. This results in an initial base cost, as seen in Table 1-19, of £37.2m in 2026 prices.

1.16.5. Whilst the costs per financial year are all fixed in 2026 prices, costs expected to be incurred in 2027/28 and 2028/29 may increase more than the TAG assumed GDP

deflator level. Construction cost inflation has been derived from the Series 7808 Building Cost Information Service Road Tender Price Index. This forecasts a rise in building costs over the next 12 months (from Q2 of 2026) to be 2.8% per annum, meaning that there will be additional 'real price' increase for future years. Accounting for this real price increase due to construction cost inflation, the total cost, for appraisal purposes, rises to £37.4m in 2026 prices.

1.16.6. DfT TAG Unit A1-2 requires an adjustment to factor in optimism bias or contingency, with the guidance suggesting that the larger of these two being taken. The recommended optimism bias for a highway scheme at FBC stage is 20%, however, Green Book supplementary guidance on optimism bias outlines how contributory factors to this 20% optimism bias can be mitigated. A mitigation exercise has been undertaken, the results of which are detailed in Table 1-20, with an optimism bias of 11.8% being deemed suitable. The QRA monetary output, as a proportion of the initial base cost, is equal to an uplift of 8.8%, therefore, the optimism bias uplift of 11.8% has been applied, leading to a cost, for appraisal purposes, of £41.8m in 2026 prices.

1.16.7. To convert the 2026 prices into a present value cost in 2023 (as is required by DfT TAG Unit A1-2), the costs incurred for each financial year are deflated and discounted to 2023 prices, resulting in a scheme cost of £33.2m. Finally, a market price adjustment has been applied in accordance with DfT TAG Unit A1.2 to convert costs from market prices to factor prices, ensuring that the present value costs reflect the underlying economic cost of resources consumed. This removes the effect of indirect taxes and subsidies, which represent transfer payments rather than real costs to society. This results in a total present value cost of the scheme of £39.6m in 2023 prices. This is the cost which will be used in the appraisal of the scheme.

Table 1-19: Scheme Cost Calculation (£000s)

Base Cost (2026 prices)	Real Cost Adjustment (2026 Prices)	Optimism Bias Adjustment (2026 Prices)	Deflated, Discounted, and Corrected for Market Prices (2023 Prices)
£37,162.5	**£37,381.5**	**£41,792.6**	**£39,558.1**

Table 1-20: Optimism Bias Mitigation

Contributory Factor	Standard contribution (%)	Mitigation Factor	Justification	Contribution after mitigation (%)
Late contractor involvement in design	3	0.5	Delays may be caused by availability of resources, third party dependencies, lack of finance, site conditions and weather. The D&B contractor for the scheme has already been appointed, with any delays being minimised by careful monitoring and	1.5

Contributory Factor	Standard contribution (%)	Mitigation Factor	Justification	Contribution after mitigation (%)
			regular meetings, effective site management, collaborative working and effective coordination, careful scheduling with full commitment to the project by all parties.	
Dispute/claims occurred	21	0.5	Disputes / claims may be caused by uncertainty, contractual problems, and behaviour. Planning consent for the scheme was also already granted by Herefordshire Council in July 2016. Any further disputes with third parties will be mitigated through regular meetings, effective communication and collaborative working between all parties involved.	10.5
Environmental impact	22	0.5	An environmental impact assessment was carried out as part of the planning process, which identified likely environmental effects and potential mitigation measures to minimise these effects. Following detailed design, the scheme is anticipated to have only one moderate adverse residual environmental effect - on the historic environment.	11
Inadequacy of business case	10	0.5	The business case has been developed in accordance with DfT and Green Book guidance. The business case was	5

Contributory Factor	Standard contribution (%)	Mitigation Factor	Justification	Contribution after mitigation (%)
			prepared by AECOM, which has a proven track record of developing business cases for successful funding bids.	
Poor project intelligence	7	1	The project will be managed by Herefordshire Council, including a governance structure featuring a host of members who have an excellent track record in project managing complex, innovative and ambitious highway projects.	0
Public relations	9	0.5	Engagement and consultation have been undertaken with stakeholders and the public around key features of the scheme, ensuring that residents and business are well informed and remain involved in the development and implementation of the scheme.	4.5
External influences	7	0	No mitigation justification required.	7
Site characteristics	3	0.5	A detailed analysis of the site characteristics was undertaken as part of the original environmental impact assessment, and later as part of the detailed design.	1.5
Other	18	0	No mitigation justification required.	18
Total	100	-	-	59
Optimism Bias	20%	-	-	11.80%

1.17. Analysis of Monetised Costs and Benefits

Introduction

1.17.1. This section summarises the monetised costs and benefits, tabulating them in Analysis of Monetised Costs and Benefits (AMCB) tables, and presenting the initial and adjusted benefit cost ratios of the scheme. These all relate to the 'Core' scenario.

1.17.2. The impacts set out in the preceding sections for transport user, accident and environmental benefits are based on established methodologies. Based on this, Table 1-21 summarises the costs and benefits that form the 'initial' BCR. The scheme has a PVB of £58.8m, compared with a PVC of £39.6m, resulting in a NPV of £19.2m and an initial BCR of 1.5 (medium value for money). This excludes wider economic and journey time reliability impacts, which are used to calculate an adjusted BCR, and are covered in the following section.

Table 1-21: AMCB and initial BCR, £000s 2023 prices and values

Analysis of Monetised Costs and Benefits

Noise	£960	*(12)*
Local Air Quality	-£80	*(13)*
Greenhouse Gases	£865	*(14)*
Journey Quality	-	*(15)*
Physical Activity	-	*(16)*
Accidents	-£1,009	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£12,008	*(1a)*
Economic Efficiency: Consumer Users (Other)	£38,498	*(1b)*
Economic Efficiency: Business Users and Providers	£15,043	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£7,490	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Present Value of Benefits (see notes) (PVB)	£58,795	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£39,558	*(10)*
Present Value of Costs (see notes) (PVC)	£39,558	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	£19,237	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	**1.5**	BCR=PVB/PVC

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

1.18. Analysis of Monetised Costs and Benefits (Adjusted)

1.18.1. Table 1-22 summarises the costs and benefits that form the 'adjusted' BCR, by including wider economic and journey time reliability impacts. The scheme has a PVB of £64.4m, compared with a PVC of £39.6m, resulting in a NPV of £24.8m and an adjusted BCR of 1.6 (medium value for money).

Table 1-22: AMCB and adjusted BCR, £000s 2023 prices and values

Analysis of Monetised Costs and Benefits including wider economic impacts and journey time reliability

Noise	£960	*(12)*
Local Air Quality	-£80	*(13)*
Greenhouse Gases	£865	*(14)*
Journey Quality	-	*(15)*
Physical Activity	-	*(16)*
Accidents	-£1,009	*(17)*
Economic Efficiency: Consumer Users (Commuting)	£12,008	*(1a)*
Economic Efficiency: Consumer Users (Other)	£38,498	*(1b)*
Economic Efficiency: Business Users and Providers	£15,043	*(5)*
Wider Public Finances (Indirect Taxation Revenues)	-£7,490	*- (11) - sign changed from PA table, as PA table represents costs, not benefits*
Wider Impacts	£3,879	
Journey Time Reliability	£1,714	
Present Value of Benefits (see notes) (PVB)	£64,388	*(PVB) = (12) + (13) + (14) + (15) + (16) + (17) + (1a) + (1b) + (5) - (11)*
Broad Transport Budget	£39,558	*(10)*
Present Value of Costs (see notes) (PVC)	£39,558	*(PVC) = (10)*
OVERALL IMPACTS		
Net Present Value (NPV)	**£24,829**	NPV=PVB-PVC
Benefit to Cost Ratio (BCR)	**1.6**	BCR=PVB/PVC

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

Summary

1.18.2. The Core Scenario has a PVB of £58.8m and a PVC of £39.6m, resulting in an overall NPV of £19.2m. When taking into account wider economic impacts and journey time reliability, the PVB increases to £64.4m and the NPV increases to

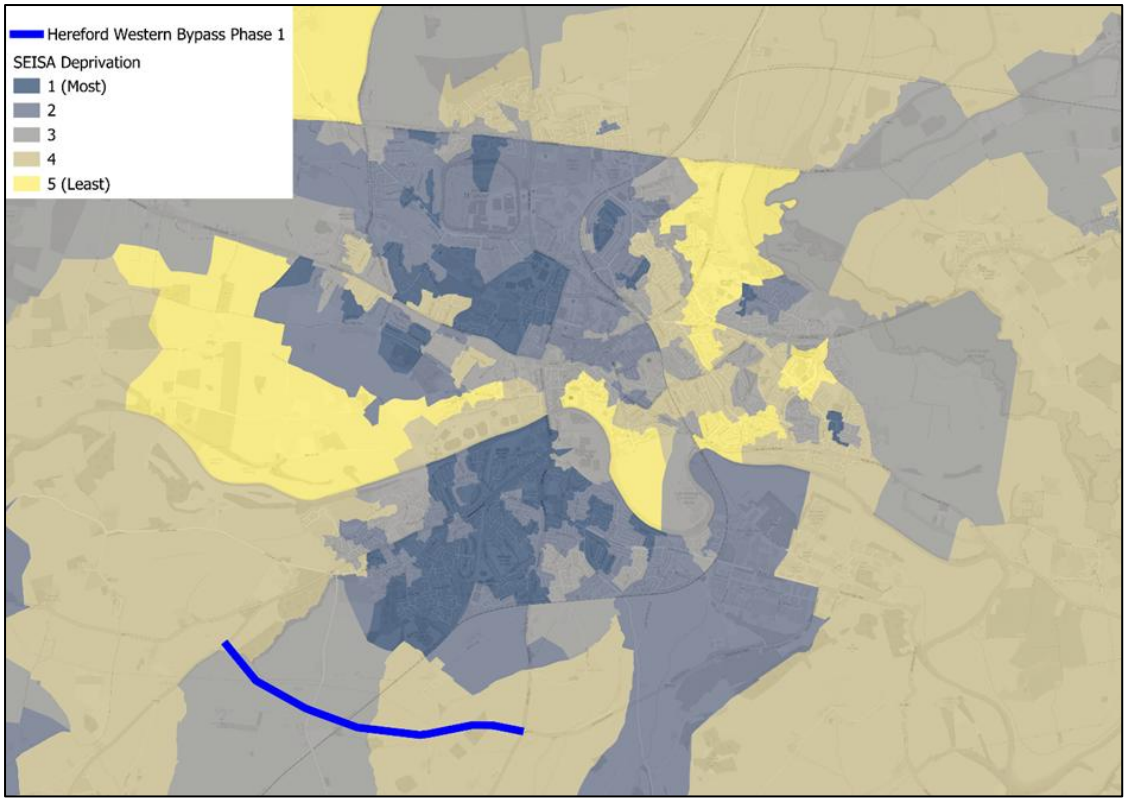
£24.8m. The scheme therefore has an initial BCR of 1.5 (medium value for money) and an adjusted BCR of 1.6 (medium value for money).

1.19. Distributional Impact Assessment

Introduction

1.19.1. A distributional impacts assessment has been undertaken for the indicators described in the DfT's TAG Unit on Distributional Impact Appraisal (Unit A4.2). The full report can be found in Appendix H. The assessment presented here includes reference to the Higher Education Statistics Agency Socioeconomic Index for Small Areas (SEISA), derived from 2021 Census data, and from which the population was categorised nationally into five equal groups (see Figure 1-8), from Group 1 (the 20% most deprived) through to Group 5 (the 20% least deprived).

Figure 1-8: SEISA Income Quintiles in the Area of Impact (Hereford)



Transport User Benefits

1.19.2. The user benefits assessment used TUBA outputs filtered to include only trips with a home location inside the AoI (defined for the distribution analysis as Herefordshire). Non-business trips ('commuting' and 'other' purposes) were aggregated by 2025 English Indices of Deprivation income quintile representing income level at LSOA scale.

1.19.3. The assessment revealed that user benefits are unevenly distributed across income groups, with significant benefits accruing to the middle-income group.

