

Hereford Southern Link Road

Planning Application and Design Review

Herefordshire Council

Project Number 60715938

February 2024

Quality information

Prepared by	Checked by	Verified by	Approved by
Bash Zaman Highways and Traffic Engineer	Richard Gardiner Principal Engineer	Cath Hudson Associate Director	Richard Gardiner Principal Engineer

Revision History

Revision	Revision date	Details	Authorized	Name	Position
P01	20/02/2024	Final Issue			
P02	14/03/2024	Minor amendment			

Distribution List

# Hard Copies	PDF Required	Association / Company Name
	Final Issue	Geoff Pickford Herefordshire Council

Prepared for:

Herefordshire Council

Prepared by:

AECOM Infrastructure & Environment UK Limited
Birmingham B4 6AT
United Kingdom

aecom.com

© 2023 AECOM Infrastructure & Environment UK Limited. All Rights Reserved.

This document has been prepared by AECOM Infrastructure & Environment UK Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

1.	Introduction.....	1
2.	Review of the Planning Application.....	1
	2.1 Introduction.....	1
	2.2 Overview of Application P151314/F.....	1
	2.3 Validity of Application P151314/F.....	3
	2.4 Planning Policy Context Review.....	5
	2.4.1 National Planning Policy Framework (2023).....	5
	2.4.2 Callow and Haywood Group Neighbourhood Development Plan (2016).....	6
	2.4.3 Clehonger Neighbourhood Development Plan (2021).....	6
	2.5 Amendments to Planning Permission Reference P151314/F.....	7
	2.6 Summary.....	8
3.	Review of Environmental Assessment.....	9
	3.1 Introduction.....	9
	3.2 Review of Existing Environmental Surveys and Assessments.....	9
	3.3 Review of Changes to Legislation, Policy and Guidance with respect to Environmental Assessment.....	16
4.	Transport modelling and appraisal review.....	24
	4.1 Review of Available Information Relating to the Planning Application of the Hereford Southern Link Road.....	24
	4.2 A review of transport modelling and appraisal relating to the SLR undertaken since the submission of the planning application.....	25
	4.3 Recommendations.....	26
	4.4 Summary.....	28
5.	Highway Design Review.....	29
6.	Geometric Review of Scheme.....	29
	6.1 Horizontal and Vertical Alignment.....	29
	6.2 Cross-section and Lane Widths.....	30
	6.3 Overtaking Sections.....	31
	6.4 Stopping Sight Distance.....	31
	6.5 Direct Accesses.....	32
	6.6 Maintenance Hardstanding Areas.....	33
	6.7 Roundabout Design.....	33
	6.1 Summary.....	34
7.	Structures.....	35
	7.1 Overview.....	35
	7.2 Available Information.....	35
	7.3 Validity of Structures Design and Next Steps.....	36
8.	Active Travel Review.....	36
	8.1 Overview.....	36
	8.2 Design Requirements.....	37
	8.3 Demand.....	39
	8.4 Constraints.....	39
	8.5 Summary.....	40
9.	Commercial Review.....	40
	9.1 Commercial review of Full Business Case.....	40
	9.2 Summary.....	43
10.	What Next / Gap Analysis.....	44
	10.1 Planning Application.....	44

10.2	Environmental Assessment	44
10.2.1	If the Scheme is Progressed as Currently Consented	44
10.2.2	If Changes to the Scheme are Required	45
10.2.3	Section 73 Application	45
10.2.4	Full Planning Application.....	46
10.3	Funding and Business Case Development.....	46
10.4	Environmental Status	46
10.5	Transport modelling and appraisal review	47
10.6	Highways.....	47
10.7	Structures.....	47
10.8	Active travel.....	48
10.9	Commercial	48
10.10	Timescales	48
10.11	Risks	50
10.12	Summary.....	50
Appendix A		51
	Scheme proposals Planning Application figure 3.3.....	51
Appendix B		52
	A49 / B4399 / Hereford SLR Roundabout Review Document	52
	A465 / B4349 / Hereford SLR Roundabout Review Document	53
Appendix C.....		54
	Indexes used for the uplift from BCIS.....	54
Appendix D.....		56
	Terrestrial and aquatic ecology planners	56
Appendix E		58
	Indicative programme.....	58

Figures

Figure 1 - Current Route Plan and Longitudinal Section Drawing	30
Figure 2 - Illustrative Cross-Section of the proposed Southern Link Road	31
Figure 3 - Proposed markings at the traffic island.....	34
Figure 4 - LTN 1/20 appropriate protection requirements	37
Figure 5 – Existing design cross section	38
Figure 6 - LTN 1/20 Desirable minimum cross section	38
Figure 7 - National Cycle Route 46	39

Tables

Table 1: Schedule of Planning Conditions attached to planning permission ref. P151314/F.....	2
Table 2: Schedule of applications to discharge planning conditions associated with application P151314/F.....	4
Table 3: Planning Policy Context	5
Table 4: Review of Environmental Assessments submitted with the Planning Application.....	9
Table 5: Review of Changes to Legislation, Policy, and Guidance with respect to Environmental Assessment ...	16
Table 6: BCR South Wye Transport Package.....	26
Table 7: BCR Sensitivity testing South Wye Transport Package.....	26
Table 8: SLR proposed structures.....	35
Table 9: SLR Risk-Adjusted Cost Estimate – with AECOM TPI increase.....	41
Table 10: FBC Construction Costs – with AECOM TPI increase	42

1. Introduction

AECOM has been requested by Herefordshire Council (HC) to carry out a review of planning application reference P151314/F ('the Southern Link Road (SLR)', hereby referred to as 'the Scheme') that was submitted to Herefordshire Council, in their capacity as the Local Planning Authority (LPA) in 2015 and to set out the next steps required to enable the re-commencement of construction of the Scheme. This report sets out the evaluation and conclusions of a review of planning issues and environmental issues with respect to the SLR. The review also explores options for incorporating active travel and to provide updated cost estimates. The findings will be summarised at the end of this report and will advise the options for the next stage required before commencement of construction.

2. Review of the Planning Application

2.1 Introduction

Planning application ref. P151314/F was submitted on behalf of Herefordshire Council on 8th May 2015. Planning permission reference P151314/F was granted subject to conditions on 18th July 2016 for the development of a "new single carriageway (Southern Link Road) 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" (hereafter referred to as 'the Site'). The SLR is located to the south-west of Hereford.

This section provides a review of planning application ref. P151314/F to establish the validity of the planning permission and whether it can still be implemented. It also identifies any changes to local and national planning policy that have taken place since the approval of planning application ref. P151314/F. Finally, a review of the Scheme has been undertaken to establish whether active travel infrastructure can be incorporated into the SLR design.

This Section is structured as follows:

- Section 2.2 provides a contextual overview of planning application ref. P151314/F;
- Section 2.3 considers the validity of planning application ref. P151314/F;
- Section 2.4 reviews the planning policy context identifying any changes in local and national planning policy since the determination of planning application ref. P151314/F;
- Section 2.5 advises whether active travel infrastructure and amendments to the Scheme could be made at this stage; and
- Section 2.6 summarises our advice.

It should be noted that this advice is based on the information provided October 2023. It is therefore recommended that the advice set out in this document be confirmed should any changes be made to the Scheme or planning strategy.

2.2 Overview of Application P151314/F

A planning application was submitted on behalf of Herefordshire Council on 8th May 2015 and was allocated application reference number P151314/F. The description of development sought 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).

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. For 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 Newquay railway line. After this it passes underneath Haywood Lane, straightening up and heading in a north westerly direction to the A465, where a new four arm roundabout would have two entry lanes and two exit lanes. The road then extends from the proposed roundabout creating a new link to the B4349 (Clelonger Road). It is understood that no active travel infrastructure was included as part of the SLR scheme.

The planning application was determined at planning committee on 6th June 2016. Members voted to grant planning permission and the decision notice was dated 18th July 2016. Planning permission was granted subject to 21 conditions. Table 1 contains a schedule of the planning conditions along with information on their type and any triggers for discharging them. Reference should be made to the decision notice for the full wording of the planning conditions. The different types of condition include:

- Compliance – These conditions seek to ensure the proposed development is constructed in accordance with certain criteria or documentation;
- Pre-commencement – These conditions are linked to works commencing and usually require the submission of information to the LPA for approval to discharge. There are occasions where a pre-commencement condition is linked to a particular phase or element of the proposed development; and
- Prior to opening/use – These conditions are linked to the proposed development being brought into operation and usually require the submission of information to the LPA for approval to discharge prior to that stage.

Table 1: Schedule of Planning Conditions attached to planning permission ref. P151314/F

#	Condition	Type	Notes
1	Development shall be begun within three years of the granting of permission.	Compliance	Planning permission expires 18 th July 2019.
2	Development shall be carried out in accordance with the approved plans.	Compliance	
3	Development shall be undertaken in accordance with the mitigation outlined in the Environmental Statement.	Compliance	
4	Construction to occur: <ul style="list-style-type: none"> • Mon-Fri 7:30-18:00; • Saturday 8:00-13:00; and • No time on Sundays, Bank or Public Holidays. 	Compliance	Approval from LPA required where works are proposed outside of these hours.
5	The applicant must appoint an Environmental Co-ordinator(s) independent of the design and construction personnel.	Pre-commencement	The co-ordinator(s) is to be approved by the LPA.
6	Construction Environmental Management Plan (CEMP).	Pre-commencement	Must be submitted to LPA no later than three months prior to commencement of construction.
7	Construction Environmental Management Plan – Sub Plans.	Pre-commencement	Linked to the CEMP above.
8	Soil management – Preparation of a Materials Management Plan.	Pre-commencement	
9	Archaeology – Implementation of a programme of archaeological works.	Pre-commencement	
10	Biodiversity – following of method statements for protected species.	Pre-commencement	

#	Condition	Type	Notes
11	Biodiversity (species and habitat protection and enhancement scheme)	Pre-commencement	
12	Landscape and tree protection (detailed landscape scheme)	Pre-commencement	
13	Landscape and tree protection (Landscape Maintenance and Management Plan)	Prior to opening/use	
14	Landscape and tree protection (construction materials and finishes)	Pre-commencement	Details to be provided prior to commencing construction of bridge structure or parapet.
15	Water Quality, Flood Risk and Drainage (surface water drainage scheme)	Pre-commencement	
16	Water Quality, Flood Risk and Drainage (mitigation measures and channel enhancements)	Pre-commencement	
17	Highways (approval of full design and construction details for junction between SLR and A49(T))	Pre-commencement	Details to be provided prior to commencing construction of junction between SLR and A49(T) – Subject to non-material amendment (P191223/AM) that linked the trigger to part of the works.
18	Highways (legal agreement for work on the A49 trunk road)	Pre-commencement	Details to be provided prior to commencing construction of junction between SLR and A49(T) – Subject to non-material amendment (P191223/AM) that linked the trigger to part of the works.
19	Highways (surface materials)	Pre-commencement	
20	Highways (lighting details)	Prior to opening/use	
21	Highways (weight restriction on Belmont Road)	Prior to opening/use	

2.3 Validity of Application P151314/F

Condition 1 of application reference P151314/F sets out that the development should be begun before the expiration of three years from the date of the planning permission. This means that construction works would have needed to commence on site prior to 18th July 2019.

For a planning permission to be implemented lawfully, all necessary pre-commencement planning conditions must be discharged prior to construction work commencing on site. There are 14 planning conditions in Table 1 that are pre-commencement, acknowledging that condition 14 is linked specifically to the construction of bridge structure or parapets and conditions 17 and 18 are linked to the construction of the junction between the SLR and the A49(T). The remaining 11 pre-commencement conditions would need to be discharged before application P151314/F could be implemented lawfully.

A search on the LPA's online 'Planning Search' tool identified several applications that have been submitted to discharge planning conditions associated with planning application ref. P151314/F. Table 2 provides a schedule of these applications and their status. A review of these discharge of condition applications confirms that all necessary pre-commencement planning conditions were discharged meaning planning application ref. P151314/F could have been lawfully implemented prior to the 18th July 2019. The last discharge of condition

application (ref. P191579/XA2 for Condition 5) was approved 20th June 2019 which provided 20 working days to lawfully implement the planning permission.