1.19.4. The middle-income group (Group 3) (34% of the population) receives 53% of the benefits.

1.19.5. The least deprived income group (Group 5) (8% of the population) receives 1% of the benefits.

1.19.6. The other income groups receive benefits in-line with their proportion of population.

1.19.7. This distribution represents a neutral outcome from an equity perspective, with disadvantaged groups receiving a proportionate share of the benefits. These groups are concentrated in South Wye. While they may not benefit from personal transport user benefits, due to lower car ownership and a higher propensity to use active modes within the city, they are not adversely affected by the change in travel pattern that produces the user benefits for other groups as there is a reduction in traffic in South Wye with the scheme.

Noise

1.19.8. Traffic noise impacts were assessed for 2,314 affected residential buildings within 600m of the scheme and affected links. These are all in the rural area outside the city. Both daytime (LAeq,16h) and night-time (LAeq,8h) traffic noise levels were evaluated. The analysis found that:

- Most people in the affected area experience no change in noise levels.

1.19.9. Of those experiencing change, more experience an increase than a decrease; the scheme has an overall negative noise impact in the distributional impact analysis.

- In the daytime, income Group 2 is adversely impacted to the greatest extent due to an increase in traffic near Clehonger village on the B4349. Income Group 3 is positively impacted to the greatest extent due to a preponderance of receptors on indirect rural east-west routes relieved of traffic by the scheme. Groups 1 and 4 have proportionate adverse impacts and Group 5 is not present.

- Impacts on both children and older people are generally in-line with their proportion of the affected population.

1.19.10. Non-residential sensitive locations (schools, health centres, community centres, religious sites) show negligible noise impacts (less than 3dB change), resulting in a neutral assessment.

Air Quality

1.19.11. Air quality impacts were assessed for 2,437 affected residential receptors within 200m of affected links, analysing both PM2.5 and NO2 concentrations for the scheme design year. The analysis found that:

- Most people in the affected area experience no change in air quality.

1.19.12. Overall, there is a beneficial impact, indicating decreased PM2.5 and NO2 pollution with the scheme.

1.19.13. Groups 1 and 3 benefit most due to their locations concentrated along Belmont Road and rural east-west routes where traffic is reduced by the scheme.

- Group 2 has slight adverse PM2.5 and slight beneficial NO2 impacts. Adverse PM2.5 impacts are concentrated close to Clehonger village.

1.19.14. Group 5 has large adverse impacts due to being concentrated on the A49 near Much Birch which shows a small increase in traffic with the scheme.

- The impact on children is positive, and broadly proportional to population.

1.19.15. Non-residential sensitive receptors (schools, nurseries, care homes, GP surgeries) showed imperceptible changes in NO2 and imperceptible or very small PM2.5 changes.

Accidents

1.19.16. The accident assessment focused on identifying locations where there are clusters of accidents and casualties and which of the vulnerable groups have atypical casualty rates in the AoI.

1.19.17. Locations identified as having clusters of casualties in the STATS19 data are almost all junctions on the A49 and A465.

1.19.18. In the rural areas, casualty proportions for the vulnerable groups are like the county as a whole. In the urban areas of South Wye, there are higher proportions of Children and Cyclists and lower proportions of Older People than the county as a whole. South Wye has a younger population than the county as a whole and a greater propensity for active travel as journeys are shorter within the city.

1.19.19. The scheme reduces traffic at many of the affected junctions which are where indirect east-west routes currently used to go between the A49 and A465 join these roads. Notably this includes the B4348/A465 junction at Lock's Garage. Other affected junctions are in South Wye. The scheme generally reduces traffic in South Wye where the Cyclist and Child casualty proportions are high.

1.19.20. Impacts are moderate beneficial for Cyclists and Children and slight beneficial for Older People, Pedestrians, Motorcyclists and Young Male Drivers.

Security

1.19.21. The scheme is designed to maintain pedestrian access where road layout changes are proposed.

1.19.22. The possible impact on security indicators is assessed as neutral, and therefore no detailed distributional impacts assessment of security was undertaken.

Accessibility

1.19.23. The scheme maintains pedestrian access where road layout changes are proposed. There are no proposals to relocate services due to the scheme which would change access for public transport users.

1.19.24. The possible impact on public transport accessibility is assessed as neutral, and therefore an assessment of the distributional impacts of accessibility was not undertaken.

Severance

1.19.25. Severance assessment focused on links meeting TAG criteria for significant flow changes with flow per hour greater than the equivalent of 150 passenger car units, within areas likely to generate walking trips to amenities (within 800m) or bus stops (within 400m).

1.19.26. Routes meeting these criteria are either villages with some amenities or the Belmont Road-Walnut Tree Avenue-Holme Lacy Road-Straight Mile corridor. On the latter corridor the scheme reduces traffic and the impact is consistently beneficial. The affected population is mostly located in South Wye and includes significant numbers of people with no car availability, young people and disabled people. Impacts are assessed are slight beneficial for Older People and moderate beneficial for No-Car, Young and Disabled groups.

Personal Affordability

1.19.27. Personal affordability impacts were assessed focusing on changes in vehicle operating costs due to the scheme. The scheme is likely to increase journey distance for east-west traffic using the scheme and produce adverse impacts

(although it is worth noting that any increase in operating costs is more than offset by the benefits from reduced journey times).

1.19.28. In the wider area there are slight positive impacts for the A49 corridor.

1.19.29. The overall impact is adverse with the largest impact on the middle-income group (Group 3) and the least impact on the lowest (Group 1) and highest (Group 5) income groups.

Summary

1.19.30. The Distributional Impact Assessment is summarised for all indicators in Table 1-23. The scheme has mostly positive distributional impacts, benefitting the lowest 4 income groups and the younger, more deprived population in South Wye. Adverse impacts for personal affordability are to be expected for a scheme that generates longer faster journeys. The noise modelling did not cover the city where traffic is expected to reduce and some benefit could be expected.

Table 1-23: Distributional Impact Appraisal Matrix

	Distributional impact of income deprivation					Are the impacts distributed evenly?	Key impacts - Qualitative statements (example below)
	0-20%	20-40%	40-60%	60-80%	80-100%		
User benefits	✓✓	✓✓	✓✓✓	✓✓	✓	No	Positive benefits are felt by all income groups due to a reduction in journey time with the scheme in place. Benefits favour the middle income group and the highest income group has a disproportionately small share of benefits.
Noise	××	×××	✓✓✓	××	neutral	No	Noise impacts favour those in the middle income group. The affected areas for that group are the indirect west-east routes relieved by the scheme. The highest income group is not represented. All other groups experience noise disbenefits. 80% of the assessed population have no change in daytime noise.
Air quality $PM_{2.5}$	✓✓✓	×	✓✓✓	✓✓	××	No	PM2.5 impacts favour the most-deprived and middle income group. Due to their location in South Wye The second-most and least deprived groups experiences PM2.5 disbenefits. 80% of the assessed population have no change in PM2.5 concentration.
Air quality NO_2	✓✓✓	✓	✓✓✓	✓✓	×××	No	NO2 impacts favour the most-deprived and middle income group. Due to their location in South Wye The least deprived group experiences NO2 disbenefits. 85% of the

	Distributional impact of income deprivation					Are the impacts distributed evenly?	Key impacts - Qualitative statements (example below)
	0-20%	20-40%	40-60%	60-80%	80-100%		
							assessed population have no change in NO2 concentration.
Affordability	×	××	×××	××	×	No	Affordability disbenefits are felt by all income groups due to longer journeys with the scheme in place. The most- and least-deprived income quintiles have a smaller share of disbenefits and the middle-income group has a larger share of disbenefits compared with population.
Accessibility							Not assessed.

1.20. Sensitivity Tests

Common Analytical Scenarios

1.20.1. Sensitivity tests were undertaken to scrutinise the economic performance of the scheme,

1.20.2. The following Common Analytical Scenarios (CAS), in-line with the TAG Uncertainty Toolkit, were assessed:

- Low economic growth – assumes productivity growth fails to return to historic levels and inwards migration is subdued, causing low levels of total population growth.

- High economic growth – assumes productivity growth returns to its long-term (pre-COVID-19) trend, and people become richer than we currently expect. Migration and population in general increase above official forecasts.

1.20.3. The results of these tests are summarised in Table 1-24.

Table 1-24: Analysis of Monetised Costs and Benefits by CAS, excluding journey time reliability and wider economic impacts, £000s 2023 prices and values

CAS	Low	Core	High
User Benefits	£59,270	£65,549	£72,860
Other benefits (Noise and Air Quality not recalculated from the Core)	£826	£736	£594
Indirect Tax	-£7,235	-£7,490	-£7,959
Developer contributions	0	0	0
PVB	£52,861	£58,795	£65,495
PVC	£39,558	£39,558	£39,558
BCR	1.3	1.5	1.7
Value for Money excluding wider impacts and reliability	Low	Medium	Medium

1.21. Concluding Statement

Value for Money

1.21.1. The results of the economic assessment for the Scheme are presented in this Economic Dimension. There are benefits of **£58.8m**, rising to **£64.4m** when including wider economic impacts and journey time reliability. Compared with costs (PVC) of **£39.6m**, these result in an initial Benefit Cost Ratio (BCR) of 1.5 and an adjusted BCR of 1.6, both representing Medium Value for Money (VfM) in accordance with DfT VfM criteria.

1.21.2. This is a very strong result for Phase One of the Hereford Bypass, which has a primary purpose of being the enabler for delivering the wider bypass scheme. This appraisal demonstrates that Phase One can deliver significant benefits in its own right and deliver value for money. This provides a strong economic case for Herefordshire Council to invest in the delivery of this phase of the bypass scheme.

Prepared for: Herefordshire Council

3. Financial Dimension

Hereford Western Bypass

Phase One - Financial Dimension

Herefordshire Council

June 2026

Delivering a better world

Quality information

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Figures

No table of figures entries found.

Tables

1. Financial Dimension

1.1 Overview

1.1.1 The Financial Dimension focuses on the affordability of the scheme, and how it will be funded. It sets out the costs for Phase One of the bypass, including the approach to estimation, potential savings through value engineering cost profiling, along with financial risks to outline the financial viability of the scheme and determination as to whether it can be delivered within available budgets.

1.1.2 The chapter is split out across the following sections:

- Approach to cost estimation, including potential for value engineering;
- A breakdown of the total scheme costs;
- Cost profiling; and
- Commentary on the funding mechanisms for the scheme.

1.2 Approach to cost estimation

Construction Costs and Preliminaries

1.2.1 Graham Construction Ltd (Graham) was appointed as the Design and Build (D&B) contractor for the Phase One scheme in early 2026. The procurement process for this appointment is set out in more detail as part of the Commercial Dimension. Stage One of the D&B is award of the Pre-Construction Services Agreement (PCSA). This involves Graham working with the Council under the PCSA to finalise the construction costs (amongst other things).

1.2.2 As part of their tender submission, Graham were required to price a detailed cost estimate (Bill of Quantities) for the construction of the scheme, based on a combination of the previous design for the scheme and recommended updates identified by AECOM to ensure alignment with latest design standards and requirements. This also included calculation of all preliminaries associated with the scheme including mobilisation/demobilisation, management and supervision, site setup, traffic management etc.

1.2.3 In preparing this estimate, their Estimating Director and Senior Estimator collaborated with their site operations team and the supply chain (including AtkinsRealis as their design partner) to produce a detailed cost estimate for construction of the scheme, using the Causeway Estimating Software. The cost estimate followed a first principles approach and was governed by an Estimating Checklist to ensure a comprehensive approach to cost calculation. They also benchmarked their estimate for this project against similar recently completed projects to gauge accuracy.

1.2.4 Throughout the PCSA period, Graham are undertaking a Value Engineering (VE) exercise to identify cost reduction opportunities, acknowledging the importance of this process to ensure that the scheme costs remain affordable within the available budgets. The identification and application of VE to the scheme costs is discussed as part of this section.