Table 2: Schedule of applications to discharge planning conditions associated with application P151314/F

Reference	Planning Condition(s)	Status	Date
P191777/XA2	12 Landscape and tree protection (detailed landscape scheme)	Approved – Condition 12 has been discharged	19 th June 2019
P191579/XA2	5 Environmental Co-ordinator	Approved – Condition 5 has been discharged	20 th June 2019
P191458/XA2	8 Soil management	Approved – Partial discharge of Condition 8 for Phase 1 of works	13 th June 2019
P191452/XA2	6 Construction Environmental Management Plan 7 Construction Environmental Management Plan – Sub Plans	Approved – Partial discharge of Conditions 6 and 7 for Phase 1 of works	12 th June 2019
P184535/XA2	9 Archaeology	Approved – Condition 9 has been discharged	15 th January 2019
P184246/XA2	20 Highways (lighting details)	Approved – Condition 20 has been discharged	8 th February 2019
P184245/XA2	19 Highways (surface materials)	Approved – Condition 19 has been discharged	8 th February 2019
P184244/XA2	16 Water Quality, Flood Risk and Drainage (channel enhancements)	Approved – Condition 16 has been discharged	22 nd May 2019
P184243/XA2	15 Water Quality, Flood Risk and Drainage (surface water drainage scheme)	Approved – Condition 15 has been discharged	09 th May 2019
P184242/XA2	14 Landscape and tree protection (construction materials and finishes)	Approved – Partial discharge of Condition 14 enabling works to commence	15 th January 2019
P184241/XA2	10 Biodiversity (method statements for protected species) 11 Biodiversity (species and habitat protection and enhancement scheme)	Approved – Conditions 10 and 11 have been discharged	1 st May 2019
P184240/XA2	4 Hours of operation	Approved – Condition 4 has been discharged	8 th January 2019

It has been evidenced through dated photographs that the Client undertook a nominal commencement of works between the 1st July 2019 and the 18th July 2019 (the date the planning permission reference P151314/F was set to expire). The development carried out during this period relates to Phase 1 as shown on drawing number DMCXX999-C-2601 (General Arrangement). The Client commenced partial construction of the road between Chainage 1150 m to Chainage 1300 m of the carriageway, which involved elements of earthworks, road pavements (unbound) and fencing approved by application.

This commencement of works has been evidenced and confirmed through a letter from the LPA dated 25th July 2019 which confirms that all the requisite pre-commence conditions attached to application ref. P151314/F have

been discharged and the development of Phase 1 of the SLR has commenced in accordance with the approved plans.

The case officer for the application, Miss Kelly Gibbons (Development Manager), visited the construction site on Thursday 4th July 2019 and Monday 9th July 2019, and confirmed that the works undertaken are considered sufficient to confirm the commencement of development in accordance with the requirements of Condition 1 (commencement of development within 3 years).

It has been clearly evidenced that commencement of development began lawfully prior to the date of consent expiry (18th July 2019), therefore Condition 1 has been satisfied and works to proceed with the scheme in accordance with the approved plans can be continued.

2.4 Planning Policy Context Review

Table 3 provides an overview of the planning policy context at the time application ref. P151314/F was determined and whether these documents have been superseded since its determination. This confirms that there has been no change in Herefordshire Council’s local planning policy. There has been a change in policy at a national level with several updates to the National Planning Policy Framework (NPPF). There has also been a change in neighbourhood planning which has seen two neighbourhood plans being made since July 2016.

Table 3: Planning Policy Context

Planning policy context for application P151314/F	Current planning policy context
NPPF (2012)	NPPF (2023)
The Herefordshire Local Plan Core Strategy (adopted October 2015)	No change
Herefordshire Local Transport Plan 2016 – 2031 (adopted May 2016)	No change
The Callow and Haywood Draft Neighbourhood Development Plan 2011-31 – which had progressed to Regulation 16 stage and was with the examiner at the time application P151314/F was determined	Callow and Haywood Group Neighbourhood Development Plan (made 1 st December 2016)
Cleghonger Parish Council had designated their Neighbourhood Plan – this had not progressed to the Regulation 14 stage at the time application P151314/F was determined	Cleghonger Neighbourhood Development Plan (made 7 th June 2021)

2.4.1 National Planning Policy Framework (2023)

The NPPF was first published in 2012 and has been updated in July 2018, February 2019, July 2021, and September 2023 since the determination of planning application ref. P151314/F. The updates made to the NPPF are not considered to remove support for the SLR, they may however impact on the detail required to support a future application, if required. The following NPPF chapters would be considered relevant in relation to the detail for any future planning application for the SLR:

- Chapter 2 Achieving Sustainable Development;
- Chapter 6 Building a strong, competitive economy;
- Chapter 8 Promoting healthy and safe communities;
- Chapter 9 Promoting sustainable transport;
- Chapter 12 Achieving well-designed places;
- Chapter 14 Meeting the challenge of climate change, flooding and coastal change;
- Chapter 15 Conserving and enhancing the natural environment; and

- Chapter 16 Conserving and enhancing the historic environment.

2.4.2 Callow and Haywood Group Neighbourhood Development Plan (2016)

The Callow and Haywood Group Neighbourhood Development Plan (CHGNP) was adopted on 1st December 2016 and now forms part of the Development Plan for Herefordshire meaning any future planning application would be assessed against its policies alongside existing national and County planning policies.

The CHGNP acknowledges that the SLR already benefits from planning permission. This is referenced at paragraphs 1.19 and 1.20 of the CHGNP which state:

“1.19 The proposed Southern Link Road to the south of the City of Hereford is a major concern as the identified corridor is likely to impact on the Group Parish to some degree, whichever route is finally determined by Herefordshire Council.

1.20 The proposed new Southern Link Road will link from the A49 Ross Road/Rotherwas Access Road roundabout to the A465 and the B4349 Clehonger Road. In June 2016 the planning application for the South Wye Transport Package (SWTP) – Southern Link Road was determined and planning consent was granted on 18 July 2016.”

Policy CH2 aims to ameliorate potential impacts on the group parish associated with the proposed SLR and sets out several criteria to reduce adverse impacts on local landscape character, wildlife, and local quality of life. Any future planning application for the SLR would need to address these criteria. In addition, the following CHGNP policies would be considered relevant in relation to the detail for any future planning application for the SLR:

- Policy CH1 – Protecting and Enhancing the Rural Landscape;
- Policy CH2 – Building and Transport Design Principles;
- Policy CH3 – Local Heritage List; and
- Policy CH4 – Protecting the Sensitive Landscape Assets in the Urban Fringe.

2.4.3 Clehonger Neighbourhood Development Plan (2021)

The Clehonger Neighbourhood Development Plan (CNDP) was adopted on 7th June 2021 and now forms part of the Development Plan for Herefordshire, meaning any future planning application would be assessed against its policies alongside existing national and County planning policies.

The SLR (referred to as the Hereford bypass) is referenced within the CNDP and covered by Policy C11. This policy secures the principle for a wider Hereford bypass and is intended to complement other policies of the CNDP by addressing potential impacts in a single policy. The CNDP acknowledges that the SLR already benefits from planning permission as demonstrated in the supporting text at Paragraph 6.15, which states:

“Herefordshire Council is developing proposals for a Hereford bypass which will pass through the Neighbourhood Area. Provision for the scheme is made in the Local Plan Core Strategy. An initial phase will see the existing junction of the A465 and the B4349 being moved to the west and replaced by a roundabout. The roundabout will serve a new road, the southern link road, running from the A49 at Grafton to the A465. These proposals have planning permission and compulsory purchase and side roads orders have been confirmed.”

The following CNDP policies would be considered relevant in relation to the detail for any future planning application for the Hereford SLR:

- Policy C1: Sustainable Development;
- Policy C4: Natural Environment;
- Policy C5: Historic Environment;
- Policy C6: Design; and
- Policy C11: Hereford bypass.

2.5 Amendments to Planning Permission Reference P151314/F

It has been established that planning permission ref. P151314/F has been lawfully implemented and works to construct the SLR in accordance with the approved plans can proceed. However, consideration is also being given to whether changes can be accommodated.

It is understood that potential amendments to the Scheme fall into two categories. The first would be changes to the design to align with current highway and other design guidance. This could conceivably involve changes to junctions, highway alignment and associated structures. The second involves the addition of a segregated cycle lane alongside the proposed road.

There is a desire to keep potential amendments within the red line boundary of planning permission ref. P151314/F. However, it is understood that an LTN 1/20 compliant cycle lane is unlikely to fit inside the existing red line boundary. It should be noted that any changes located outside of a red line boundary to a planning application cannot be covered under the available mechanisms for making amendments to an existing planning permission. An alternative consenting strategy (for example a separate planning application) will be required for any changes located outside of the red line boundary.

It is recommended that once the nature and scale of any potential amendments have been established a further review is undertaken to advise on the most suitable mechanism for amending the planning permission. The available mechanisms for amending a planning permission can be summarised as follows:

- **De-minimus changes** – These changes are of an extremely minor nature which means they can be accommodated within the approved design with agreement from the LPA. Based on the information available, this is unlikely to be applicable in this case.
- **Discharge of Condition Application** – Where changes relate to detail design it is sometimes possible to address them through a subsequent discharge of condition application that once approved would supersede any previously agreed detail. This would be applicable to minor changes in detail design that do not impact on information presented on the approved drawings.
- **Non-material Amendment (Section 96a) Application** – This type of application can be used for a minor change to a planning permission that does not breach any conditions placed on that permission. Whether a change is considered 'non-material' (rather than 'material') will depend on the specific details in that case and there is no definition for what can be considered non-material. If a change is not considered non-material by the LPA an amendment application or new planning application will be required.
- **Amendment (Section 73) Application** – This type of application allows the applicant to vary or remove planning conditions attached to the original planning permission. It can be used to make minor material changes to an application by varying the planning condition that secures the approved drawings. New drawings are provided and if approved supersede those in the original planning condition.
- **New Planning Application** – A new planning application will be required if the changes cannot be addressed using one of the mechanisms above.

It is recommended that allowance is made for discussing the preferred mechanism with the LPA to ensure all parties agree on the route forward. The preferred mechanism will require 'buy in' from the LPA as they will need to be satisfied any potential amendments can be addressed using that type of application. This will avoid an unnecessary delay to validation or a refusal if they disagree on the mechanism for amending the planning permission.

A further consideration is that application ref. P151314/F was an Environmental Impact Assessment (EIA) development and accompanied by an Environmental Statement (ES). Consideration will also need to be given as to whether the potential amendments trigger any changes to Likely Significant Effects as presented with the EIA. Changes to reported effects might impact on the mechanism used to amend a planning permission as well as information required to support an application. For example, a Section 73 application might need to be accompanied by an Environmental Statement Addendum to consider the potential for changes to Likely Significant Effects in the EIA.

2.6 Summary

Planning application ref. P151314/F was submitted on behalf of Herefordshire Council on 8th May 2015. The application sought a “*new single carriageway (Southern Link Road) and associated works*”. The application was determined at planning committee and planning permission was granted, subject to conditions, on 18th July 2016.

Planning application ref. P151314/F was subject to a planning condition requiring construction works to have commenced on site prior to the 18th July 2019. A review of discharge of condition applications confirms that all necessary pre-commencement planning conditions were discharged by the 20th June 2019.

The Client undertook a nominal commencement of works prior to the 18th July 2019 and that planning application ref. P151314/F has been lawfully implemented. This has been confirmed through a letter from the LPA dated 25th July 2019.

A review of the planning policy context confirms that there has been no change in Herefordshire Council’s local planning policy. There have been several updates made to the NPPF, but these are not considered to impact on the principle for the SLR. There has also been a change in neighbourhood planning which has seen two neighbourhood plans being made since July 2016. A review undertaken of these documents confirms they acknowledge development of the SLR.

Planning application ref. P151314/F has been lawfully implemented and works to construct the SLR can proceed in accordance with the approved plans, however it is understood the Client seeks to make potential amendments to the Scheme. Any changes outside of the red line boundary would require a new planning application. There are several mechanisms available for amending a planning permission. It is recommended that once the nature and scale of any potential amendments have been established a further review is undertaken to advise on the most suitable mechanism for amending the planning permission. This matter should also be discussed with the LPA to ensure their ‘buy in’ on the preferred approach. Consideration should also be given as to whether the potential amendments trigger any changes to Likely Significant Effects as presented with the EIA. This might impact on the mechanism used to amend a planning permission as well as information required to support an application.

3. Review of Environmental Assessment

3.1 Introduction

Planning application ref. P151314/F was an EIA development and accompanied by an ES. A review of this ES has been undertaken with respect to the surveys carried out, data sources used, and guidance followed. The current validity of the conclusions is discussed with respect to changes that have since come about with the passage of time. Where relevant, other documents related to environmental assessments have also been reviewed.

Legislation, guidance and policy have been reviewed to identify changes that may impact environmental surveys and assessments should these need to be updated.

Finally, the next steps required to progress construction of the Scheme are described for three scenarios in Section 4:

- if the Scheme is progressed as currently consented;
- if there are material amendments proposed to the Scheme which fall within the existing development boundary and are considered consistent with the original permission, allowing for the submission of a planning application under Section 73 of the Town and Country Planning Act 1990 (As Amended) to vary a condition(s) attached to the original planning permission; and
- the proposed changes cannot be addressed through an amendment to the existing permission and a new standalone planning application is to be submitted.

3.2 Review of Existing Environmental Surveys and Assessments

A review of the ES that was submitted with planning application ref. P151314/F, and other associated documents, has been undertaken and is described in Table 4. This table makes reference to the validity of the planning application in the context of a future potential planning application.

Table 4: Review of Environmental Assessments submitted with the Planning Application

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
Issues Affecting the Whole ES	Issues Affecting the Whole ES	Issues Affecting the Whole ES	Issues Affecting the Whole ES
Consultation		Consultations with stakeholders and public consultation was undertaken as part of the planning application which this ES supports, and their responses were taken into account in the ES where applicable.	The consultation responses taken into account may not be considered representative of current stakeholders and the general public.
Opening Year		Assessments have been completed on the basis of construction occurring from the beginning of 2016 and the proposed Scheme being complete in late 2017, early 2018. Traffic figures have been calculated for the future years 2017 and 2032.	The temporal scope upon which the assessment is based is out of date as the proposed opening year has passed and the plan has been built out to incorporate new data as time has passed.
Air Quality	Air Quality	Air Quality	Air Quality
Air Quality Assessment (ES Chapter 5)	April 2015	A baseline monitoring survey was conducted Feb-May 2014. Exceedance of the annual mean objective value for NO ₂ recorded on Victoria Street. Elsewhere in the study area NO ₂ concentrations were below the objective value.	Given the time elapsed this data is considered out of date and not reflective of current conditions. Pollutant concentrations are often seen to reduce with time.

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
		<p>Air quality assessment found: No significant effects during construction. Negligible air quality effects at human receptors during operation. Slight adverse impacts during operation at statutory ecological designated sites. Habitat planting proposed to compensate loss. Negligible residual effect.</p>	<p>Baseline year used for model verification was 2012. This is now considered very old, and the baseline situation is likely to have changed. The assessed opening year of 2017 has passed, and a future opening year will likely result in smaller modelled concentration changes due to emissions improvements with time. All data, guidance, and tools used have been updated since the assessment was completed. Of particular note, changes to the assessment of nitrogen deposition at statutory ecological designated sites may result in the finding of larger impacts were this assessment to be conducted using the current methodology, due to the additional consideration of contributory ammonia emissions .</p>
Cultural Heritage	Cultural Heritage	Cultural Heritage	Cultural Heritage
Cultural Heritage Assessment (ES Chapter 6)	April 2015	<p>Cultural heritage assessment found: Two scheduled monuments and 21 listed buildings within the Outer Study Area (up to 1 km from the Scheme). After mitigation, a significant effect (moderate/large adverse) on the setting of Haywood Lodge Listed Buildings during construction and operation. After mitigation, a non-significant effect (slight adverse) at Dinedor Camp Scheduled Monument during construction and operation. After mitigation, a non-significant effect (slight/moderate adverse) at a listed milestone during construction.</p>	<p>Data collection undertaken using historical and modern maps, secondary sources and the Herefordshire Council Historic Environment Record. Given the time elapsed this data is likely to be out of date and further data/designations may now be available.</p>
Cultural Heritage Assessment (ES Chapter 6)	April 2015	<p>The inner study area (up to 300 m from the Scheme) was visited in October 2014 in order to assess its character, identify visible historic features and assess factors which may affect asset survival.</p>	<p>Given the time elapsed since this visit, the setting of the study area and any heritage assets may have changed.</p>
Archaeological Field Evaluation Written Scheme of Investigation (ES Appendix 6.2)	January 2015	<p>An Archaeological Field Evaluation Written Scheme of Investigation (WSI) has been devised in consultation with the Archaeological Advisor at Herefordshire Council.</p>	<p>Given the time elapsed and changes to guidance and methodology and the updated required for the desk study, the WSI may be considered out of date.</p>
Landscape	Landscape	Landscape	Landscape
Landscape and Visual Impact Assessment (ES Chapter 7)	April 2015	<p>The Landscape and Visual Impact Assessment found neutral to slight adverse landscape effects and neutral to large visual effects due to the proximity of the Scheme to residential properties. The temporal scope of the assessment is based on the following timescales;</p> <ul style="list-style-type: none"> • Baseline year (2014); • Construction Phase (start mid-201 6 with completion late 2017 / early 2018); and • Operational Phase - Year of Opening (late 2017 / early 2018) and 15yrs after opening. 	<p>The temporal scope upon which the assessment is based is out of date. The assessment has not been completed using the latest guidance.</p>
Landscape and Visual Impact	April 2015	<p>Baseline information has been gathered from desk-based studies. A Zone of</p>	<p>Given the time that has elapsed since the undertaking of this assessment, it is</p>

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
Assessment (ES Chapter 7)		Theoretical Visibility (ZTV) was generated for Scheme and the baseline was also informed by field work.	considered that the baseline conditions will have changed considerably from those used as the baseline for the assessment (2014).
Landscape and Visual Impact Assessment (ES Chapter 7)	April 2015	The potential effects of proposed street lighting and road signage have been taken into account in the assessment of landscape and visual effects.	The landscape assessment will not have taken account of improvements in lighting technology, particularly over the past five years. No standalone lighting assessment has been undertaken.
Landscape Viewpoints (ES Figure 7.2, 7.3)	December 2015	30 viewpoints selected and documented to assess the visual impacts of the Scheme.	Given the time that has elapsed, the viewpoint photography is unlikely to be reflective of current baseline conditions (new housing, vegetation growth etc). Additional receptors may also have been created as a result of additional development since 2014.
Arboriculture Report (ES Appendix 7.1)	April 2015	A field survey was undertaken in November 2014. Notable trees and woodland character were identified, impacts (including tree loss) were identified, and a method statement was outlined for the protection of trees during construction work.	It is explicitly stated that this report, and any recommendations made within it, are valid for a period of 12 months from the date of the site survey (November 2014). The condition and quality of trees since the survey is likely to have changed.
Ecology	Ecology	Ecology	Ecology
Habitat Regulations Screening Assessment	June 2016	No likely significant effects are expected during construction or operation at the Natura 2000 Sites considered (the River Wye Special Area of Conservation)	An updated Habitat Regulations Assessment (HRA) will be required having regard to all relevant case law relating to the Conservation of Habitats and Species Regulations (2017), the Habitats Directive and Birds Directive. This includes the key ruling by the Court of Justice of the European Union (CJEU) in the case of People Over Wind, Peter Sweetman v Coillte Teoranta (C-323/17) (CJEU, 2018). This case held that; <i>"it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site"</i> (paragraph 40). This establishes that 'mitigation measures' cannot be taken into account at the screening stage, but they can be taken into account in an Appropriate Assessment. The existing HRA Screening Report states that <i>"Likely significant effects were ruled out on the basis of hydrological protection measures during both construction and operation. Potential fragmentation effects have been addressed by including measures to maintain habitat permeability within the design. Incidental mortality and disturbance of species will be minimised by the inclusion of underpasses for otters and bats within the operational design."</i>
Ecology Assessments (ES Chapter 8)	April 2015	Desk study undertaken using information collated from Herefordshire Biological Records Centre and the Multi-Agency Geographic Information for the Countryside (MAGIC) online database.	Given the time that has elapsed, the data from these records is now considered out of date. Relevant guidance has been updated (e.g. guidelines for ecological assessment (The Chartered Institute of Ecologists and Environmental Managers, CIEEM, 2018), and Preliminary Ecological Assessment (CIEEM, 2017)). In

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
			addition, Sites of Importance for Nature Conservation (SINCs) have been replaced by Local Wildlife Sites (LWS).
Phase 1 Habitat Survey Report (ES Appendix 8.1)	November 2014	An Extended Phase 1 Habitat survey was undertaken by suitably experienced ecologists on 7 th and 8 th April 2014. This survey informed the suite of detailed surveys.	Given the time elapsed it is considered this survey and report is out of date and not fully reflective of the current ecological baseline conditions. Relevant guidance has been updated (CIEEM, 2017), and other species and habitats may now be rare or notable (e.g. Joint Nature Conservation Committee, JNCC, 2023).
N/A			It is possible that the Site may now have potential to support other protected or notable species or habitats (e.g. pine marten), or those that are newly identified as rare or notable (e.g. JNCC, 2023, British Trust for Ornithology, Birds of Conservation Concern 5, 2021).
Woodland Botanical Survey Report (ES Appendix 8.2) and Botanical Update Report in 2017	December 2014 / 2017	Woodland botanical surveys were undertaken by a competent botanist experienced in undertaking woodland surveys on the 18 th and 19 th September 2014. Five woodlands were assessed within close proximity to the Scheme. Habitats surveyed in 2017 were not found to have changed significantly since the surveys in 2014.	Noted that planning permission was granted in 2016. However, a number of objections were raised by the public in relation to carrying out woodland National Vegetation Classification (NVC) surveys outside the optimum season in 2014, undervaluing Grafton Wood and the lack of bryophyte and targeted species. Therefore, surveys were updated in 2017, which found no significant change from the 2014 results. Given the time elapsed since the 2017 surveys it is considered that these surveys are now out of date. The report will not be in accordance with current ancient woodland guidance from Natural England and the Forestry Commission (2022).
Hedgerow Report (ES Appendix 8.3)	December 2014	A hedgerow assessment was undertaken by competent botanists between the 17 th and 19 th of September 2014. Several species-rich and Important hedgerows were identified. A total of 35 hedgerows were assessed as part of the hedgerow survey.	It is noted in the ES that 12 species-rich hedgerows (some of which are classified as important under the Hedgerow Regulations 1997) will be bisected by the Scheme, and there are seven other species-rich hedgerows which may potentially be indirectly impacted. Given the time lapsed since the 2014 surveys, it is considered that these surveys are now out of date.
Terrestrial Invertebrate Report (ES Appendix 8.4)	December 2014	A general scoping invertebrate survey was undertaken on 28 th May 2014, with a follow up survey on 11 th September 2014. Five invertebrate species with conservation status were found during the survey.	It is noted in the ES that there is habitat loss (resulting in direct mortality of terrestrial invertebrates) within Grafton Wood and hedgerows. Additionally, temporary impacts through construction are considered on other habitat including a group of apple trees, the hedgerow oak pollard and Hayteasow Wood. Given the time lapsed since the 2014 survey, it is considered that it is now out of date. The report may not include species that are now listed as rare or notable, for example as species of principle importance by Defra and Natural England (2022).
Aquatic Invertebrate Report (ES Appendix 8.5)	November 2014	Sampling was carried out over two seasons in 2014: spring (28 th May 2014) and autumn (11 th September 2014). No uncommon or	Given the time lapsed since the 2014 survey, it is considered that it is now out of date.