Inflation

1.2.5 The outturn base costs (with contingency) have been adjusted for inflation in order to account for changes in ‘real costs’ over time, and accounting for the fact that base costs are in 2026 prices and scheme delivery is expected between December 2026 – September 2028. It is important that a suitable level of inflation is allocated as part

of the scheme costs to take account of the prevailing macro-economic external influences which could impact upon the price of construction materials. Inflation indices have been derived from the Series 7808 Building Cost Information Service Road Tender Price Index. This forecasts a rise in building costs over the next 12 months (from Q2 of 2026) to be 2.8% per annum. This level of inflation (compounded) has been applied to the scheme costs through to 2028/29.

Contingency

1.2.6 The project is likely to experience financial pressures, including several unknown costs primarily related to the interfaces with National Highways and Network Rail. Therefore, it is prudent that the project holds a healthy contingency budget.

1.2.7 The Department for Transport's 'Transport Appraisal Guidance' (specifically TAG Unit A1.2 – Scheme Costs) requires that where possible all project related risks that may impact on the scheme costs should be identified and quantified in a Quantified Risk Assessment (QRA), to produce a risk-adjusted cost estimate. In this regard, a QRA has been carried out based on engagement between Herefordshire Council, AECOM and Graham to determine implications of each identified risk on the cost of the scheme and the programme, based on a minimum, maximum and most likely scale. Further detail on the identification and management of risks is set out as part of the Management Dimension.

1.2.8 Outputs from this assessment have been input to the '@Risk' risk management software to determine P(20), P(50) and P(80) and P(mean) monetised risk values outputs. P(80) means that there is an 80% probability that the cost of risks will be less than or equal to this value, the P(Mean) value has been applied to the base cost, as recommended in TAG Unit A1.2. This amount equates to £3.26m. The accompanying QRA report is set out in Appendix G.

1.3 Total scheme costs

1.3.1 A detailed Bill of Quantity has been prepared for the scheme. A summary of the initial costs is set out in Table 1-1 below. All costs are reported in 2026 prices.

1.3.2 As set out in the previous section, the total works (construction) cost and preliminaries have been calculated by Graham. Contingency costs have been derived from the risk modelling associated with the QRA, whilst total outturn costs have been adjusted for inflation as described above. Final project development costs, including land purchases, design costs, professional services costs and PCSA Stage One have been provided by Herefordshire Council.

Table 1-1: Initial scheme cost estimate

Expense Item	Cost (£)
Preliminaries	£11,777,000
Construction costs	£26,162,000
Total Main Works cost	£37,939,000
Project Development	£5,737,000
Contingency (QRA)	£3,263,000
Total Project Development cost	£9,000,000
Support Resources	£300,000
Inflation	£1,063,000
Total Scheme Cost (excl. VE savings)	£48,302,000

1.3.3 As described in Section 1.2, Graham has been carrying out a VE exercise to determine potential cost reduction opportunities. This work has led to the initial identification of £3.5m cost savings to be applied to the total construction cost, based on the opportunities set out in Table 1-2.

Table 1-2: Value engineering savings

VE Opportunity	Cost Saving (£)
Replace imported fill with site won material from borrow pits.	£1,200,000
Remove 1m hard strip throughout the road length. Replace with wider verge through cuttings to assist earthworks deficit.	£750,000
Replace long RC wingwalls at S04 with Reinforced Earth walls similar to the solution at S02 and S08	£300,000
Adopt alternative pavement design utilising flexible pavement with (HBGM) base for the mainline pavement design	£400,000
Increase verge width through the cutting at CH1960-Ch2640 to win additional material and improve the current earthworks deficit.	£200,000
Optimisation of the drainage design including counterfort drains, balancing ponds, CKD, narrow filter drains, separate carrier drains, reduction in road crossings.	£150,000
Structure S06 shortened span for inspection, constructability and aesthetics	£500,000
Total	**£3,500,000**

1.3.4 It should be noted that at the time of this FBC submission, the VE exercise is ongoing and there may be opportunities for further cost savings to be made.

1.3.5 The updated scheme costs taking account of the VE savings are set out in Table 1-3. In this table, inflation has also been applied across the three main cost components.

Table 1-3: Scheme costs taking into account Value Engineering savings

Cost Component	Cost (£)
Project Development	£9,104,000
Construction	£35,308,000
Support Resources	£309,000
TOTAL SCHEME COST	**£44,721,000**

1.4 Cost profiling

1.4.1 The anticipated funding profile for the scheme is set out in Table 1-4. This is broken down across the three main cost components, with inflation included.

Table 1-4: Scheme cost profile

	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Project Development	£356,000	£2,100,000	£3,682,000	£2,106,000	£860,000	**£9,104,000**
Construction	£-	£-	£9,509,000	£19,511,000	£6,288,000	**£35,308,000**
Support Resources	£-	£-	£60,000	£164,000	£85,000	**£309,000**
Total	£356,000	£2,100,000	£13,251,000	£21,781,000	£7,233,000	**£44,721,000**

1.5 Funding mechanisms

1.5.1 The Council has put in place £45.3m of capital funds from its own resources/borrowing to deliver Phase One of the bypass. This budget has received S151 approval and was put in place following three governance decisions:

- Cabinet approval in March 2024 of £10.3m of capital and £760k of revenue for the development of the bypass including land acquisition, design work, development of the business case and contingency costs
- Full Council approval in February 2025 of £30m of capital for the construction of Phase One
- Full Council approval in February 2026 of £5m of capital towards the construction of Phase One

4. Commerical and Management Dimensions

Hereford Western Bypass

Phase One - Commercial and Management Dimensions

Herefordshire Council

June 2026

Delivering a better world

Quality information

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1. Commercial Case

1.1. Overview

1.1.1. The Commercial Dimension details the procurement strategy for the scheme. This covers the commercial and contractual means by which the Phase One scheme will be delivered. This chapter is split out across the following sections:

- Output-based specification;
- Detail on the procurement strategy for appointment of construction contractor;
- Achieving cost certainty; and
- Overview of the construction contract type and management.

1.2. Output-based specification

1.2.1. The scheme consists of the following outputs:

- 3.6km of new highway, consisting of a single carriageway road (one lane in each direction) between the A49 Ross Road at the roundabout with Rotherwas Access Road and the A465 / B4349 Clehonger Road junction;
- A new structure to facilitate crossing over the existing Hereford to Newport railway line;
- A fourth arm adding to the existing A49 roundabout; and
- A new A465 roundabout to enable the new link road to tie in with the A465. The road then extends from the proposed roundabout on the A465 creating a new link to the B4349 (Clehonger Road).

1.3. Procurement strategy

1.3.1. A key element of the procurement strategy for Herefordshire was first to determine how the scheme could be best procured to meet the Council's requirements of value for money and meeting the Council's delivery programme commitments.

1.3.2. Procurement in the local government public sector in England is governed by the Procurement Act 2023, which came into force on 24th February 2025. All works contracts of more than £5,372,609 in value (such as the Phase One scheme) are subject to the public sector tendering rules meaning that they must be advertised on Find a Tender (the Government's e-tender portal) and subject to an open tender procedure. This tender notice is published to inform potential suppliers about the contract opportunity and remains open for 5 weeks prior to the issue of the tender documents.

1.3.3. AECOM were procured in January 2025 to provide professional services support to Herefordshire. This included undertaking a review of Phase One to identify those areas of design that need to be developed further so that planning consent conditions and current design standards can be met and third-party approvals issued in order for the scheme to be constructed.

1.3.4. Following this, the Council had two options for procuring the resources required to progress the scheme to construction:

- Utilise the Professional Services support it had procured through AECOM to undertake the design to completion and thereafter procure a contractor to price a bid on a known design; or
- Procure a Design and Build contract, enabling a contractor to undertake responsibility for the design and be able to undertake preparation for construction in parallel.

1.3.5. A Design and Build contract was identified as being the optimal procurement strategy for the following reasons:

- **Design Changes and Third-Party Interface**

  Given the number of material changes required to update the design, along with the significant engagement required with third parties including Network Rail and National Highways in finalising the design of the railway bridge and the roundabout junction with the A49, it was considered prudent to follow the route of a Design and Build contract. This would enable the Council to bring the contractor on board at a much earlier stage, and enable design modifications and third-party agreements to be undertaken and secured in parallel with construction preparations.

  Having the contractor engaged at the design stage also increases certainty of the proposals and is less likely to lead to changes arising from buildability or construction practicalities at a later date and therefore increases certainty on both programme and costs.

- **Value Engineering**

  It is typical for an element of value engineering design or redesign to improve buildability to be undertaken by a contractor during any construction tender and so having a contractor on board for Early Contractor Involvement (ECI) in the designs is likely to reduce the overall design programme and reduce rework which will in turn reduce costs to the council.

  It was also anticipated that a Design and Build approach would be cheaper than separate design and construction routes as typically there is an element of redesign during construction tender process to value engineer schemes to a competitive or affordable price.

- **Temporary Works**

  A Design and Build approach enables discussions with third-parties to include temporary works (i.e. those works required to enable the construction such as haul roads to enable access along the length of the works site and compounds) at the same time as permanent works so that sufficient detail is in place in a timely manner to enable approvals at an earlier stage. This also provides the confidence to submit the temporary works for planning consent (where required) at an earlier stage.

Procurement Routes

1.3.6. There were two procurement routes available to Herefordshire Council. Either through an open tender process or utilise a relevant framework provider to procure a contractor to deliver the next stage of the scheme.

Open Tender Route

1.3.7. An open tender process would typically introduce a pre-qualification questionnaire (PQQ) to limit the number of companies that tender for the works and remove any speculative bids from organisations not suited to or capable to deliver the works. A PQQ process typically takes six weeks, with a further six weeks for assessment and confirmation of those to be invited to tender.

1.3.8. The council would then invite a small number of providers that meet the minimum threshold to progress to a formal bid stage. A typical tender period for a scheme of this size would be 16 weeks, with a further 8 weeks for assessment and contract award, with internal governance decision extending this process depending on the timeliness of the decision within the decision-making cycle.

1.3.9. The contractor would require approximately 6 months to close out design issues, sufficient to commence work on site, prior to a 3-month period to mobilise construction works.

1.3.10. Given that the tender process was expected to commence in September 2025, the overall duration from the publishing tender notice to commencing works on site would be approximately 79 weeks. This would take a construction start date to March 2027; 3 months later than the planned start date of December 2026.

1.3.11. A summary of the advantages and disadvantages of this route are set out in Table 1-1.

Table 1-1: Open Tender Route - Advantages & Disadvantages

Advantages
Competition: Open procedures allow for a wider range of suppliers to bid, increasing competition and potentially leading to lower tender prices.
Transparency: It promotes transparency in the procurement process, as any eligible suppliers can participate.
Flexibility: It can be more flexible, allowing for adjustments in the process for specific projects.
Cost: There are no additional costs to the council of utilising an open tender procedure.
Disadvantages
Time-Consuming: The process can be lengthy and labour-intensive, requiring significant administrative effort.
Risk of Inexperienced Suppliers: Open procedures may attract bids from suppliers who lack the necessary experience or qualifications, increasing the risk of non-compliance which is why a PQQ phase becomes essential for complex projects.
Higher Evaluation Costs: Evaluating a large number of bids can be costly and time-consuming through each stage of the tender process. The council would need to have the support of a professional services consultant like AECOM to assist in valuation due to a lack of internal expertise and so would need to fund the cost of their support during the additional SQ stage.
Cost/Programme disputes: As there is no long-term contractual relationship under an open tender there is a greater likelihood of the appointed contractor behaving more adversarial, leading to cost/programme disputes.

Framework Route

1.3.12. A procurement framework is a contract with a list of pre-vetted providers that enables an authority to access the market without the need for a PQQ stage. Frameworks are procured competitively such that the contractors who have secured a place on the framework have already demonstrated to the framework owner their ability to deliver quality and cost competitiveness. This ensures that the competitiveness of contractors has been assessed to enable them to secure a place on the framework A framework is managed by a third party and often has a standard form of contract that has to be followed and typically will set a charge for access to the framework of a small percentage of the contract value.

1.3.13. There are several potential existing public procurement frameworks that allow Herefordshire Council to use them to appoint a design & build contractor. These frameworks include SCAPE, PAGABO, Midlands Highways Alliance (MHA), Crown Commercial Services and the Procure Partnerships framework.

1.3.14. Frameworks often have value and geographic lots with pre-qualified contractors on the relevant frameworks. There are often between four to nine contractors on the major value frameworks with contractors being pre-qualified to conduct work as a direct appointment or subject to mini competition.

1.3.15. As there is no PQQ stage to the tendering process a saving in duration of 17 weeks is made against open tender. Thus, from the tender process commencing in September 2025, this would mean that site works could commence during December 2026.

1.3.16. A summary of the advantages and disadvantages of the framework route are set out in Table 1-2.

Table 1-2: Framework Route - Advantages & Disadvantages

Advantages
Time Saving: Frameworks simplify the procurement process by pre-selecting suppliers, reducing the need for placing adverts under Find a Tender and undertaking a Pre-Qualification Questionnaire (PPQ) to reduce the number of suppliers taken to full tender, therefore saving valuable programme time. The framework suppliers have already been through a rigorous selection process to get on the respective framework and are compliant with the regulations which the council is required to follow.
Reduction in Disputes: Under a framework the contractors generally have their behaviour and attitude to minimising disputes monitored using Key Performance Indicators (KPIs). This is to reward non-adversarial and collaborative behaviours with the contractors' who exhibit the right behaviours seeing the most opportunities through the framework. This typically leads to less contractual arguments with contractor's wishing to avoid disputes.
Legal Costs: As the framework terms and conditions are pre-agreed there is no need to incur significant additional legal costs to iteratively agree the contract terms and conditions
Quality Assurance: Frameworks often include quality standards and performance criteria, ensuring a consistent level of service. Framework suppliers are incentivised to provide high level service by the potential to get further work through the framework.
Cost Savings and Certainty: They can lead to savings through saving time by avoiding the need to evaluate multiple PQQs and contractual disputes. Framework procurement process typically involves the pricing of model schemes, which when combined with the performance management plan should provide cost and programme certainty.
Stability and Predictability: Framework agreements provide a stable and predictable procurement process, with contractor performance and behaviours being closely monitored by the framework administrators.
ECI: Mechanism to get Early Contractor Involvement appointment in place quickly to benefit from early construction advice. Opportunity to talk to framework contractors during procurement process to assist in the identification of location specific issues and problem areas, such as railway crossing and A49 junction.
Disadvantages
Reduced Competition: Framework agreements can limit competition to an extent as only preselected suppliers can participate. The low number of suppliers on some frameworks could potentially result in a low number of tender bids and less competition potentially leading to higher costs, although there is not necessarily any evidence that this is the case.
Flexibility Limitations: They may lack flexibility in some situations, making it harder to adapt to changing needs by modifying existing contracts.
Benchmarking: The age of some frameworks may require cost benchmarking against other schemes due to the price variation caused by the economy, Brexit, Ukraine, and the potential to be impacted by tariffs. Some frameworks have already undertaken this exercise on behalf of clients but some would require the council to undertake its own benchmarking in assessing tender submissions and compensation events to ensure that they align with framework rates.

Route Selected

1.3.17. The framework route was seen as being most beneficial as this enabled the Council to get to market quicker to a selection of contractors which the Council can have confidence in delivering the works required. In order to mitigate any potential reduction in value that may be perceived through a framework rather than an open tender it was recommended that procurement be undertaken by a mini-competition to ensure a further element of competitive tendering.

1.3.18. Supporting the council's approach, the recent report published by the Competition and Markets authority into the Civil Engineering Sector[1] (May 2026) provides a series of recommendations on how to improve outcomes in the market in-terms of delivering efficiencies, a key one (Recommendation 11) is for the use of frameworks for procurement, with the overall aim of reducing costs, delivery times and overruns.

Framework Selection

1.3.19. Herefordshire Council assessed the following frameworks for the suitability of procuring a Design & Build contractor for the Phase 1 scheme:

- Crown Commercial Services;
- Midlands Highways Alliance (MHA);
- SCAPE;
- PAGABO; and the
- Procure Partnerships framework

1.3.20. As part of this assessment discussions were held with each of the framework managers to gather evidence for their suitability. These discussions identified that:

- The SCAPE framework which only has Balfour Beatty on the framework and therefore does not have a mini competition option available.
- The Crown Commercial Services framework does not have a regional based lot and therefore contractors on that framework may not have a regional presence so may potentially have less existing relationships with the local supply chain to enable them to be utilised effectively.
- The Midlands Highways Alliance highlighted that their framework would require additional contract clauses to support running a mini competition for a D&B contract.

1.3.21. Of the remaining frameworks, both PAGABO and Procure Partnerships could support running a mini-competition for a D&B contract and had suitable regional contractors.

1.3.22. The decision was taken to use the PAGABO Major Works framework as this contained six suppliers (plus 2 reserve suppliers), whereas Procure Partnerships only had four suppliers. Herefordshire Council considered that they were more likely to have a competitive procurement by utilising the framework with the most suppliers.

1.3.23. Following the selection of the PAGABO framework, Herefordshire Council undertook a soft market engagement with all of the contractors on this framework. This included inviting them to meetings where the council provided a presentation on the scheme and gave contractors the opportunity to ask questions.

[1] https://assets.publishing.service.gov.uk/media/6a0ea16d9c0df135284ec751/Final_Report_.pdf

1.3.24. The council asked all suppliers on the framework to express their interest in producing a competitive bid for constructing the scheme. The council received expressions from Graham's, Octavius and Galliford Try. The council also undertook considerable engagement with Kier, who ultimately decided not to bid due to having too many other commitments.

1.3.25. During the mini-competition the council held an on-site session with the prospective contractors. This enabled each contractor to walk the length of the scheme alongside HC officers which also provided the opportunity for the contractors to ask further questions and gain an understanding of the site topography and constraints that will be involved when delivering the scheme.

1.3.26. All of this activity meant that the council had three serious and capable contractors who were bidding competitively to deliver the scheme.

Procurement Outcome

1.3.27. Based on the above considerations, the works are being procured under a Two Stage Design & Build process. Stage One resulted in an Award for a Pre-Construction Services Agreement (PCSA) to John Graham Construction Ltd (Graham). Graham are working with the Council under the PCSA, which will involve the contractor finalising the designs, resolving planning conditions, seeking temporary works planning applications and gaining approvals from Network Rail and National Highways as well as confirming the construction costs.

1.3.28. Stage two will see the award of the construction contract. This FBC setting out the value for money assessment of the scheme will be published and considered by Cabinet in July 2026 ahead of the potential decision to award the construction element of the procurement.

1.3.29. A further competition process was conducted through the Pagabo Civils and Infrastructure (Lot 4 – Road Transport, Midlands) framework (Reference AVP-QEF-1001), with tender documents being issued to the three contractors who expressed an interest in the further competition on 24th October 2025. Three compliant tenders were received from national contractors with experience in the delivery of major transport infrastructure schemes in early January and a tender evaluation process was undertaken resulting in the decision to appoint Graham.

1.3.30. A Procurement Evaluation Report was prepared in February 2026 by Herefordshire Council which documented the procurement process and agreed approach.

1.4. Cost Certainty

1.4.1. It is important that the project is delivered as close as possible to its estimated budget.

1.4.2. The council is aware there is a history, nationally, of major infrastructure projects overspending. Herefordshire is determined that lessons from other scheme are learned and that every effort is made to reduce risks and to gain cost certainty before the construction contract is awarded.

1.4.3. The government's Infrastructure and Projects authority has produced best practice guidance on cost estimating[2]. This guidance highlights that robust planning, design and preparation in the early stages of a project's lifecycle are essential in driving

[2] https://assets.publishing.service.gov.uk/media/6050c9528fa8f55d324b0c84/IPA_Cost_Estimating_Guidance.pdf

successful delivery, going on to highlight that ECI both supports and enables better cost estimates.

1.4.4. Early contractor involvement has been shown to uncover costs risks and enable better programme planning to control or reduce costs. Finalising design through an ECI process is a proven method of improving cost certainty.

1.4.5. The procurement strategy adopted for the PCSA and the contract approach help to ensure that the project is delivered as close as possible to its estimated cost. As part of Graham's tender response, a detailed cost estimate was prepared based on a Bill of Quantity. The cost estimate drew upon a combination of the previous design for the scheme and recommended updates identified by AECOM to ensure alignment with latest design standards and requirements. This also included calculation of all preliminaries associated with the scheme including mobilisation/demobilisation, management and supervision, site setup, traffic management etc.

1.4.6. In preparing this estimate, their Estimating Director and Senior Estimator collaborated with their site operations team and the supply chain (including AtkinsRealis as their design partner) to produce a detailed cost estimate for construction of the scheme, using the Causeway Estimating Software. The cost estimate followed a first principles approach and was governed by an Estimating Checklist to ensure a comprehensive approach to cost calculation. They also benchmarked their estimate for this project against similar recently completed projects to gauge accuracy.

1.4.7. Throughout the PCSA period, Graham are undertaking a Value Engineering (VE) exercise to identify cost reduction opportunities, acknowledging the importance of this process to ensure that the scheme costs remain affordable within the available budgets. Due to a range of macro-economic factors, it is also likely that certain costs may also increase prior to scheme completion. To counter this, a suitable level of inflation and contingency has been added to the scheme costs as detailed in the Financial Dimension.

1.5. Contract Type and Management

1.5.1. The Form of Contract for the PCSA is NEC4 ECI and the Form of Contract for the Works is NEC4 Option A with amendments. The contract covers the PCSA stage over an 11 month period. The two stage ECI approach will enable The Contractor's Designer to complete the due diligence, update the design and obtain technical approvals in parallel with other tasks such as stakeholder engagement and mobilisation. It will also enable the contractor to start work on site before some detailed aspects of the design have been completed.

1.5.2. The contract has been reviewed by Herefordshire Council's legal team and will be managed by the Council's Project Manager for the scheme. AECOM will continue to work with Herefordshire Council as its professional service provider during the development of the appointed contractor's design to assist Herefordshire Council in meeting the scheme requirements.

1.5.3. Further detail on the governance arrangements for the management of the delivery of the scheme are set out in the Management Dimension.