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
		protected species were recorded during the survey.	
Great Crested Newt Report (ES Appendix 8.6) and Great Crested Newt Report 2018	December 2014 / April 2018	A great crested newt (<i>Triturus cristatus</i>) survey was undertaken between 28 th April and 3 rd June 2014. This species was recorded as present in all eight ponds which were assessed and evidence of breeding was found in five ponds. An updated report was published in December 2018 following a survey conducted between 10 th April and 20 th June 2017 to inform the discharge of planning conditions 10-11. This survey confirmed the presence of great crested nest in eight out of ten ponds which contained water.	Noted in the ES that no waterbodies suitable for great crested newts will be impacted from survey data in 2014, however impact on great crested newt terrestrial habitat. The surveys are considered out of date (CIEEM, 2019).
Reptile Report (ES Appendix 8.7)	December 2014	The survey area was visited on seven occasions between 5 th June 2014 and 30 th September 2014. Small numbers of common and widespread species were recorded.	Given the time lapsed since the survey, it is considered that it is now out of date.
Riparian Survey Report (ES Appendix 8.8)	January 2015	A water vole (<i>Arvicola amphibius</i>), white clawed crayfish (<i>Austropotamobius pallipes</i>), and otter (<i>Lutra lutra</i>) presence / likely absence survey was undertaken on 4 th September 2014. Water vole and white clawed crayfish were not recorded during the survey. Evidence of otter was found on Withy Brook.	Given the time lapsed since the survey, it is considered that it is now out of date. The report will not have been prepared with reference to Natural England's updated standing advice for protected species (2022).
Breeding Bird Report (ES Appendix 8.9)	December 2014	Six visits were undertaken between 29 th April 2014 and 9 th July 2014. 37 bird species were recording as breeding of which 14 were of conservation importance.	Given the time lapsed since the survey, it is considered that it is now out of date. The report will not have consideration of the updated Birds of Conservation Concern 5, British Trust for Ornithology, 2021.
Barn Owl Report (ES Appendix 8.10)	December 2014	A detailed barn owl survey was undertaken on 2 nd and 3 rd July 2014, 24 th and 25 th September 2014 and 10 th November 2014. One roost was identified but it was not a breeding site.	Given the time lapsed since the survey, it is considered that it is now out of date. The report will not have consideration of the updated Birds of Conservation Concern 5, British Trust for Ornithology, 2021.
Bat Activity Report (ES Appendix 8.11)	December 2014	A suite of bat surveys were undertaken across 2014. A relatively high number of bat passes was found with at least 10 species recorded. The survey area was considered to be 'bat rich'.	Bat survey guidance has been updated since 2014, and the existing surveys are considered to be out of date. The report will not have consideration for the Bat Conservation Trust guidelines (2023).
Bat Roost Report (ES Appendix 8.12)	December 2014	A suite of bat surveys were undertaken across 2014. Two adjacent trees were found to support bat roosts. The survey found the presence of major roosts within 10 km of the Scheme.	Bat survey guidance has been updated since 2014, and the existing surveys are considered to be out of date. The report will not have consideration for the Bat Conservation Trust guidelines (2023).
Dormouse Report (ES Appendix 8.14)	December 2014	A dormouse (<i>Muscardinus avellanarius</i>) presence / likely absence survey was conducted between May and November 2014. This species was not recorded during the survey.	Given the time lapsed since the survey, it is considered that it is now out of date.
Badger Survey	July 2014	A badger (<i>Meles meles</i>) survey was undertaken on 29 th , 30 th and 31 st July 2014. Eight outlier setts were recorded.	Badgers are highly mobile, and so the survey data is considered out of date and not in accordance with the Badger Trust's best practice guidance (2023).
Geology and Soils	Geology and Soils	Geology and Soils	Geology and Soils

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
Geology and Soil Assessment (ES Chapter 9)	April 2015	<p>Baseline conditions were identified from desk-based studies including the following: The Groundsure report for the site has been reviewed to provide a preliminary indication of potential ground stability issues at the site.</p> <p>Outline of the bedrock and superficial geology given using British Geological Survey (BGS) data.</p> <p>There are two active groundwater abstractions recorded by the Environment Agency within the study corridor.</p>	All data, guidance, and tools used have been updated since the assessment was completed. In particular, BGS updated to its latest Geology Viewer with more accurate and up to date records in 2022, and the Groundsure report will not feature the latest relevant information or be undertaken in line with up to date Law Society Guidance.
Geology and Soil Assessment (ES Chapter 9)	April 2015	A slight adverse effect (not significant) was found for geology and geomorphology due to the sterilisation of minerals in a Mineral Safeguarding Area (MSA). The mineral resource within the MSA in the study corridor is currently not being worked.	Given the time that has passed, it is unknown whether the mineral resources within the MSA are currently being worked and a review of recent planning applications/permissions would be required. In addition, the upcoming Minerals and Waste Local Plan may introduce new/altered MSAs.
Geology and Soil Assessment (ES Chapter 9)	April 2015	A slight/moderate adverse effect (not significant) was found for soils due to loss of Grade 2 agricultural land.	Given the time that has elapsed, the quality of agricultural land may have altered, and developments may have resulted in a loss of agricultural land.
Geology and Soil Assessment (ES Chapter 9)	April 2015	A slight effect (not significant) was found for groundwater for leaching and a neutral or slight effect (not significant) was found for end users for accumulation of gases for which mitigation of a Ground Investigation to obtain chemical data was recommended.	Any groundwater monitoring and contamination testing which was undertaken prior to commencement may now be considered out of date due to the time that has since elapsed.
Materials	Materials	Materials	Materials
Materials Assessment (ES Chapter 10)	April 2015	As part of the baseline conditions identification process 11 landfill sites for construction waste within close proximity to the site were identified.	Three of these landfills are no longer operational, and their capacity has likely significantly reduced since the assessment was undertaken.
Materials Assessment (ES Chapter 10)	April 2015	Effects of the proposed Scheme in relation to materials and waste were considered to be minor adverse (not significant) provided mitigation, primarily in the form of a Construction Environmental Management Plan (CEMP) and a Site Waste Management Plan (SWMP) is implemented.	All data and tools used have been updated since the assessment was completed. Policy and guidance regarding waste recycling and disposal for construction activities has changed since this assessment was undertaken, with greater emphasis placed on avoidance of landfill.
Noise and Vibration	Noise and Vibration	Noise and Vibration	Noise and Vibration
Noise and Vibration Assessment (ES Chapter 11)	November 2014	Baseline noise levels were identified by a noise survey. Attended noise measurements were taken at 4 locations for a period of 3 hours.	Given the time elapsed this data is considered out of date. Baseline noise levels may now be different.
Noise and Vibration Assessment (ES Chapter 11)	November 2014	<p>The noise and vibration assessment found: 4 NSRs would experience a major adverse impact during construction.</p> <p>5 NSRs would experience a major adverse impact during operation in the short term, 1 NSR would experience a major adverse impact during operation in the long term.</p> <p>The majority of NSRs would experience a decrease in noise levels.</p>	<p>All data, guidance, and tools used have been updated since the assessment was completed.</p> <p>Road noise maps were updated in 2019. In this latest dataset there are several Noise Important Areas (NIAs) to the north of the Scheme (IDs 14592, 7726, 7725, 11817*) which were not considered in the assessment.</p>
Effects on All Travellers	Effects on All Travellers	Effects on All Travellers	Effects on All Travellers
Effects on all Travellers (ES Chapter 12)	April 2015	Site visits and assessment of aerial photography provided the baseline data	Given the time elapsed this site visit and aerial imagery is not considered to reflect the current baseline.

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
		<p>enabling an assessment of Views from the Road.</p> <p>In order to determine the level of stress caused by fear of accidents actual Personal Injury and Collision (PIC) data has been acquired for a 5-year period on the existing roads which surround the proposed Scheme.</p>	<p>Collision and injury data is assessed for the previous five years and is now out of date.</p> <p>The methodology relating to Effects on All Travellers no longer exists, and elements of this assessment have been incorporated into the Population and Human Health Chapter.</p>
Community and Private Assets	Community and Private Assets	Community and Private Assets	Community and Private Assets
Community and Private Assets (ES Chapter 13)	April 2015	Baseline information was obtained from Defra's Agricultural Land Classification (ALC) (provisional), and, in the absence of a detailed survey all scheme agricultural land was assumed to be Grade 2.	<p>There have been no known updates to the ALC since 2015; however if detailed surveys have since been undertaken these may reveal a greater understanding of the baseline.</p> <p>The methodology relating to Community and Private Assets no longer exists, and elements of this assessment have been incorporated into the Population and Human Health Chapter.</p>
Community and Private Assets (ES Chapter 13)	April 2015	The proposed Scheme will involve 150 m ² of land take from Private Property (Pykeways). This is only 7% of the area of the property, and therefore there will be a Minor Adverse effect on Private Property.	Given the time that has elapsed since this assessment, it is possible that land agricultural ownership relevant to the Scheme may have altered and so the assessment of private property is considered out of date.
Road Drainage and the Water Environment	Road Drainage and the Water Environment	Road Drainage and the Water Environment	Road Drainage and the Water Environment
Road Drainage and the Water Environment (ES Chapter 14)	April 2015	<p>Baseline conditions of watercourses were informed by a site visit, with photographs presented. No surface water sampling has been undertaken to inform this ES. Water Framework Directive (WFD) Data on water quality was obtained for the River Wye and Norton Brook, but no information is held for other relevant watercourses.</p> <p>Water quality data was obtained from 2015 Water Framework Directive (WFD) Data (Cycle 2).</p>	<p>Given the time elapsed, these photos may no longer be representative of the current baseline. It is considered that water sampling of all relevant watercourses would be required.</p> <p>Data has now progressed to WFD Cycle 3 with updated quality assessments, in particular reductions in ecological and chemical quality from 'Good' to 'Moderate'.</p>
Road Drainage and the Water Environment (ES Chapter 14)	April 2015	<p>The road drainage and water environment assessment found, after mitigation:</p> <p>Neutral to slight to moderate adverse effects during construction including a slight to moderate adverse effect to Withy Brook due to increased sediment loading.</p> <p>Neutral effects during operation.</p> <p>Mitigation includes adherence to a CEMP during construction and a robust drainage system during operation.</p>	All data, guidance, and tools used have been updated since the assessment was completed.
Flood Risk Assessment (ES Appendix 14.4)	February 2015	The proposed Scheme is located entirely in Flood Zone 1, but local flood risk was identified at Withy Brook and Norton Brook. A flood risk assessment including flood modelling at Withy Brook has been carried out which demonstrates that the Scheme does not pose unacceptable flood risk to users of the proposed SLR or increase flood risk to people and property elsewhere.	All data, guidance, and tools used have been updated since the assessment was completed.
Cumulative Effects	Cumulative Effects	Cumulative Effects	Cumulative Effects

Document/Item	Date completed	Summary of Conclusion	Comment on Validity
Cumulative Effects (ES Chapter 15)	April 2015	Cumulative assessment based on developments identified as of January 2015.	Given the time that has passed, it is considered that the development identified as relevant for the assessment of cumulative effects (Tables 15.2 & 15.3) are now out of date. The findings of the cumulative assessment as laid out in ES Chapter 15 are therefore no longer accurate. This would have a knock on effect on each of the discipline chapters where they assess cumulative effects. Changes in guidance for assessment of cumulative effects has changed since the undertaking of this assessment, and the guidance used would now be considered insufficient. No assessment of combined effects is given.
Construction Environmental Management Plan	Construction Environmental Management Plan	Construction Environmental Management Plan	Construction Environmental Management Plan
Draft Construction Environmental Management Plan (CEMP), submitted with ES	April 2015	This draft CEMP sets out how environmental protection will be managed during construction. It states the mitigation measures proposed to reduce environmental harm, monitoring requirements, the requirements for implementation method statements, etc. It states that it is to be a live document kept up to date by the contractor, which should be updated and reviewed 'on a regular basis'.	A final CEMP has only been produced for Stage 1 of works. Given the time that has passed, it is considered that this document is out of date.
Draft CEMP, submitted with discharge of planning conditions 6&7	November 2018	This draft CEMP sets out how environmental protection will be managed during construction, with the inclusion of topic-specific sub-plans as required by planning condition 7. It states that the Final CEMP, owned by the contractor, must be updated by the Contractor on a minimum of a six-monthly basis.	A final CEMP has only been produced for Stage 1 of works. Given that more than six months has passed, it is considered that this document is out of date.

As discussed further in Section 4, below, any future potential planning application may require new assessments to be undertaken in order to reflect the current environmental baseline, incorporate any changes to the Scheme and be in line with the latest legislation and guidance.