2. Management Case

2.1. Overview

2.1.1. The Management Dimension sets out how the Phase One element of the scheme will be governed, managed, delivered and monitored to enable successful implementation and realisation of benefits. Key elements which this Dimension will report on include:

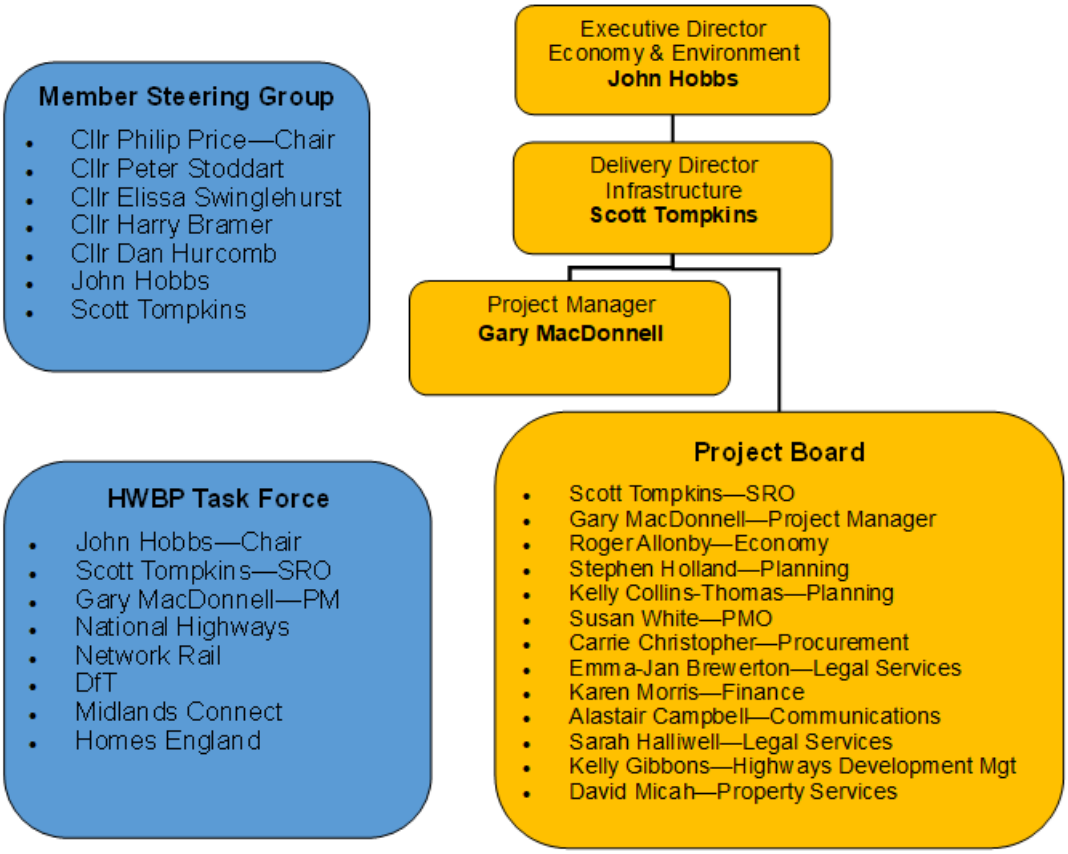
- Capability and resources, including Herefordshire's governance arrangements for the scheme;
- A detailed programme;
- Detail on the Council's risk management approach and risk allocation;
- Latest planning position, including evidence of planning permission, status of pre-construction planning conditions and enabling work applications;
- Evidence of design compliance with latest legislative and regulatory requirements;
- Latest position relating to consents, approvals and interfaces, including with National Highways and Network Rail;
- Land acquisition and detail on the CPO processes which are being followed;
- Approach to stakeholder engagement;
- Detail on the approach to carbon management and BNG;
- Outline of Herefordshire Council's maintenance strategy for the scheme;
- Approach to benefits management and monitoring and evaluation;
- Approach to lessons management; and
- Details of the Social Value Plan

2.2. Governance Arrangements

Project Governance

2.2.1. The governance structure for the delivery of the Phase One scheme is set out in Figure 1-1 below.

Figure 1-1: Hereford Western Bypass - Phase One - Governance Structure



2.2.2. The primary governance arrangements are carried out through the member led Steering Group and Officer group Project Board, outlined below.

2.2.3. The Member Steering Group includes six Cabinet members and is chaired by Cllr Philip Price – Cabinet Member for Transport and Infrastructure. The Group meets monthly, with an agenda, reports and minutes recorded. Steering Group meetings are key in keeping elected members updated on progress and to providing strategic direction to the project. Key strategic risks are regularly reviewed with Steering Group and mitigation measures or corrective actions discussed.

2.2.4. The Project Board is chaired by Scott Tompkins as the Senior Responsible Officer and includes a range of directors, managers and project management staff, from finance, planning, property services, procurement, legal and communications departments. As outlined in the Board's Terms of Reference, it is "Accountable for the delivery of the Project, ensuring the project meets its strategic purpose, delivering high quality value for money outcomes for the Council and follows the Council's applied Governance model for project management". All aspects of the project are discussed at the Project Board as necessary. The Project Board also meets monthly with an agenda, reports and minutes recorded.

2.2.5. Project Board considers and makes key operational decisions or reviews the decisions being made by the Project Manager. Key strategic risks are reviewed at Project Board meetings as well as any operational risks that have been highlighted or escalated by the Project Manager or by any of the consultants or contractors working on the project.

2.2.6. Decisions made by the Project Board are recorded by the Project Manager in the minutes of the meetings as well on record of decisions forms. The Council's Verto

project management system is used to track the project and to record any major changes to project scope.

2.2.7. The Task Force was set up to ensure that key partners such as National Highways, DfT, Network Rail, Midlands Connect, Homes England and Transport for Wales are kept informed and are supportive of the bypass project. The Task Force meets on a quarterly basis.

Capacity and capability of project and technical teams

2.2.8. Herefordshire have a core team of officers tasked with delivering the project shown in Table 1-4.

Table 1-3: Core Team Offices

Name	Role
Scott Tompkins	**Senior Responsible Officer:** The SRO's role is to facilitate the successful delivery of the Project. This may take the form of helping to procure key resources for the project or intervening to resolve disputes or issues with other areas of council activity. The SRO will also lead the management and delivery teams and provides the interface with the Project Board and the wider council team. They will approve appointment (as required) of external specialist teams.
Gary MacDonnell	**Project Manager:** The role of the Project Manager is to: • Lead and coordinate the project team and its work streams; • Procure consultants and contractors; • Manage the construction and professional services contracts; • Prepare and report project budgets; • Manage project risks and issues; • Report to, and receive feedback from, the SRO • Provide expert advice and recommendations to the project board when engineering or cost decisions are required; and • Produce periodic progress reports to relevant Council committees. • Project administration including recording of decisions, minutes and agendas.

John Hobbs	**Corporate Director:** The Corporate Director plays a strategic leadership and assurance role in delivering the Phase One scheme.

2.2.9. These individuals have been appointed in their roles partly on the basis that they have experience of delivering infrastructure projects and new highways schemes. Appointments made have been by Senior Leaders with delivering the Western Bypass a clear corporate priority reflected in these appointments. CV's provided in Appendix L.

2.2.10. AECOM were appointed to be the Council's technical partner to move the project into delivery phases. AECOM have an outstanding reputation in providing the full range of consultancy services and the individuals assigned to the bypass project have significant previous experience . Alongside Herefordshire's land agent and legal consultants AECOM have provided necessary services to take the project from the point of commencement through to the Design & Build phase. AECOM will also act as the Council's professional advisors through the construction delivery phases (to be confirmed at the time of this FBC submission).

2.2.11. Graham and AtkinsRealis were appointed following a competitive tender process. Following the Cabinet decision to use a national construction framework to procure a two-stage contract for the construction of Phase One of the Western Bypass, the Pagabo Civils framework (a UK-based company specialising in local government construction procurement) was used to undertake a procurement. Three compliant tenders were received from national contractors with experience in the delivery of major transport infrastructure schemes in early January 2026 and a tender evaluation process was undertaken resulting in this decision.

2.2.12. The procurement is following a two-stage process with Stage One being the pre-construction services agreement which will see the contractor finalise the designs, resolve planning conditions, seek temporary works planning applications and gain approvals from Network Rail and National Highways as well as confirm the construction costs.

2.2.13. Stage Two will see the award of the construction contract and will be undertaken in early 2027 once Graham's has completed the pre-construction design and preparations works.

2.2.14. It is clear that Herefordshire Council has established a strong and appropriately resourced technical project team, supported by clear governance, defined roles and responsibilities, and robust project management controls. These arrangements provide effective oversight, enable timely identification and management of risks and issues, and support informed, evidence-based decisions, giving confidence that the Phase One element of the scheme is being managed effectively and in accordance with good practice.

2.3. Project Programme

Key Project Milestones

2.3.1. The key dates and milestones for Phase One delivery are set out in Table 1-4 and broken down by pre-construction, construction and post construction activities. Construction of the scheme is expected to commence in December 2026 and will follow an 18-month delivery programme. The full project programme prepared by Graham can be found in Appendix M.

Table 1-4: Key Project Milestones

Date	Milestone
February 2026	Appointment of PCSA contractor
Mar – Sept 2026	Ecology surveys
April 2026	Cabinet decision to agree FBC decision criteria
June 2026	Phase One FBC published
June – Nov 2026	Baseline data collection (to inform BMEP)
July 2026	Scrutiny review of FBC
July 2026	Submit supplementary planning applications for Phase One
August 2026	Completion of all land transactions
August 2026	Side Roads Order processed
September 2026	Cabinet review of FBC and decision to release construction budget for the scheme
September 2026	Determination on supplementary planning applications
September 2026	Discharge of all planning conditions
September 2026	Notice to proceed
October 2026	Archaeologist appointed for Phase One earthworks
October 2026	Site set up commences
November 2026	Public Information Exhibition
December 2026	Construction of Phase One commences
March 2027	BMEP Baseline Report completed
September 2028	Phase One opens to traffic
Sep 2029 – Dec 2029	Year 1 post-opening data collection
March 2030	Year 1 post-opening report completed
Sep 2031 – Dec 2031	Year 3 post-opening data collection
March 2032	Year 3 post-opening report completed

2.4. Risk Management

Approach

2.4.1. The management of risk and uncertainty will be key to the successful delivery of the project, as it will identify threats to project delivery and enable effective risk management actions to be assigned. An effective risk management process requires:

- A continuous approach to risk management;
- A thorough approach to risk identification;
- Active risk avoidance and mitigation;

- Effective communication of risks throughout the project team and an escalation process in place to ensure that risks and issues can be managed at an appropriate level of authority dependent upon their severity; and
- Delivery of the scheme objectives to budget, programme and quality.

Identifying Risks

2.4.2. A bespoke risk register has been developed detailing scheme risks (including both pre-construction and construction risks) and assigning appropriate categorisation of risk (Appendix N), including cost/programme impact and likelihood, and ownership. This is a 'live' document throughout the scheme development and delivery process to ensure a thorough and dynamic understanding of risks. Where appropriate, the approach to risk management is to eliminate the risk or prepare relevant mitigation measures to manage and reduce the impact of the risk.

2.4.3. Six of the top scheme risks and their associated mitigation measures are documented in Table 1-5.

Table 1-5: Key Project Risks

Key Risks	Proposed Mitigation
Delay caused by any impedance to obtaining planning consent for the supplementary planning application.	Provide technical support and information to the Client. Site clearance during PCSA stage. AtkinsRealis to continue from Tender Stage work and keep design within constraints
The 2018 Bill of Quantity/Activity Schedule does not match the 2018 Scope and/or quantities calculated in PCSA stage and/or measured quantities differ from those developed in PCSA stage	Experienced team involved in the PCSA stage. Continuity of the team. Raise TQs to resolve. Opportunity for optimisation of Earthworks Material Strategy to reduce imported fill.
Pricing volatility occurs between tender submission and contract award	Make an allowance for escalation based on feedback from supply chain and review of performance of current indices
Potential for delays and design changes resulting from requirement to obtain National Highways Technical approval and legal agreement at tie-in with A49.	There are some departures from standard on the new leg of the A49 roundabout (entry deflection criteria and exit width). These should be able to be resolved with minimal effort. Note this is a pre-commencement condition for this section and discharge of planning condition is required before temporary accesses to site from A49 can be approve
Key Herefordshire staff leave organisation or are absent due to sickness causing delay to programme, missing key deadlines or project inefficiencies	Provide appropriate organisational resilience and succession planning
Potential for CPO to be required for land acquisition resulting in design change; delays to construction and potential requirement for a public inquiry.	Bruton Knowles currently completing negotiations with land owners.

Managing Risks

2.4.4. The Risk Register includes mitigation measures which will need to be implemented in order to manage and reduce the likelihood and impact of the risks identified.

2.4.5. The Risk Register is kept as a live document and updated in line with the project's governance arrangements, with appropriate escalation of key risks to senior management and the Project Board as required.

2.4.6. The project manager coordinates regular risk register reviews whereby risks are identified through a collaborative process where the project team agree the nature of the risk, its likelihood and potential impact on the project. The project team decide at the point of identification how the risk will be managed (i.e. tolerated, managed, mitigated etc) and where possible detail risk mitigations. In terms of risk allocation, all risks have an owner responsible for managing that risk in the manner agreed.

2.4.7. Additionally, high level strategic risks are reviewed with Cabinet members on a monthly basis through the project Steering Group and with Risk Review reports that are provided for Cabinet briefing. These reports provide a recap of any changes in risk and details of mitigations that have been put in place.

2.4.8. In terms of financial risks and budget monitoring for development cost expenditure, performance against the approved budget is monitored through a formal cost baseline, regular capture of actual expenditure, and ongoing forecasting of outturn costs. Monthly reports compare budget, actual spend and forecast outturn. This information is reviewed through established governance arrangements, with escalation should there be any major concerns raised.

Risk Allocation and Transfer

2.4.9. It is anticipated that the main risks will take place during the construction phase of the scheme, and these can be managed by ensuring risks are transferred to the most appropriate organisation to be managed in the most effective way.

2.4.10. The collaborative nature of working employed between Herefordshire Council and Graham as the Design & Build contractor helps to manage and share risk effectively. The table below outlines the potential allocation of risk.

Table 1-6: Risk Allocation

Risk Category	Potential Allocation		
	Herefordshire Council	Graham Construction	Shared
Design Risk			X
Construction Risk			X
Availability & Performance Risk			X
Operating Risk	X		
Legislative Risk	X		
Control Risk			X
Termination Risks	X		
Financing Risks			X

Other Project Risks			X

Quantified Risk

2.4.11. TAG Unit A1.2 requires that where possible all project related risks that may impact on the scheme costs should be identified and quantified in a Quantified Risk Assessment (QRA), to produce a risk-adjusted cost estimate. In this regard, a QRA has been carried out based on engagement between Herefordshire Council, AECOM and Graham to determine implications of each risk on the cost of the scheme and the programme, based on a minimum, maximum and most likely scale.

2.4.12. Outputs from this assessment have been input to the '@Risk' risk management software to determine P(20), P(50) and P(80) and P(mean) monetised risk values outputs. P(80) means that there is an 80% probability that the cost of risks will be less than or equal to this value, the P(mean) value is used within the scheme appraisal, which has enabled the costs in the Economic and Financial Dimensions to be calculated based on a more robust risk-adjusted estimate.

2.5. Planning Status

2.5.1. Planning application ref. P151314/F was submitted on behalf of Herefordshire Council on 8th May 2015 for the construction of a "*new single carriageway (Southern Link Road) and associated works*". As Herefordshire Council was the applicant as well as the determining authority, it was undertaken in accordance with Regulation 3 of the Town and Country Planning General Regulations (1992).

2.5.2. The Scheme proposed under planning application ref. P151314/F would provide a new single carriageway (two lanes) road between the A49 Ross Road at the roundabout with Rotherwas Access Road and the A465 / B4349 Clehonger Road junction. The road is approximately 3.6 km in length.

2.5.3. From the A49, the road extends westwards from a fourth arm to the roundabout, through Grafton Wood and then continuing over Grafton Lane at Withy Brook before crossing above the existing Hereford to Newport railway line. After this it passes underneath Haywood Lane, straightening up and heading in a north westerly direction to join with the A465.

2.5.4. The planning application was determined at planning committee on 6th June 2016. Committee resolved to grant planning permission and the decision notice was dated 18th July 2016. Planning permission was granted subject to 21 conditions, which are set out as part of the decision notice for the application.

2.5.5. This included a number of pre-commencement planning conditions. For a planning permission to be implemented lawfully, all necessary pre-commencement planning conditions must be discharged prior to construction work commencing on site.

2.5.6. A non-material amendment application (reference P191223/AM) relating to conditions 17 Highways (design and construction details for junction between SLR and A49(T) and 18 Highways (legal agreement for work on the A49 trunk road) of planning permission P151314/F was approved on 27 June 2019. The non-material amendment was with regards to the pre-commencement requirement for the further design details pertaining to the section of the link road at the junction of the A49 trunk road, this amendment allowed the commencement of development prior to the discharge of condition 17 and 18.

2.5.7. The pre-commencement planning conditions associated with application P151314/F were discharged, with conditions 6, 7 and 8 partially discharged referring to the approximate 150 m section of SLR within Herefordshire ownership only. This

allowed a construction start to take place only that section only. A nominal commencement of works was undertaken between 1 July 2019 and 18 July 2019 to secure the planning permission before it expired and confirmation from the planning case officer was obtained to clarify that the consent had been lawfully implemented.

2.5.8. There were 4 ‘compliance’ conditions associated with the planning consent, including the standard expiration condition. Condition 1 “The development shall be begun before the expiration of three years from the date of this permission”. This would mean that the planning permission would have expired on 18th July 2019 if construction works had not commenced by that date. However, as nominal commencement of works took place between 1st July – 18th July 2019 (through the construction of a small ‘strip’ of scheme), this condition has been satisfied, and the planning permission remains valid.

2.5.9. It was therefore established that planning application ref. P151314/F has been lawfully implemented and works to construct the scheme could proceed in accordance with the approved plans.

2.5.10. Further to the original consent for the scheme (ref. P151314/F) a second full planning application (reference P182314/CD3) was submitted for a series of enabling works required for the delivery of the scheme following further design work. The works include; proposed new field accesses, maintenance tracks to serve the scheme, revised drainage arrangement including revised storage provisions, drainage ditches, outfall pipes, replacement culverts, a new bridleway and a temporary haul road. All of these works were located outside of the original scheme red line boundary and so were submitted as a separate planning application. The application was validated by Herefordshire Council on 2nd July 2018 and gained consent on 2nd October 2018.

2.5.11. Appended to this consent was a series of 16 conditions, of which condition numbers: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 16 are prior to commencement conditions. These conditions require the submission of further detail to the council for formal review and discharge, prior to works starting on site. A planning application (reference: 191645) for the discharge of details reserved by conditions 3 and 4 was submitted to the Council in May 2019, this application was later withdrawn prior to determination. There is no record of any other applications made to discharge any of the other pre-commencement conditions and as the consent contained a 3-year expiry condition, it is now considered expired and can no longer be implemented.

2.5.12. The consent for the enabling work expired prior to the commencement of the development; to pursue these works a revised planning application for these works would be required. This would allow the works to be formally considered by Herefordshire Planning Department.

2.5.13. Due to the time between the previous set of environmental surveys and reports it is considered that revised surveys and reports would be required to support a revised planning application submission. Usually, ecological reports remain valid for a period of two years before resurveying would be required. The planning application for the enabling works was submitted in 2018 which implies the survey data used to inform the supporting material will be well over two years old. Similarly, whilst a flood risk assessment was not prepared to support the previous application for enabling works, the Environment Agency flood maps for planning have been revised since 2018 and a revised FRA would be required to consider the flood risk to the application site(s).

2.5.14. Since April 2024 Biodiversity Net Gain (BNG) has become a mandatory requirement for most developments under the Town and Country Planning Act

1990. Applicants are required to show a measurable improvement to habitat for wildlife, resulting in a 10% net gain in biodiversity units compared to the pre-development state. BNG can be achieved through a combination of on-site habitat enhancement or creation, off-site habitat creation or enhancement, or through the purchase of statutory credits, though this is considered a last resort.

2.5.15. As the scheme secured planning consent prior to the April 2024 regulations BNG is not required for the full scheme. However, BNG does apply to any new supplementary planning applications related to the scheme.

2.5.16. Development that is considered exempt from BNG comprises: variations of a planning permission; development that does not impact a priority habitat and impacts less than 25 m2 of on-site habitat / 5 m of on-site linear habitats (hedgerows); householder applications; self-build residential schemes; a biodiversity gain site; HS2 development; or urgent crown development. The enabling works do not fall into any of these exemption categories and as such, it is considered that a BNG assessment only will be required to support any supplementary applications. A new planning consent/s is therefore required for this element of the design.

2.5.17. Furthermore, given the length of time that has passed since the original design was completed, some small amendments to the design have been required to ensure compliance with latest legislative and regulatory requirements (whilst staying within the approved red line boundary). This is set out in more detail in the following section.

2.5.18. In summary the position of the scheme is clear. The original planning consent for the scheme is still valid and defines the scheme that will be delivered. There are still a small number of planning requirements that still require to be discharged to enable construction work to commence, and there is a plan in place to achieve this. The council is planning to submit two supplementary planning applications and one temporary works application to enable the delivery of the scheme.

2.6. Scheme Design

2.6.1. Detailed design for Phase One of the scheme was completed in 2018, with planning permission being granted in July 2016 for the development of a “new single carriageway and associated works” on the land between the “existing roundabout junction of A49(T) and B4399 to a new roundabout with the A465 then joining the B4349”.

2.6.2. The design standard used for the original design was the Design Manual for Roads and Bridges (DMRB). The DMRB contains information about current design standards relating to the design, assessment and operation of motorway and all-purpose trunk roads in the United Kingdom. The standards that would have been used to design the Phase One scheme were superseded in 2020 by a new suite of documents to have a clear consistent format.

2.6.3. The alignment of Phase One was designed in accordance with TD9/93 ‘Highway Link Design’ (Volume 6, Section 1, Part 1, DMRB, Highways Agency, February 2002), however this standard has been superseded by the latest 2025 DMRB update.

2.6.4. In August 2025, AECOM produced a Planning Application and Design Review report to consider what changes may need to be made to the 2018 design to comply with latest design standards, along with any significant gaps or deficiencies in the original design information. The review included consideration of key design

elements such as highways, geotechnics, structures, drainage and planning. This report is set out in Appendix O.

2.6.5. As the appointed contractor for the scheme, Graham, along with their design partner AtkinsRealis have now taken ownership of updating the design through the PCSA stage. This also includes a Value Engineering (VE) period to consider and develop VE ideas to be implemented as part of the updated scheme design.

2.7. Third Party Consents and Approvals

2.7.1. Significant engagement with a range of third parties including National Highways, Network Rail and Natural England has been required in the progression of the Phase One scheme due to the significant interface that the scheme will have with infrastructure associated with these third parties. Whilst the scheme had previously been fully designed to a level that had received approval in principle by Network Rail and National Highways, the standards and approval processes utilised by both organisations have moved on and therefore there has been a need to resubmit the scheme for formal approval.

2.7.2. Herefordshire Council have had positive engagement with National Highways, Network Rail and Natural England and the current scheme programme has been shared with all of them. The current status of these engagements is described in the following sections.

National Highways

2.7.3. In the case of National Highways, liaison has been required to agree their technical and design requirements to ensure that the new road is designed and built to adoptable standards in the event of the wider Hereford Western Bypass becoming the trunk road. Engagement has also been required in relation to the tie-in of the eastern extent of the scheme with National Highways' Strategic Road Network (SRN) at the A49 / B4399 junction.

2.7.4. At the time of the FBC submission, the technical approval was yet to be signed off with National Highways, although through the adoption of latest design standards, this should help to derisk the approvals required.

Network Rail

2.7.5. For Network Rail, a new structure is required in the form of 32.9m single span, integral steel composite deck, spanning over the railway line. This will include a 4.5m maintenance access track to be provided on either side of the Network Rail land boundary. In line with DMRB standards, an Agreement in Principle (AiP) document is required for this structure and to acquire the airspace rights over the railway.

2.7.6. Detailed discussions with Network Rail have so far resulted in agreement over the following;

- Minimum headroom under the bridge
- Lateral clearances
- Fencing requirements
- Parapet types and finishes
- Construction methodology to minimise disruption to rail operations
- Impacts on Network Rail signalling and telecommunications infrastructure.

Natural England

2.7.7. The presence of the Hazel Dormouse and Great Crested Newt has been confirmed through surveys that have been conducted on the site of the proposed scheme. Both of these species are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and under the Wildlife and Countryside Act 1981.

2.7.8. European Protected Species Mitigation Licence (EPSML) applications are in the process of being drafted and will be sent to Natural England for approval. Additional EPSMLs or species licences may be required dependant on the results of on-going surveys, and will be applied for from Natural England accordingly.

Statutory Undertakers

2.7.9. Statutory undertaker surveys have been carried out, with four utility providers expected to be affected by the scheme as listed below:

- Dwr Cymru / Welsh Water
- Western Power Distribution
- Cadent
- BT Openreach

2.7.10. All information relating to the status of the statutory undertaker searches has been shared with Graham as the contractor for the scheme, who are now responsible for progressing the statutory undertaker diversions and associated liaison. It should be noted that private water mains / land drains were not included within the original utilities searches and Graham / Bruton Knowles as the land agent will need to establish requirements as part of the landowner accommodation works and discussions.