3.3 Review of Changes to Legislation, Policy and Guidance with respect to Environmental Assessment

Table 5: Review of Changes to Legislation, Policy, and Guidance with respect to Environmental Assessment

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
General – National	General – National	General – National
EIA Regulations	Updated in 2017	A number of significant changes were introduced under the 2017 update, including the need to consider the effects on the environment arising from: <ul style="list-style-type: none"> the vulnerability of development to major accidents and disasters (MADs); impacts from waste or use of natural resources;

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
		<ul style="list-style-type: none"> impacts on and resilience to climate change; and impacts on cultural heritage and landscape. <p>The update also introduced the need for a consideration of the environmental effects of alternatives to the proposed development and to ensure the those preparing the Environmental Statement were 'competent experts'.</p>
BNG	The provision for a 10% Biodiversity Net Gain to be a condition of planning permission in England was introduced under the Environment Act 2021, and is currently expected to come into effect in January 2024.	The requirement for developments to have undertaken a BNG assessment and to demonstrate BNG gain was not present at the time of the submission of the planning application, and would be relevant if either an amendment or full application is required.
DMRB guidance (including Interim Advice Notes)	<ul style="list-style-type: none"> LA 101 – Introduction to environmental assessment, last updated in 2019; LA 102 – Sustainability and environment, last updated 2019; LA 103 – Scoping projects for environmental assessment, last updated 2020; LA 104 – Environmental assessment and monitoring; LA 105 – Air Quality, last updated 2019; LA 106 – Cultural heritage assessment, last updated 2020; LA 107 – Landscape and visual effects, last updated 2020; LA 108 – Biodiversity, last updated 2020; LA 109 – Geology and Soils, last updated 2019; LA 110 – Material assets and waste, last updated 2019; LA 111 – Noise and vibration, last updated 2020; LA 112 – Population and human health, last updated 2020 (superseding Effects on All Travellers and Community and Private Assets); LA 113 – Road drainage and the water environment, last updated 2020; LA 115 – Habitats Regulations assessment, last updated 2020 	Wholesale update to guidance for all disciplines. This makes it difficult to compare changes in the impacts between 2014 and the current baseline (for more detail, see Section 4 below).
Climate requirements	<ul style="list-style-type: none"> LA 114 – Climate, last updated 2021. 	National Highways guidance on the assessment of climate impacts to and from the Scheme was issued in 2019 for the first time, and updated in 2021. A climate chapter of the ES was not produced to inform the current planning application, but would now be considered to be required for a new planning application, and likely a S73 amendment.
General - Local	General - Local	General - Local

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
The Herefordshire Unitary Development Plan (UDP) (Herefordshire Council, 2007)	Superseded in 2015 by the Local Plan – Core Strategy	<p>Introduction of more specific environmental policies including:</p> <ul style="list-style-type: none"> • LD3 – Green Infrastructure; • SD1 – Sustainable design and energy efficiency; • SD 2 – Renewable and low carbon energy • SD3 – Sustainable water management and water resources; and • SD4 – Waste water treatment and river water quality. <p>Please note: Some of the assessments in the 2014 ES have used the 2007 plan whilst others have used the newer 2015 plan.</p>
Cultural Heritage	Cultural Heritage	Cultural Heritage
Standard and guidance for historic environment desk-based assessment (The Chartered Institute of Archaeologists (CIfA), 2012)	Later version published in 2014 and updated in 2020	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Code of conduct: professional ethics in archaeology (CIfA, 2013)	Later version published 2014, updated 2022	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Management of Research Projects in the Historic Environment (Historic England, 2006)	Reissued 2015	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
The Setting of Heritage Assets (Historic England, 2011)	Second Edition Issued 2017	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Scheduled Monuments & nationally important but non-scheduled monuments (Department for Culture, Media & Sport, 2010)	Updated 2013	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Seeing the History in the View: A Method for assessing Heritage Significance within Views (English Heritage, 2011)	Superseded by The Setting of Heritage Assets, 2017	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
After ICOMOS, 2010 Guidance on Heritage Impact Assessment for Cultural Heritage Properties (International Council on Monuments and Sites, 2010)	Updated 2011, Integrated into the Guidance and Toolkit for Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS, IUCN, 2022)	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Herefordshire Landscape Character Assessment (Herefordshire Council, 2004)	Superseded by the Herefordshire County Landscape Character Assessment published 2023 (Herefordshire Council)	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-Excavation (English Heritage, 2002)	Second Edition published in 2011.	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
1992 Standards in the Museum Care of Archaeological Collections (Museums' and Galleries' Commission (1992)	Superseded by the Standards and Guidance in the Care of Archaeological Collections (Society for Museum Archaeology, 2020)	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Standard and Guidance for archaeological field evaluation (ClfA, 2009)	Updated in 2014.	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
The Herefordshire Heritage Services [museum] document Standards for the Deposition of Archaeological Archives with Herefordshire Heritage Services (1999), as amended (Herefordshire Museum Services, 1999)	Superseded by the Collections Development Policy 2020-2024 (Herefordshire Museum Service, 2020)	Updated references to latest Historic England guidance. This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Landscape	Landscape	Landscape
Landscape Character Assessment Guidance for England and Scotland (Countryside Agency (CA) and Scottish Natural Heritage (SNH), 2002)	Superseded by Landscape and seascape character assessments guidance (Natural England, 2014).	This would need to be taken into account when either discharging conditions or preparing a future potential planning application.
Ecology	Ecology	Ecology
CJEU. (2018). Judgment of the Court (Seventh Chamber) of 12 April 2018. People Over Wind and Peter Sweetman v Coillte Teoranta.	New precedent	Mitigation can no longer be used to conclude no likely significant effects at the screening stage, a full appropriate assessment would be required.
The UK Post-2010 Biodiversity Framework (Joint Nature Conservation Commission & Defra, July 2012)	An updated Implementation Plan was produced in July 2018.	
National Planning Policy Framework (2023)	Updated in 2018, 2019 and 2023	Consideration of updates required. Particularly with regards to ancient woodland. The NPPF now states that <i>“development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, for example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.”</i>
Conservation of Habitats and Species Regulations 2017 (as amended in 2019). London: HMSO	Legislation has been updated in 2017 and 2019	Consideration of updated legislation required.
Environment Act (2021)	New legislation	Requires consideration, and is the legal driver for BNG assessment. Will require all relevant developments to achieve a minimum 10% net gain in biodiversity units relative to the site's baseline biodiversity value in the near future.
Countryside and Rights of Way Act 2000. London: HMSO	New legislation	Requires consideration
Herefordshire Green Infrastructure Strategy (HC, 2010)	Superseded by the Herefordshire Green and Blue Infrastructure Strategy (HC, 2023)	

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
Guidelines for Ecological Impact Assessment (Institute of Ecology and Environmental Management, 2006)	Replaced by The Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018)	New survey and assessment guidance.
Institute of Ecology and Environmental Management (2006). Guidelines for Ecological Impact Assessment.	Guidelines for Preliminary Ecological Appraisal (2nd Edn.). Chartered Institute of Ecology and Environmental Management, Winchester (2017).	Updated guidance
Advice note on the lifespan of ecological reports & surveys. Chartered Institute of Ecology and Environmental Management, Winchester (2019).	New guidance	Guidance on the lifespan of ecology reports – maximum three years old.
Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide. CIEEM, CIRIA, IEMA (2016)	New guidance	A guide to BNG
Biodiversity Metric 4.0. Natural England (2023)	New metric	For application to BNG
The Biodiversity Metric 4.0 – User Guide, Technical Annex 1 & Technical Annex 2. Natural England (2023)	New guidance	Guidance for using BNG
UKHab (2023) The UK Habitat Classification System UKHabs Classification Version 2 published in 2023	New application	For use in BNG.
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions. Natural England and Forestry Commission (2022)	New guidance	Requires consideration – states “ <i>You should refuse planning permission if development will result in the loss or deterioration of ancient woodland, ancient trees and veteran trees unless both of the following applies:</i> - <i>there are wholly exceptional reasons</i> - <i>there’s a suitable compensation strategy in place (this must not be a part of considerations of wholly exceptional reasons)”</i>
Habitats and species of principal importance in England. JNCC (2023)	Ongoing updates	Relevant species and habitats to be considered during survey scoping, fieldwork and assessment
Protected species and development: advice for local planning authorities. Natural England’s Standing Advice on Protected Species	All advice updated in 2022	Updated advice to be considered
UK BAP (various)	Habitats and species of principal importance in England. Defra and Natural England (2022).	Updated list of species and habitats for consideration
Birds of Conservation Concern 4, British Trust for Ornithology (2015)	Birds of Conservation Concern 5, British Trust for Ornithology (2021)	Updated list of species for consideration
Bat Surveys for Professional Ecologists: Good Practice Guidelines (3 rd edition). Collins, J.(ed) (2015). The Bat Conversation Trust. London.	Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). Collins, J.(ed) (2023). The Bat Conversation Trust. London.	Updated survey methodology and assessment guidance
Guidance Note 08/23: Bats and Artificial Lighting at Night. Bat Conservation Trust	New guidance.	Guidance regarding bats and lighting.

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
& Institute of Lighting Professionals (2023).		
Badger Protection: Best Practice Guidance for Developers, Ecologists and Planners (England). Badger Trust (2023)	New guidance.	Updated guidance
Invasive Non-Native Alien Species (Enforcement and Permitting) Order 2019	New legislation.	Requires consideration of relevant invasive species
The Water Environment (Water Framework Directive (WFD)) (England and Wales) Regulations 2017	New legislation.	Requires consideration. Sets out requirements to prevent the deterioration of aquatic ecosystems; protect, enhance and restore waterbodies to 'good' status; and achieve compliance with standards and objectives for protected areas.
Environment Agency (2017). Freshwater macro-invertebrate sampling in rivers Operational Instruction 018_08. Environment Agency, Bristol, UK.	New guidance.	Requires consideration for aquatic invertebrate surveys.
Naura, M. (2021). River Habitat Survey Input and Analysis Software: Riverdene Consultancy. Version 1.5: January 2021.	New guidance.	Requires consideration for the assessment of hydromorphological condition of rivers for the WFD.
Riverdene Consultancy (2016a). Hydromorphology and geomorphology guidelines: Hydromorphological indices derivation: Instructions for calculating the Habitat Modification Score using River Habitat Survey data. (Based on Environment Agency guidelines for calculating HMS scores, 2003).	New guidance.	Requires consideration for the survey of watercourses.
Riverdene Consultancy (2016b). Instructions for calculating the River Habitat Quality Class using RHS. Based on Naura (2001) River Habitat Quality Assessment and Walker (2005) River Habitat Objectives (Environment Agency internal reports). Riverdene Consultancy	New guidance.	Requires consideration for the survey of watercourses.
WFD-UKTAG (Water Framework Directive – United Kingdom Advisory Group) (2020). UKTAG River Assessment Method Macrophytes and Phytobenthos: Phytobenthos - Diatoms for Assessing River and Lake Ecological Quality (River DARLEQ3).	New guidance.	Requires consideration for the survey of watercourses.
CJEU. (2018). Judgment of the Court (Seventh Chamber) of 12 April 2018. People Over Wind and Peter Sweetman v Coillte Teoranta.	Case law relating to the 2017 Regulations, the Habitats Directive and Birds Directive	For consideration for Habitat Regulations Assessment (HRA). This case held that; "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site" (paragraph 40). This establishes that 'mitigation measures' cannot be taken into account at the screening stage, but they can be taken

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
		into account in an Appropriate Assessment
Department for Levelling Up, Housing and Communities. (2021, February 24). Guidance: Habitats Regulations Assessments: Protecting a European Site	New guidance	For consideration for HRA.
European Commission. (2001). Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Luxembourg: Office of Official Publications of the European Communities	New guidance	For consideration for HRA.
The Planning Inspectorate. (2017, November). Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects, Version 8. Retrieved November 07, 2021 ¹ .	New guidance	For consideration for HRA.
The Planning Inspectorate. (2018). Advice Note Nine: Rochdale Envelope. Retrieved January 24, 2022 ² .	New guidance	For consideration for HRA.
Geology and Soils	Geology and Soils	Geology and Soils
Contaminated Land Report 11 Model Procedures for the Management of Land Contamination (Environment Agency, 2004)	Withdrawn 2020 and replaced with the Land Contamination Risk Management (LCRM) guidance, last updated July 2023 (Environment Agency, 2023).	
The saved minerals and waste policies of the Herefordshire Unitary Development Plan (UDP) (Herefordshire Council, 2007)	HC Minerals and Waste Local Plan to be introduced to replace the saved minerals and waste policies of the Unitary Development Plan and would be in place by the time of any future assessment.	
Materials	Materials	Materials
Waste Strategy for Herefordshire and Worcestershire (Herefordshire Council and Partners, 2011)	Updated 2022, due to for review 2023.	
Noise and Vibration	Noise and Vibration	Noise and Vibration
Environmental Noise (England) Regulations 2006 (UK Government, 2006)	These regulations, the enactment of the European Noise Directive (2002/49/EC), were amended in 2018.	
Noise Action Plan for Major Roads (Defra, 2010)	Updated 2019.	
Effects on All Travellers	Effects on All Travellers	Effects on All Travellers
Rights of Way Improvement Plan (RWIP) (HC, 2007)	Updated to 2018-2028 version.	Builds upon discussions with the local community and reflects changes in needs.
Road Drainage and the Water Environment	Road Drainage and the Water Environment	Road Drainage and the Water Environment

¹ National Infrastructure Planning: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/>

² National Infrastructure Planning: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/>

Legislation/Guidance	Date of revision/ introduction	Comment on Changes
Groundwater Protection: Policy and Practice (GP3) (Environment Agency)	Replaced by The Environment Agency's approach to groundwater protection (2018)	
Pollution Prevention Guidelines (PPGs) (Environment Agency, 2011)	Withdrawn 2015. Replaced by the Guidance for Pollution Prevention (GPP) (Environment Agency, 2021)	
Herefordshire Strategic Flood Risk Assessment (SFRA) (Herefordshire Council)	Updated 2019	

A considerable amount of the legislation / guidance which underpins the planning application for the Scheme has subsequently been updated or superseded, or newer guidance / requirements have been introduced. As discussed further in Section 10, any future potential planning application would require new assessments to be undertaken where guidance has changed significantly or did not exist previously.