2.8. Land Acquisition

2.8.1. The Phase One scheme requires the acquisition of much of the land along its route, with only one parcel of land outside of the public highway currently within the council's ownership (approximately 10-15% of the total land required). The land required for the construction of the scheme is largely agricultural land.

2.8.2. The Council has been prioritising acquiring land voluntarily by negotiation through discussions with landowners, which has been led by Bruton Knowles as the Council's appointed property and land consultancy. However, the Council has a duty to demonstrate value for money and must be seen to spend public money prudently to achieve the best combination of costs and outcomes. There is therefore a finite envelope of costs that HC must work within for negotiations and a timescale within which negotiations must be completed to meet the delivery programme for the Phase One scheme.

2.8.3. Therefore, in December 2025, the cabinet agreed to proceed with undertaking Compulsory Purchase Orders (CPOs) in parallel with negotiations, supported by a draft Statement of Reasons.

2.8.4. The land acquisition process would directly impact those who own land along the route. This comprises of seven different landowners.

2.8.5. There are a further three parcels of land for which the CPO will not apply. The first is a parcel of land already within the council's ownership. A second is land in the vicinity of the junction with the A49 which is owned by National Highways and will

remain in the ownership of National Highways upon the completion of the scheme to enable maintenance to be able to be undertaken without wayleaves. Finally, a third parcel of land is in the ownership of Network Rail, however the scheme does not make contact with that land and hence only air rights from Network Rail are required. Agreements with National Highways and Network Rail are being progressed separately (as outlined in Section 2.7 Third Party Consents and Approvals).

2.8.6. When considering the impact on those landowners directly affected by the proposals all reasonable accommodations will be considered to mitigate the impact of the permanent works within the compulsory purchase offer made to residents. It will be ensured that land acquired temporarily to enable construction of the scheme will be returned post construction in an equivalent state to that which it was in when received, unless alternative arrangements have been agreed with the landowner.

2.8.7. Since the cabinet decision in December 2025, preparatory progress has been made including refinement of CPO plans (Appendix P), land referencing and workshops in March 2026 to support negotiations. However, the CPO process has not been concluded. The next steps are to formally finalise and publish the CPO for agreement from the Secretary of State, to be able to serve the statutory notices.

2.8.8. At the time of the FBC submission in July 2026, out of the seven affected landowners, Herefordshire Council have Heads of Terms out with three landowners.

2.9. Stakeholder Engagement

2.9.1. Herefordshire Council has engaged with residents and stakeholders throughout the planning and development of Phase One. This section summarises the key aims and outcomes of those engagements.

Public Engagement and Marketing

Back the Bypass Campaign

2.9.2. The Back the Bypass Campaign was recently launched in March 2026 and provides a platform for sharing the benefits and opportunities that the infrastructure can bring. It has so far included a number of short films along with a brochure and website that set out in more detail some of the likely benefits of the project. The promotional films have included inputs from local residents, business representatives and Councillors setting out the compelling case for change. The Campaign is focused on three key aims:

- Unblock congestion
- Unlock growth
- Unleash potential

2.9.3. The Campaign is set to bring residents along the journey, demonstrating the case for the scheme in an interactive and accessible way for all stakeholders, including the general public. The Campaign will continue into the construction phase, with the view of building momentum and drawing in support across the county from stakeholders, residents and businesses. Alongside this, the Campaign will also be used to drive stakeholder support for the Phase 2 component of the scheme.

Public Information Exhibition

2.9.4. Herefordshire Council will also be delivering a Public Information Exhibition to raise further awareness about the scheme, including the benefits it will bring, timescales,

overview of the design, as well as responding to queries from the public. Graham will support Herefordshire at these events, which are expected to be undertaken throughout November 2026.

Herefordshire Local Transport Plan (2024-2041) Engagement Summary Report

2.9.5. As part of the Herefordshire LTP development process, an engagement exercise with stakeholders and the public was undertaken between 25th March and 21st May 2024. The key aims of the exercise was to understand participants priorities for transport, and improvements they would like to see to make travelling around the county easier, more reliable and sustainable.

2.9.6. Engagement was delivered in-person at roadshow events where 873 people attended and through an online survey where 630 responses were received. Some engagement also took place via email, internal newsletters and post.

2.9.7. The online survey asked respondents to order a number of supporting actions against **LTP Theme A: Supporting a thriving and prosperous economy.** Of the 8 actions identified, providing a transport network with less delays came in at number 2 while building new roads such as a bypass came in at number 4. This highlighted concerns around delays and how new road infrastructure is deemed as a viable solution resolve the issues.

South Wye Transport Package / Phase 1 Consultation (2014)

2.9.8. In advance of submitting the planning application for Phase One in 2015, a public consultation on the South Wye Transport Package and Phase One scheme alignment was undertaken during a 6-week period between 1st July 2014 and 8th August 2014. The consultation material included background to the scheme comprising issues, opportunities and objectives, and the option development process.

2.9.9. The public could engage in person at various exhibitions or online (website, social media, survey monkey link) and provide general feedback alongside answering a consultation questionnaire that had been developed specifically for the scheme.

2.9.10. The questionnaire was developed around the following themes:

- Traffic issues - where are they and how can they be resolved?
- Preferred routing option
- Interest in the scheme
- General feedback on the public consultation approach

2.9.11. A total of 231 questionnaires and 24 letters were received by the end of the consultation period.

2.9.12. A summary of the key findings is presented below. The full consultation report setting out the questions and feedback can be found in Appendix Q.

2.9.13. From questionnaires[3]:

- 95% of respondents (220) agreed that traffic conditions in the South Wye area needed to be improved

[3] Note that not all questions were answered by all 231 respondents and %'s set out may relate to a fewer number of responses. Refer to the Consultation Report in Appendix Q for full details.

- The top 5 current transport problems in the South Wye area noted were:
  - Traffic congestion on the A465
  - Delays at the A49/A465 signalised junction and
  - Traffic congestion on the A49
  - Volume of heavy good vehicles
  - Poor walking and cycling infrastructure
- Of the various options provided to help alleviate the traffic problems in the area, including increasing space for pedestrians (23%), cyclists (42%) and buses (43%) and providing new park and ride facilities (47%), the majority of respondents selected the delivery of a new link road (56%).
- The removal of traffic in Belmont was deemed as the most important factor in choosing an option for the link road.
- Of those who partook in the questionnaire, a large proportion were either regular users of the A465 and A49 or residents of the Belmont highlighting a vested interest in the scheme.

2.9.14. At this stage feedback was also received from Hereford City Council, National Highways (then The Highways Agency), English Heritage and Jesse Norman MP. All stakeholders did not object to the route, and in some cases welcomed the option as a means of reducing congestion issues but requested future engagement through the planning process.

2.9.15. The consultation responses highlighted that there is a traffic issue in the South Wye area and many of the issues culminate on the A465 and around the Belmont area. Overall, respondents were in favour of the scheme, noting that further work is needed as the scheme is designed to mitigate wider potential environmental impacts.

Engagement with wider stakeholders

2.9.16. There are a number of stakeholders who have a vested interest in the scheme and it is therefore important that there are regular and structured communication channels in place to support open and collaborative engagement amongst stakeholders.

Task Force

2.9.17. As outlined in Section 2.2 Governance Arrangements, Herefordshire Council established a Task Force comprising the following key stakeholders: Herefordshire Council, National Highways, Homes England, Midlands Connect, the Department for Transport and Transport for Wales. It also includes AECOM as the consultant support in the progression of the scheme. The Task Force is hosted by Herefordshire Council and meets on a quarterly basis.

2.9.18. The purpose of the Task Force is to provide a platform for all parties to come together to keep abreast of latest progress with the scheme and for high-level updates to be communicated across all parties, both in terms of scheme design and business case development. It is not intended for detailed discussion in relation to scheme requirements.

Design Related Engagement

2.9.19. Frequent engagement is also held with a number of key stakeholders, particularly National Highways and Network Rail to discuss design requirements and ensure third party agreement with the works proposed. These discussions are held on a much more frequent and ad-hoc basis, as and when a matter arises for discussion.

Communications Plan

2.9.20. A Communications Plan has been developed which sets out Herefordshire Council's intended approach for engaging and communicating with stakeholders through the remainder of the PCSA stage and into construction. This Plan is set out in Appendix R.

2.10. Carbon Management and Biodiversity Net Gain

Carbon Management

2.10.1. A Carbon Management Plan (CMP) has been developed for the construction stage of the scheme, aligned with PAS 2080:2023 (note that the estimation of 'user' carbon from vehicle emissions has been calculated separately and is reported within the Economic Case of the FBC). The CMP details how the scheme will manage and minimise carbon emissions during its construction. A three-stage process has been followed in developing the CMP as outlined below.

Stage 1 – Establish carbon footprint

2.10.2. The carbon footprint has been set based on the current detailed design for the scheme, accounting for any proposed Value Engineering. This identifies carbon 'hotspots' associated with the project, allowing carbon reduction efforts to be focused on areas with the greatest impact.

2.10.3. Carbon emissions associated with the lifecycle of the scheme have been estimated using the carbon calculation tool.

Stage 2 – Identify carbon reduction opportunities

2.10.4. Following quantification of the carbon footprint, a carbon workshop was held to identify a list of carbon reduction opportunities, with a focus on the carbon 'hotspots' identified as part of Stage 1. Given the project is quite far through the design, the workshop aimed to capture opportunities that have already been implemented on the project, as well as further opportunities to be explored in the future. The workshop included attendance from Herefordshire Council, AECOM and Graham. Opportunities have been categorised as follows:

- Strategy & Governance
- Innovative Design
- Lower Carbon Products
- Lean Construction Techniques

2.10.5. By identifying and developing carbon reduction opportunities within each of these categories, all aspects of the project have been considered, including management processes, procurement and company culture, as well as technical solutions. The categories are also broadly aligned with the three key areas identified within the UK Government's Infrastructure Carbon Review as being crucial to achieving meaningful organisational carbon reductions: leadership, innovation and procurement.

2.10.6. A summary of the 33 opportunities identified is set out in the Table below. It should be noted that due to the late stage of the project, opportunities for significant carbon reduction were limited.