4. Transport modelling and appraisal review

This section provides Herefordshire Council with a summary of the transport modelling and appraisal documentation used to appraise the Hereford Southern Link Road (SLR).

This note includes the following four sections:

1. A review of the available information relating to the planning application of the SLR and associated works (P151314/F³)
2. A review of transport modelling and appraisal relating to the SLR undertaken since the submission of the planning application
3. Recommendations for the future transport modelling and appraisal of the SLR
4. Summary of the information presented in this note

4.1 Review of Available Information Relating to the Planning Application of the Hereford Southern Link Road

All documentation presented as part of the planning application has been reviewed, and from which the following has been concluded.

- The Hereford Multi-Model Transport Model (HMMTM) has been used to assess the SLR.
- HMMTM was developed by Amey, and subsequently modified by JMP Consultants Limited
- The model uses SATURN software alongside a suite of transport models for the town which collectively make up the HMMTM
- The model represents a 2012 base year, and forecast years of 2017 and 2032 – both of which were used to assess the SLR.
- The model represents an average weekday, and the following time periods:
 - AM peak hour (08:00-09:00)
 - Interpeak average hour (10:00-16:00)
 - PM peak hour (17:00-18:00)

This information was provided in the following three documents which were submitted as part of the planning application:

- 77. Transport Assessment Part 1
- 84. Transport Assessment Part 8
- 122. Briefing Note - Transport Impacts & benefits Arising from SLR

Through AECOM's work with Herefordshire Council on other projects, AECOM have had access to other documentation relating to the HMMTM. From this, the following information has been deduced:

2011.03 - Interim Forecast Report Rev East Route Options (TPi), March 2011

³ [Planning Search – Herefordshire Council](#)

- HMMTM uses DIADEM software to undertake variable demand modelling to forecast car, public transport (bus, coach and rail), cycle and walk demand matrices

4.2 A review of transport modelling and appraisal relating to the SLR undertaken since the submission of the planning application

Since the submission of the planning application, additional transport modelling and appraisal work has been undertaken on the SLR. The additional documentation has been reviewed and is summarised below.

- The Hereford Transport Model (HTM) has been built to assess a range of transport measures and local plan / core strategy proposals alongside providing inputs to transport business cases and environmental appraisal.
- HTM was developed by WSP, on behalf of Balfour Beatty Living Places
- The model comprises of a full transport demand model, with separation highway and public transport assignments, which interact under the demand model. This allows transport schemes that impact the highway, public transport and active networks to be tested.
- The model uses PTV Visum software for the transport demand and public transport assignment models, and SATURN software for the highway assignment model.
- The model represents a 2016 base year, and forecast years of 2020, 2026, 2032, 2035, 2041 and 2051.
- The model represents an average weekday, with the following time periods being represented in the HTM
 - Transport demand model
 - AM peak hour (07:00-10:00)
 - Interpeak peak hour (10:00-16:00)
 - PM peak hour (16:00-19:00)
 - Highway assignment model
 - AM peak hour (08:00--09:00)
 - Interpeak average hour (10:00-15:00)
 - PM peak hour (17:00-18:00)
 - Public transport assignment model
 - AM peak hour (08:00--09:00)
 - Interpeak peak hour (11:00-12:00)
 - PM peak hour (17:00-18:00)
- The HTM demand model represents road (car, light goods vehicles, and heavy goods vehicles), public transport (bus and rail), and active modes (walk and cycle)
- The model has been developed in accordance with the September 2016 release of the DfT's Transport Analysis Guidance (TAG) Databook
- The transport modelling of the Hereford Transport Package assumes the following:
 - The SLR opens in 2020
 - The bypass (a continuation of the SLR) opens in 2026
 - The end of the LTP is 2032
- The transport modelling economic appraisal of the South Wye Transport Package considers the SLR (connecting the A49/B4399 roundabout with the A465) and the associated active travel measures in the South Wye area

- DfT’s TUBA (v1.9.11) software have been used to economically appraise the transport user benefits of the South Wye Transport Package using TAG Databook May 2018.
- DfT’s CobalT (v2013.2) software have been used to economically appraise the accidents of the South Wye Transport Package using TAG Databook December 2016.
- The economic appraisal of the South Wye Transport Package (SLR and associated active travel measures) assumes a scheme opening year of 2020, and uses forecast years of 2020, 2026, 2032, 2041 and 2051 as inputs to the appraisal.
- The scheme costs of the South Wye Transport Package have been calculated in Q4 2018 prices, and total £34,719,000 (excluding maintenance) for both the SLR and active travel measures.
- The economic appraisal of the South Wye Transport Package has been undertaken over a 60-year period, from 2020 to 2079.
- This economic appraisal of the South Wye Transport Package has been undertaken using outputs from the highway assignment model only. Therefore, impacts to public transport and active travel users are not captured.
- The following table 6 summarises the benefit to cost ratio of the South Wye Transport Package as reported in February 2019.

Table 6: BCR South Wye Transport Package

Type	Benefits (£000s)
<i>Travel Time</i>	£69.357
<i>Operating costs – fuel</i>	-£1,764
<i>Operating costs – non-fuel</i>	-£5,517
<i>Indirect taxes</i>	£4,216
<i>Greenhouse gas</i>	-£1,961
Total (Present Value Benefits)	£64,331
Present Value Costs	£23,444
Benefit Cost Ratio	2.74
<i>Value for Money Category</i>	<i>High</i>

- In accordance with DfT’s TAG, both a low growth and high growth sensitivity test has been undertaken of the South Wye Transport Package. The results of which are reported below.

Table 7: BCR Sensitivity testing South Wye Transport Package

Type	Benefits (£000s)		
	Core	Low Growth	High Growth
Total (Present Value Benefits)	£64,331	£55,559	£79,335
Present Value Costs	£23,444	£23,444	£23,444
Benefit Cost Ratio	2.74	2.37	3.38

This information was provided in the following three documents which were submitted as part of the planning application:

- Hereford Transport Model Demand Model, Demand Model Validation Report, WSP – February 2019
- Traffic Forecasting Report, Hereford Transport Package, WSP – July 2018
- South Wye Transport Package Economic Appraisal Report, WSP – February 2019

4.3 Recommendations

Following the review of the documentation available relating to the SLR, the below recommendations have been made for any future transport modelling and appraisal of the SLR.

- The transport modelling is undertaken in the latest strategic transport model available in the Hereford region that is suitable for the appraisal of the SLR.

- The latest transport modelling and appraisal of the SLR has been undertaken in a model that has been calibrated and validated to a base year of 2016, 7 years ago. It is recommended that any future work is undertaken in a strategic transport model with a more recent base year.
 - This is in accordance with TAG Unit M2.2⁴ which states *“Former guidance (withdrawn sections of the Design Manual for Roads and Bridges) indicated that models should not be used without justification where the source data is more than five years old when used for detailed scheme appraisal because there might be significant changes to the travel patterns and traffic level. This simple threshold should not be used, as there can be significant changes that would make the use of more recent data inappropriate or there may have been little change and older data may be acceptable. Changes such as the closure or opening of a major retail centre or major transport infrastructure such as a new bypass would be expected to result in the need to collect and use more recent data.”*
- The uncertainty log is reviewed to ensure any “near certain, or more than likely” transport interventions and developments are included in the transport modelling.
 - The uncertainty log was initially compiled in 2016. It is anticipated that this will need revising to ensure the forecast of the SLR is robust. This is likely to include updating the transport model forecasts to include the latest Herefordshire Local Plan (2021-2041).
 - This is in accordance with TAG Unit M45, which states “The purpose of the uncertainty log is to record the central forecasting assumptions that underpin the core scenario and record the degree of uncertainty around these central assumptions.”
- The opening year of the SLR is reviewed and revised in any future transport modelling forecasts and appraisal.
- The scheme design of the SLR is reviewed to ensure the transport modelling reflects the latest scheme designs.
- The transport modelling of the SLR, and any associated schemes, is undertaken in accordance with the latest version of the DfT TAG.
- If the HTM is used for any future transport modelling and appraisal of the SLR, the forecasts are revised in accordance with DfT’s TAG. TAG Unit M4 recommends that an adjustment is applied to the forecast years if the base year of the transport model been calibrated before the COVID-19 pandemic to account for the longer-term travel impacts of COVID-19.
 - It is well documented that the impact of COVID-19 significantly reduced trips during 2020, 2021 and in early 2022. The current transport network (Q3 2023) continues to see a reduction in commuting trips compared to pre-COVID-19, and fewer trips during the peak hours. The transport modelling used in the appraisal of the SLR was undertaken before the COVID-19 pandemic, and therefore the transport modelling and appraisal forecasts do not consider any changes to trip patterns or volumes.
 - This is in accordance with TAG Unit M4, which states “it is the Department’s view and recommendation that this evident suppression of travel demand relative to a pre-pandemic projection of demand at this time should be appropriately represented in transport analysis. This is important particularly in appraisal and analysis supporting transport investment decisions. ...In transport modelling terms, therefore, the guidance in TAG Unit M2.2 applies. That is, this is an event of a significant change in trip patterns. To account for COVID-19 related changes, trip *matrices based before the beginning of the pandemic should ideally be rebased, or if this is not possible, an appropriate adjustment applied to model inputs or outputs in a proportionate way.*”
 - The economic appraisal of the SLR calculates that 27% of the Present Value Benefits of the SLR are from commuting trips, and 20% are from business trips. It is anticipated that reviewing the model forecasts in accordance with DfT’s TAG, would reduce the benefits resulting from these two purposes, therefore reducing the Present Value of Benefits and the Benefit Cost Ratio, which may impact the Value for Money Category of the scheme.

⁴ DfT TAG Unit M2.2 Base Year Demand Matrix Development, May 2020 - <https://assets.publishing.service.gov.uk/media/5fbfd998fa8f559e32b4d25/tag-m2-2-base-year-matrix.pdf>

⁵ DfT TAG Unit M4 Forecasting and Uncertainty, May 2023 - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1161977/tag-unit-m4-forecasting-and-uncertainty.pdf

- Any future transport modelling is undertaken using the latest transport demand forecasts available in the NTEM and TEMPRO.
- The latest economic appraisal of the transport user benefits of the SLR has been undertaken in DfT's TUBA software. The version used was 1.9.11 (June 2018 release). It is recommended that any appraisal of the SLR uses the latest version of the software.
- The latest economic appraisal of the accidents associated with the SLR has been undertaken in DfT's CobalT software. The version used was 2013.2 (2013 release) alongside parameter version 2016.2 (December 2016). It is recommended that any appraisal of the SLR uses the latest version of the software and parameters file.
- It is recommended that any future appraisal of the SLR reviews the:
 - Scheme costs
 - It is anticipated that the scheme costs would increase, at least in accordance with inflation and the cost of materials. An increase in scheme costs will increase the Present Value Costs of the scheme, and will reduce the Benefit to Cost Ratio, and therefore may impact the Value for Money Category of the scheme.
 - Cost profile
 - Opening year
 - It is anticipated that the opening year of the scheme would be delayed to at least 2024
 - Appraisal period
 - It is anticipated that the appraisal period would change from 2020 – 2079, to 60 years from the proposed opening year (e.g. 2024 – 2093). The DfT's TUBA software interpolates between modelled years, and assumes no growth in scheme benefits beyond the last modelled year, 2051. Assuming the same modelled years, but reviewing the appraisal period, is likely to impact the Present Value Benefits of the SLR as there would be more years where no growth in scheme benefits is assumed.
- The economic appraisal of the South Wye Transport Package was undertaken using outputs from the highway assignment model only. It is recommended that any future economic appraisal also considers the economic impact to public transport and active travel users as the scheme may generate mode shift.
 - For example, TAG Unit A5.5⁶ states *“Even if a transport scheme is not aimed at active modes specifically, it may have important effects on their use, particularly where it causes mode shift. For example, urban road improvements might increase car use, reducing the number of active mode users.”*

4.4 Summary

The documentation relating to the strategic transport modelling and appraisal of the Hereford Southern Link Road and associated works has been reviewed with respect to the Department for Transport's Transport Analysis Guidance. At the time the strategic modelling and appraisal was undertaken, February 2019, the forecast and appraisal of the scheme was considered to be in accordance with industry guidance.