Table 1-7: Carbon reduction opportunities

Carbon Reduction Opportunity	Description
Early integration of carbon reduction measures in the design	Designers to push for low carbon measures in design early where possible by holding design review meetings to identify and discuss carbon reduction opportunities. Also engage early with supply chain partners and contractors to identify carbon reduction opportunities.
Challenge design standards specifications to drive low-carbon innovations	Question conventional standards and specifications where they conflict with low-carbon outcomes.
Reduce congestion along A465 and Holme Lacy Road	Increasing attractiveness of bus and active travel schemes and reducing traffic flows is a fundamental aim of the project. This can be done through improved bus priority measures, enhanced walking and cycling infrastructure, safer and more direct routes and, prioritised signalling.
Include carbon-related reductions within the contracts	Include measurable carbon targets and KPIs and performance reporting requirements in all procurement frameworks and supply chain contracts to reinforce delivery of reductions during construction.
Develop a waste management strategy	Prioritise prevention and set clear targets for diverting construction waste from landfill. Minimise waste generation, maximise reuse on site where possible, and recycle waste materials, in line with the waste hierarchy.
Encourage engagement with carbon reduction across the workforce	Embed carbon reduction behaviours within site operating procedures and a Construction Trave Plan, encouraging engagement through measures such as active travel, car sharing, and efficient site access arrangements.
Use of ACLA in base and binder asphalt layers	Adopt ACLA within lower pavement layers as part of value engineering to reduce embodied carbon. This creates a carbon sink and potential carbon neutral material, and could increase asphalt life but there is no evidence yet.
Substitute concrete retaining structures with reinforced earth	Use of reinforced earth instead of precast or in-situ concrete.
Minimise total surfaced area	Reduce fully surfaced carriageway width, e.g. by using hard strips in place of full-width surfacing.
Plant trees and limit their removal	Minimise vegetation removal. Where unavoidable, offset through targeted planting of suitable species.
Use driven posts for steel safety barriers	Specify driven posts for steel barriers to reduce concrete requirements.
Design for Manufacture & Assembly (DFMA)	Maximise potential for offsite and modular fabrication, prioritising precast concrete elements such as headwalls and underpasses, to reduce site waste and construction activities.
Incorporate innovative drainage products such as Fildrain	Incorporate products such as Fildrain to replace traditional drainage blankets, reducing the need for

	imported quarry materials. Fildrain offers ease of transport, lower weight, and reduced material usage.
Streamline design and alignment to reduce material demand	Review geometry and structure sizes to reduce earthworks volumes and material requirements.
Reduce embankment height	Reduce embankment height, where possible, to minimise the volume of imported fill and associated earthworks.
Optimise foundation types	Foundation design to prioritise structures with pads rather than piling to reduce carbon, cost and complexity.
Reuse waste materials on site or locally	Reuse excavated material from site where possible to minimise off-site disposal and import quantities.
Use of recycled plastic kerbs	Consider use of recycled plastic kerbs which are manufactured from plastic waste and have lower embodied carbon compared to concrete. They are lighter weight, durable and resistant to rot and corrosion.
Use of unbound pavements on accesses	Use of unbound pavements on accesses where possible
Use recycled asphalt (RA) in asphalt mixtures	Use recycled asphalt (RA) in asphalt mixtures to reduce the need for virgin materials
Procure local goods and services	Procure local goods and services to reduce transportation emissions
Use warm mix asphalts	Use warm mix asphalts to reduce fuel use on site
Do not over-specify concrete compressive strength	Do not over-specify concrete compressive strength in design to minimise embodied carbon
Use recycled fill materials	Use recycled fill materials (Class 1A, 6F2 etc.) to limit quarrying of virgin aggregates. Transportation distance should be considered though as transporting recycled aggregates over large distances could actually be higher carbon than local virgin material
Consider low carbon cement replacements	Consider low carbon cement replacements to reduce embodied carbon
Work towards zero earthworks waste	Work towards zero earthworks waste to minimise emissions associated with disposal
Temporary traffic management optimisation	Minimum traffic management on public roads. Minimising disruptions and therefore traffic and idling.
Minimise use of diesel generators	Avoid diesel generators; use grid electricity wherever possible
Integrated site compound layout and use of stabilised materials	Use of stabilised materials for compounds and access roads. One larger setup using stabilised soils for access roads etc., rather than blacktop
Use of existing local sewer connections	Use of existing local sewer connections for site compounds
Use HVO fuel/ electricity for construction plant and generators	Use HVO fuel/ electricity for construction plant and generators to reduce emissions
Use of modern low-emission plant and equipment	Use efficient engines and emissions control technologies (e.g. AdBlue/Selective Catalytic Reduction systems) to reduce exhaust emissions.
Optimise earthworks logistics	Optimise earthworks planning to avoid double handling/ movement. Maul Haul optimisations minimise haul routes

Stage 3 – CMP Development

2.10.7. A CMP was developed based on all of the information gathered, to detail how the Phase One scheme will manage and minimise carbon emissions across its lifecycle. Carbon reduction measures have been prioritised according to their effectiveness in reducing emissions and their ease of implementation. Measures with high effectiveness to reduce carbon and that are easier to implement have been assigned a higher priority rating compared to those which may be effective but harder to implement.

2.10.8. Some of the high priority carbon reduction measures that have already been implemented, or to be explored further, are listed below:

- Challenging design standards and specifications to drive low carbon innovations;
- Including carbon-related reductions within procurement frameworks and supply chain contracts (implemented); and
- Substituting concrete retaining structures with reinforced earth.

2.10.9. The CMP covers the whole asset lifecycle and is set out in Appendix C.

Biodiversity Net Gain

2.10.10. As of February 2024, there is a legal requirement for major developments to deliver at least a 10% increase in biodiversity (Environment Act 2021). This scheme received planning approval in 2016 and prior to this requirement and therefore it has not been quantified as part of this business case. However, for any associated supplementary planning applications a proportionate consideration will be given to BNG. The attenuation ponds and the additional hedgerows are part of the main works application. We need to be focused on the supplementary planning application and provide a 10% increase of BNG within it. This work is still under preparation and will not be complete until after the submission of the business case.

2.10.11. As outlined in the Strategic Dimension, to compensate for the loss of approximately 1.3 acres of Ancient Woodland as a result of the Phase One scheme, almost 12 acres of species-rich woodland and woodland edge habitat will be created.

2.11. Road Numbering and Classification

2.11.1. The Department for Transport (DfT) determines the classification of new roads based on the recommendations from the local authority and how well the road fits the definition of the road class. The council will make the case with DfT for Phase One to be classified as an A road (possibly the A492) as it will serve an important function connecting the A465 to the A49.

2.11.2. The Council is also likely to request that the B4339 from the A49 to Rotherwas is also reclassified as the same A road as Phase One. Both roads fitting with the definition of an A road having the right lane widths, verges and other features befitting of an A road, and completing a route to Rotherwas and the Hereford Enterprise Zone from the A465.

2.11.3. Longterm, with the construction of Phase Two, National Highways has agreed that they would want to see the entire bypass reclassified as the A49 and that the existing A49 through the centre of Hereford be declassified and de-trunked to local authority control.

2.12. Maintenance Strategy

2.12.1. Herefordshire's Highway Maintenance Plan (HMP) sets out how the Council will deliver its objectives across all assets, as expressed through the Local Transport Plan, Transport Asset Management Plan and other related policies and plans. The plan also sets out the performance that is required by the Council for it to continue to meet the duty to maintain the highway under Section 41 of the Highways Act 1980.

2.12.2. Herefordshire's maintenance strategy is a risk-based process designed to ensure safety, asset longevity, and value for money. The first step involves establishing a hierarchy for the Phase One scheme according to its importance and actual usage. This hierarchy informs the frequency and intensity of inspections, with higher-risk or more heavily used roads receiving more regular attention.

2.12.3. Routine safety inspections will be scheduled along Phase One based on the risk profile of the asset. These inspections, along with reports from the public and ongoing monitoring, will help identify defects and issues across the network. Once a defect is detected, it will be assessed for risk; those posing a greater danger to highway users of the scheme, especially vulnerable groups, will be prioritised for rapid repair.

2.12.4. It is proposed that the Phase One road will be a 'Principal Road' denoted by an 'A' road number. This will mean that the Phase One road will be subject to daytime safety inspections on a monthly basis and an annual night-time inspection to assess the suitability of the road markings and studs.

2.12.5. Maintenance activities are divided into three main types: reactive, routine, and programmed. Reactive maintenance addresses urgent defects immediately to prevent harm or disruption. Routine maintenance includes scheduled tasks such as cleaning drains, cutting verges, and maintaining signage, ensuring the network remains functional and safe. Programmed maintenance involves planned works based on asset condition, such as resurfacing roads or replacing bridges. These works will be aimed at preserving the long-term integrity of the Phase One scheme.

2.12.6. Resource allocation will be guided by asset management principles, directing funds and personnel to repairs and improvements that deliver the best safety outcomes and maximise value. Sustainability is embedded throughout the process, with efforts to use low-carbon materials, support biodiversity, and minimise environmental impact. Finally, performance monitoring and regular reviews ensure objectives are met and drive continuous improvement.

2.13. Benefits Management and Evaluation Plan

2.13.1. As per latest guidance issued by the DfT, Benefits Management and Monitoring and Evaluation can now be combined into a Benefits Management and Evaluation Plan (BMEP).

2.13.2. Benefits monitoring and evaluation is undertaken to collect data and evidence before and after a scheme is implemented, analyse the findings from the monitoring, and draw conclusions about the impacts and value for money of a scheme. This will be based on a quantitative and qualitative assessment to investigate whether the monitoring data collected suggests that the ex-ante appraisal values remain valid.

2.13.3. The scheme will be subject to a process, impact and value for money evaluation using a mixed approach combining qualitative and quantitative analysis. The

approach will enable a proportionate review of whether outcomes have been achieved as expected using readily available data, where possible alongside primary data where required.

2.13.4. To enable the Scheme's benefits to be evaluated, three monitoring and reporting stages are proposed as set out in Table 1-8.

Table 1-8: Proposed Monitoring and Reporting Stages

Monitoring and Reporting Stage	Purpose	Proposed time period(s)
Baseline	A baseline assessment will be undertaken to provide a benchmark to assess changes in outcomes and impacts post-scheme opening. This will also involve process evaluation activities to be undertaken during the construction period.	July – November 2026: Baseline data collection undertaken where relevant / applicable. December 2026 – September 2028: Construction period March 2027: Baseline Report completed
Post opening evaluation (one year after)	The impact of the Scheme will be assessed one year after construction. The one-year post-construction monitoring will provide a first indication of the impact of the Scheme. Evaluation of the delivered Scheme, founded from the Process Evaluation, will be provided within the Year 1 Post-Opening Report.	September 2029 – December 2029: Year 1 post-opening data collection March 2030: Year 1 post-opening report completed
Post opening evaluation (three years after)	The impact of the Scheme will be assessed three years following implementation. The post-implementation monitoring will provide an update to the one-year evaluation and assess changes in key outcomes compared with the initial evaluation, using quantitative and qualitative methods. The value for money assessment will be considered at this stage.	September 2031 – December 2031: Year 3 post-opening data collection March 2032: Year 3 post-opening report completed

2.13.5. The Phase One BMEP can be found in Appendix S providing detail on the full evaluation approach and proposed datasets.

2.14. Lessons management

2.14.1. Lessons management will largely be undertaken through monitoring and evaluation process, specifically the process evaluation which will take place during scheme construction. As set out in the BMEP (Appendix S) the process evaluation seeks to establish whether the scheme was delivered to time and budget and whether any lessons learnt were identified during the process. As a minimum, this will include

Herefordshire Council and the contractor, but if deemed necessary this can be extended to National Highways and Network Rail as key contributors to design.

2.14.2. The process evaluation will be undertaken during scheme construction. The frequency at which engagement takes place will be reviewed before construction commences, however it is likely this will be half way through construction and just after completion. This will be agreed with Herefordshire Council and the contractor, Findings will be presented in the one-year post-construction report highlighting the successes, challenges, opportunities and key lessons learnt. It is recommended that following issue of this document, a lessons learnt workshop is held to discuss findings.

2.15. Social Value Plan

2.15.1. As the appointed contractor for the scheme, Graham has produced a deliverable Social Value Plan with defined actions and with local organisations supported. They intend on working with their design partners AtkinsRealis to deliver social value across both the PCSA and construction stages. The Plan is set out across social, economic and environmental themes and is summarised in Table 1-9.

Table 1-9: Social Value Plan

Social Value Actions
Social
Tailored support for students at local educational institutions, providing 16 hours at PCSA phase and 100 hours at construction phase.
Provide £10,000 worth of donations and/or in-kind support to local community groups at construction stage.
Volunteer to support local community projects spending 15 hours at PCSA and 60 hours at construction stage.
Economic
Spend 25% of the contract value with the supply chain partners within the Herefordshire County boundary by the end of project.
Provide 50 hours of personalised support to help unemployed people into work – 10 hours at PCSA stage and 40 hours at construction.
Deliver 12 hours of expert commercial and business support to local VCSEs and SMEs, running two sessions across 2027 and 2028.
Deliver two unpaid work experience schemes targeting local people at various stages of the project.
Deliver 76 weeks of meaningful paid work placements at construction stage.
Locally recruit 4 new apprentices, delivering 208 apprenticeship weeks at construction.
Environment
Save 20.97tCO2e/£m in scope 1 & 2 emissions.
Limit direct water consumption to 47m3/£m
Limit waste consumption to <21.98 t/£m, with 99% of waste being produced being diverted from landfill.
95% of Graham and 20% of their supply chain's non-plant vehicle fleet will consist of hybrid or electric vehicles.