As outlined in the recommendations, there are a number of refinements to the strategic transport modelling and appraisal of the SLR which should be addressed to ensure the work is consistent with the latest TAG issued by the DfT. These relate to a variety of topics, including the age of the strategic transport model, uncertainty log, representation of trip rates and travel patterns in the model and the impact of COVID-19, assumptions about the design and opening of the SLR, and ensuring the full impact of the scheme is captured in the latest version of DfT software.

⁶ DfT TAG Unit A5.5 Highway Appraisal, January 2014 - <https://assets.publishing.service.gov.uk/media/5fc8f2068fa8f5475152ab8c/tag-a5-5-highway-appraisal.pdf>

Should this scheme require additional funding from the DfT, it is expected that Herefordshire Council will be asked to address the strategic transport modelling and appraisal which has been undertaken, and update traffic forecasts and economic appraisal to ensure they are in accordance with current DfT TAG.

5. Highway Design Review

This section of the report reviews the current planning application highway design to check compliance with the current design standards. This design check is based on the Parsons Brinkerhoff drawing 'Figure 3.3' as submitted with the planning application and included in Appendix A. The check has not included the later options appraisal designs produced by WSP reference '2019.02 - SWTP Option Refinement Report (WSP)'. 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 SLR were superseded in 2020 by a new suite of documents to have a clear consistent format. Generally, the content of the standards from a technical perspective for the geometrical design of highways has not changed but has been made to be read in a style that clearly states what shall be done. The following paragraphs review the SLR compliance with current standards.

6. Geometric Review of Scheme

6.1 Horizontal and Vertical Alignment

According to the Hereford Planning Statement, the SLR has been designed to a 100kph design speed. The Clehonger Link has been designed for a 70kph design speed.

The alignment of the proposed SLR and Clehonger Link have been 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 CD109 'Highway Link Design' issued March 2020. The Route Plan and Longitudinal Section for the SLR can be found in drawing number 'Drawing reference Figure 3.3' shown in Figure 1.

The horizontal alignment has been reviewed against CD109 (Issued March 2020) to understand whether it is compliant with the latest design standards. The SLR design utilises three horizontal curves with radii of 720m, while the Clehonger Link has a single horizontal curve of 360m radius which all meet the desirable minimum requirements as set out in CD109 Table 2.10. These curves would be required to have a superelevation of 5%, however the current plans and files provided on the planning portal webpage do not include any information regarding crossfalls so we have not been able to review this against the design for crossfall and superelevation.

In the proposed design, transitions have been provided as per CD109. Clause 4.12 With regards to the SLR, the transitions used for the 720m radii curves all have a length of 99m which is the correct transition length for the horizontal curves used. Use of the Equation in CD109 paragraph 4.13 shows that the transition length would be 99.1m when using a q value (rate of increase of centripetal acceleration) of 0.3 metres / sec³ which is acceptable. The transitions length for the 360m radii curve on the Clehonger Link has not been provided on the corresponding long section, however a scaled measurement off the available plan shows a single transition length for the western tie in to the B4349 has been used at a length of approximately 27m. To get a transition length of 27m, you would have to increase the q value above the maximum limit of 0.6 metres / sec³ and hence this would be a departure from standards. There is no transition to the eastern side but this is part of the approach to the roundabout and is therefore not required.

The vertical geometry of the proposed SLR and Clehonger Link design includes a combination of tangents and crest and sag curves. On the SLR, the longitudinal gradients along the tangents range between minimum -1.5% and maximum 5%. In the locations of the horizontal alignment where superelevation is required, the longitudinal gradient is greater than + or - 0.5% which meets the recommendations of CD109 clause 4.8.3. The edge longitudinal fall is required to be 0.5% minimum to ensure drainage of the scheme. Many of the transitions fall

within areas of low long fall, bottom of sags, tops of crests and gradients of 0.7% - Depending on the length the superelevation change is applied over there is a high chance of edge gradients being less than 0.5% with minimal crossfalls also resulting in flat spots, or undesirably long drainage paths if long change over lengths used. Rolling crowns are likely to be needed to ensure good drainage.

The maximum gradient for the proposed SLR, of 5%, is below the desirable maximum of 6% for an All-purpose single carriageway as outlined in CD109 Table 5.1 and therefore acceptable. On the Clehonger Link, the longitudinal gradients along the tangents range between minimum -1.84% and maximum 0.7%. In the locations of the horizontal alignment where superelevation is required, the longitudinal gradient is greater than + or - 0.5% which meets the recommendations of CD109 clause 4.8.3 (this is not a requirement). There are no issues with the maximum gradient of 0.7% if the highway drainage gullies have been spaced appropriately.

With regards to the SLR, the vertical geometry uses a combination of 3 crest curves and 3 sag curves. The three crest curves have K values of 100, 55 and 100 respectively whilst the 3 sag curves have K values of 26. The desirable minimum crest K value for a design speed of 100kph is given as 100 in CD109 Table 2.10 whilst a value of 55 is one step below the desirable minimum crest K value. Likewise, the desirable minimum sag K value for a design speed of 100kph is given as 26. In summary, the sag and crest curves meet the desirable minimum values, except for one of the crest curves which is one step below the desirable minimum. As for the Clehonger Link, it uses a single crest and sag curve with K values of 36 and 24 respectively. The crest curve is above the desirable minimum requirements from CD109 Table 2.10 of 30 while the sag curve is also above the corresponding desirable minimum requirement of 20.

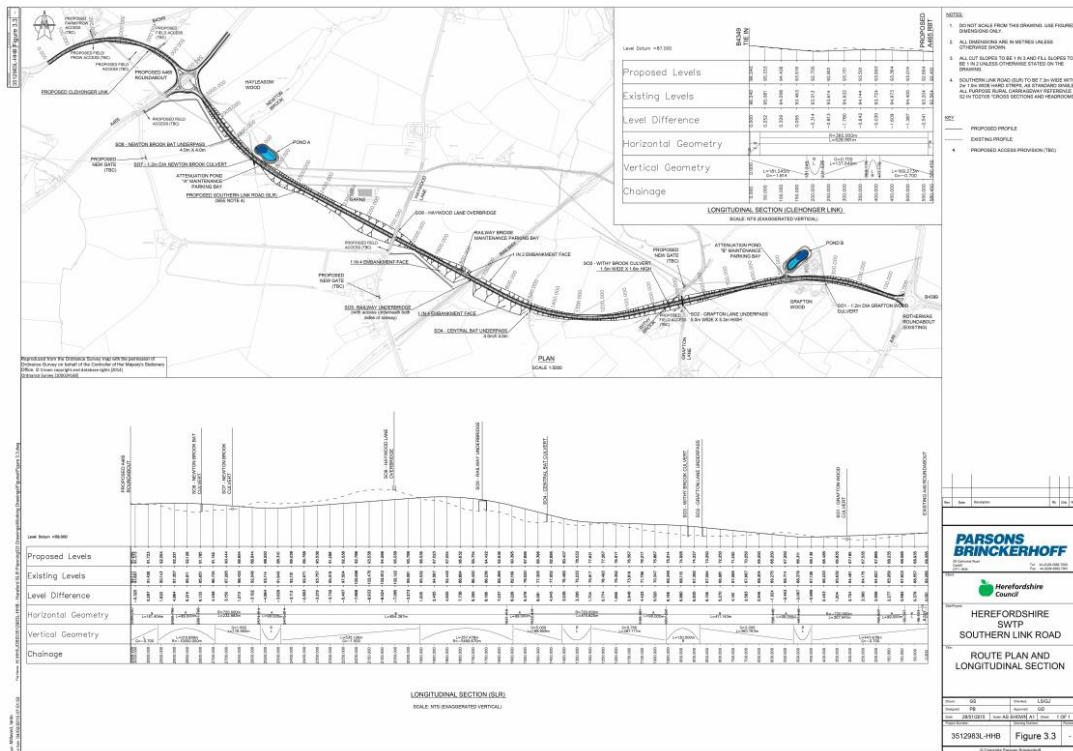


Figure 1 - Current Route Plan and Longitudinal Section Drawing

In summary for this section, there is a one-step relaxation in vertical curvature on the SLR for the crest curve with K value 55 located between chainages 1600.000 and 1950.000.

There is a horizontal departure from standards related to the horizontal geometry on the Clehonger Link where the transition length at approximate chainage 15.000 is shorter than the required length of 34m and uses a q value greater than 0.6 metres / sec³, this violates CD109 clause 4.14.

6.2 Cross-section and Lane Widths

The Planning Statement states that the SLR has been designed as a standard two lane single, all-purpose rural carriageway in accordance with Figure 4-3a of TD27/05 'Cross-sections and Headrooms'. This standard has been superseded by CD127 'Cross-sections and Headrooms', however a review of the same cross-section

(Figure 2.1.1N1e) in the updated standard shows no change in the dimensions of the cross-section components of the SLR design. The planning statement noted that the Clehonger Link also used the same cross-section except for the omission of the hard strips giving an overall hard surfacing width of 7.3m.

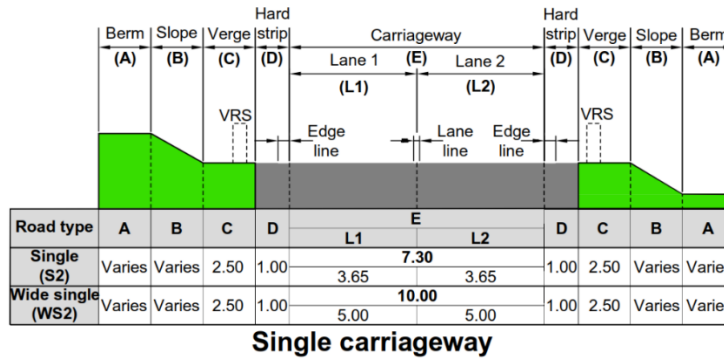


Figure 2 - Illustrative Cross-Section of the proposed Southern Link Road

Measurements were taken along both the SLR and the Clehonger Link and the widths for the lanes and hard strips areas were found to match the dimensions from Figure 2.1.1N1e (shown in figure 2 above). The verge width is 2.5m along most of the scheme route however it has been widened where other design features like drainage pipes have had to be accommodated. These changes are deemed acceptable.

6.3 Overtaking Sections

The scheme should have greater than 30% overtaking areas to conform with CD109 Paragraph 9.2 and 9.4. The design has approximately 10% overtaking based on measurements from the pdf's which would result in a departure from standards. This needs to be reviewed in more detail when the extent of the barriers and 3D model file becomes available.

The design has been reviewed to gather whether overtaking would be safe based on the current lining which uses Diag. 1008.1 from the Traffic Signs Regulations and General Directions centre lines along the whole length of the SLR and Clehonger Link with the exception of the 1004.1 warning lines which have been used on the approach to the roundabouts.

Figure 9.23N2 from CD 109 shows a curve selection chart for horizontal curves and recommends whether overtaking would be suitable or not. With regards to the SLR (where the design speed is 100kph), it states that non-overtaking sections should be designed using the radii shown in section D, which the 720m radii curves along the SLR fall into. It is also suggested that the non-overtaking sections be accompanied with appropriate warning lines (Diagram 1013.1 marking from Chapter 5 Traffic Signs Manual). A review of the Clehonger Link horizontal curve with radius 360m (design speed is 70kph) also shows that it should be a non-overtaking section as per section D.

Therefore, the road marking design needs to be updated to ensure that the diagram 1008.1 centre lines are replaced with diagram 1013.1 non-overtaking warning lines between the chainages where the horizontal curves are present as currently the design suggests overtaking would be allowed throughout the SLR and Clehonger Link.

6.4 Stopping Sight Distance

In the absence of a 3D design model and AutoCAD files for the scheme, the pdf files have been used to review the SLR and Clehonger Link mainline design against the Stopping Sight Distances (SSD) required, in accordance with CD109.

The desirable minimum SSD required along the SLR, both westbound and eastbound, is 215m for a design speed of 100kph in accordance with CD109 Table 2.10. A review of the SSD horizontally shows there may be obstructions to the visibility splays. While there are no issues with the embankments, it is probable that Vertical Restraint Systems (VRS), cuttings and the highway boundary fence will affect these visibility splays and will require the SSD to drop some steps below the desirable minimum recommended standard.

It is not certain, without more detailed design information, how many steps below the desirable minimum the SSD will need to deviate but it is clear that some type of VRS will need to be provided on the SLR. The planning statement states, in paragraph 2.11.1, 'The embankments (see Figures 2.2 and 2.3 from the planning statement) will have a 1 in 2 (26°) slope which will be slackened to 1 in 4 (14°) on the southern slopes adjacent to the railway crossing in order to reduce the impact of the route from the existing properties on Haywood Lane'. The steep embankments would be accompanied by high speeds on the SLR and two large drainage attenuation ponds, therefore, it is recommended that these hazards be evaluated further with a Road Restraint Risk Assessment Process (RRRAP) and a VRS provided as determined by the outcome of the RRRAP. Currently, the only VRS provided from the design documents reviewed is in the form of H4a containment barriers at the Railway underbridge located between chainages 1700.000 and 1800.000. The VRS currently proposed, in general, is deemed potentially inadequate to deal with the hazards to vehicles along the SLR and any additional VRS will have the potential to impact on the SSD and possible addition of relaxations and departures from standard.

The highway boundary fence appears to follow the toe of the embankment around the majority of the SLR. This can be seen from the landscape mitigation proposals plan (drawing number 'Figure 7.4.1') however it is difficult to pinpoint the exact location of the fence since the scale of the drawing is at 1:5000 and no AutoCAD file has been received which includes the fencing. Nonetheless, for vehicles travelling westbound, there is a potential issue with the visibility splays between 300.000 and 460.000 which may cross the boundary fence. For vehicles travelling eastbound on the SLR, there may be issues with the splays being impacted by the fencing between chainages 1320.000 & 1070.000 and 2600.000 & 2660.000. To avoid the issues of the boundary fence, the SSD could be dropped to one step below the desirable minimum.

A vertical check of the SSD for the SLR shows that the desirable minimum SSD can be met along the majority of the vertical profile however between chainages 2050.000 and 1500.000, where the crest curve is one step below desirable minimum, the achievable SSD drops from 215m to 160m which is also one step below the desirable minimum. This combination of one step below the desirable minimum for both SSD and vertical curvature results in a departure from standard.

The desirable minimum stopping sight distance required along the Clehonger Link Road, both westbound and eastbound, is 120m for a design speed of 70kph. Whilst this is achievable travelling eastbound towards the proposed roundabout, the desirable minimum SSD cannot be achieved for vehicles going westbound as the majority of this road is in cut and the visibility splays are obstructed by the earthworks. To ensure there are no obstructions to the visibility envelope, the SSD has to drop one step below the desirable minimum to a distance of 90m. This is an allowable relaxation from standards as long as it is not in the vicinity of a junction as is the case for the eastbound direction. A VRS is not proposed in this area from the design plans, it is assumed that the RRRAP assessment concluded no VRS was required therefore there are no obstructions in achieving SSD of 90m. There were no issues identified with the SSD when doing a vertical check of the Clehonger Link Road.

6.5 Direct Accesses

Seven direct accesses are proposed, according to the Route Plan shown in drawing 'Drawing reference Figure 3.3' Figure 1. The geometry and visibility requirements have been reviewed using CD 123 'Geometric design of at-grade priority and signal-controlled junctions'.

All the accesses meet the geometric requirements of CD 123, with the majority of the accesses utilising minimum 2m splayed entries, whilst one of the accesses on the Clehonger Link Road uses 6m curves instead which is acceptable. The accesses were all assessed for visibility and while two of the three accesses on the Clehonger Link Road achieved the desirable minimum SSD of 120m, one of the accesses required the setback to be reduced to 2m and the SSD reduced to approximately 70m which is 2 steps below the desirable minimum. The access provided on Haywood Lane (design speed of 70kph) would require the hedges to the north of the junction to be removed from within the visibility splay for the SSD of 120m to be achieved even when the setback is reduced to 2m. The impact on the hedges cannot be avoided by going below the desirable minimum SSD, since a portion of the hedgerow will still require removing. It is difficult to confirm from the Ordnance Survey map but reducing the setback from 4.5m to 2m may allow the desirable minimum SSD of 120m to be met when measuring a visibility splay to the south of the junction. The design needs to be confirmed to assess if it is possible to remove any of the hedge line. It may require a departure from standard if the hedge cannot be removed.

6.6 Maintenance Hardstanding Areas

There are two maintenance hardstanding laybys provided on the SLR, for which the geometry and visibility requirements have been reviewed against CD 169 'The design of lay-bys, maintenance hardstandings, rest areas, service areas and observation platforms'.

The maintenance laybys meet the geometric requirements set out in CD169 with the layby having a parking area width of 3.5m. The length of the parking area is 25m. These meet the requirements of a 'simple maintenance hardstanding' area as shown in Figure 7.10.1a in CD169.

Visibility was also measured using the methodology laid out in clause 7.2 of CD169. Visibility is achieved using the desirable minimum SSD of 215m, however this is based on the current design which doesn't include VRS along the SLR, other than at the railway underbridge around chainage 1740.000. If VRS is introduced, it will obstruct a portion of the visibility envelope and possibly result in relaxations or departures from standards.

6.7 Roundabout Design

The SLR and Clehonger Link roads have interfaces with two roundabouts, one is an existing roundabout at the A49 / B4399 junction to the east where a new western arm is proposed whilst the second will be a new roundabout, proposed at the junction between the A465 and B4349 and will have 4 arms – the SLR will form the eastern arm whilst the Clehonger Link will form the western arm.

The geometric design and visibility requirements for roundabouts were reviewed in accordance with CD116 'Geometric design of roundabouts' for the western arm on the A49 / B4399 existing roundabout and all the arms on the proposed A465 / B4349 roundabout. The detailed review can be found in the Appendix B.

With regards to the existing roundabout at the A49 / B4399 junction, where a new western arm is proposed, the geometric design is acceptable in the most part. However, there is a safety concern regarding the traffic island on the western arm where the kerb line isn't tangential with the central island. A review of the road marking plan shows that hatched markings have not been provided on the side of the island for eastbound traffic approaching the roundabout, which could have been used to adjust vehicle paths, so the edge of the markings were tangential with the central island. The current arrangement increases the likelihood of vehicle paths overlapping. The entry width on the western arm is currently circa 7.5m so there is potential scope to adjust the lane width to accommodate the hatched markings. Further work is suggested to remove this safety concern. There are no issues with the visibility requirements of the western arm of this roundabout for the most part, however the location of the highway boundary fence may impact the approach visibility. Without the 3D digital files in AutoCAD format it is difficult to ascertain the exact location of the fence and whether it intrudes into the visibility splay. A detailed review of all the roundabout arms has not been undertaken at this point in time due to the lack of detailed information.

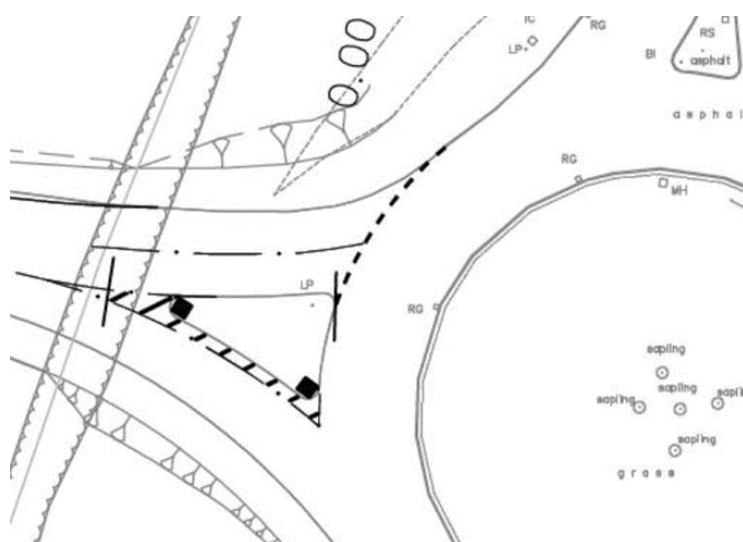


Figure 3 - Proposed markings at the traffic island

on the proposed western arm of the A49 / B4399 roundabout

The proposed A465 / B4349 roundabout complies with the requirements of CD116 and there are no departures from standard identified. It is worth noting here that this review was carried out based on the kerblines reference file shown in the '0500 Series Drainage and Service Ducts Sheet 11 of 13' which is dated 13/04/2016 received from HC. This reference file seems to supersede that which is shown in the 'Traffic Signs and Road Markings' plan which was used to review the A49 / B4399 roundabout (the geometry for this roundabout did not change). Since the Traffic Signs and Road Markings plan does not reflect the latest geometry for the A465 / B4349 roundabout, the road markings at the traffic islands have not been reviewed. The current kerblines arrangement however, without using the hatched markings either side of the traffic island, ensures that vehicles entering the roundabout will not overlap each other on all the arms except the Clehonger Link Road. When the traffic island kerblines on the western arm is projected towards the central island, it is not tangential and therefore the kerblines need to be adjusted or hatched markings should be added to maintain appropriate entry width and ensure vehicles do not overlap each other when entering the roundabout. The Traffic Sign and Road Marking plan did not show the locations of the chevron signs that would need to be placed at the A465 / B4349 roundabout. These signs should be added to the roundabout and placed, so they do not intrude on the visibility splays for drivers entering the roundabout or looking right. Also, the approach visibility on the eastern arm needs to be reviewed further once details on the accurate location of the highway boundary fence have been confirmed as it may go outside of the highway boundary.

6.1 Summary

The documentation received relating to the highway design geometry of the Hereford Southern Link Road and associated works has been reviewed with respect to their compliance with the Design Manual for Roads and Bridges. It is noted that there is limited information available and that the design has been further revised but was not made available for this review. The design reviewed has some issues within it which would require

departure from standards to be approved. It is believed that a departures report is available but this was not shared for review so no comment can be made to the completeness of the departures.

There is also a concern that the revised standards for drainage are more onerous than those used when the scheme was originally developed. A review of the drainage design should be undertaken to ensure compliance with current standards.

No details were provided for a vertical restraint barrier system (VRS) A review of the VRS requirements should be undertaken to ensure that a Road Restraint Risk Assessment has been undertaken and informed the design.

7. Structures

7.1 Overview

A review of the Southern Link Road (SLR) outline structures designs contained in the planning application reference P151314/F, which was granted planning permission in 2016, has been undertaken as detailed below.

The Southern Link Road (SLR) comprises a new road between the A49/B4399 and A465/B4349 junctions, to the south of Hereford. The Planning Statement identifies eight structures on the proposed scheme consisting of: two bridges, one vehicle underpass, two bat underpasses and three culverts carrying watercourses.

7.2 Available Information

There are limited drawings of the structures made available. Of the eight structures, only six are identified on the plan included in drawing 3512983L-HHB-Figure 2.2 Rev. A (Sept. 2015), and these are:

- S01 – Grafton Wood culvert
- S02 – Grafton Lane Underpass (typical section included)
- S03 – Withy Brook Culvert
- S04 – Central Bat Underpass (typical section included)
- S05 – Railway Underbridge (typical section included)
- S06 – Haywood Lane Overbridge

However, the Planning Statement does give descriptions of all the eight structures, and these are summarised in Table 8 below:

Table 8: SLR proposed structures.

Structure Ref	Name	Description
S01	Grafton Wood culvert	No details provided
S02	Grafton Lane Underpass	5m width a minimum headroom of 5.3m spanning over Grafton Lane
S03	Withy Brook Culvert	Standard precast concrete culvert, skewed to road alignment, with security gates
S04	Central Bat Underpass	Has a clear opening of 4m by 4m for bat access

S05*	Railway Underbridge	32.9m single span, integral steel composite deck, spanning over a railway line. 5.1m minimum headroom to be provided and 4.5m maintenance access track to be provided on either side of the Network rail land boundary.
S06	Haywood Lane Overbridge	A single span, integral steel composite deck, spanning over Haywood Lane. Further information.
S07	Newton Brook Culvert	Standard precast concrete culvert, skewed to road alignment, with security gates
S08	Newton Brook Underpass	Has a clear opening of 4m by 4m for bat access

*It is noted that a General Arrangement drawing (3512983L-HHB-S05 rev. B) of the Railway Underbridge was produced in January 2016. The filename indicates that this is an AiP (Approval in Principle) drawing.

7.3 Validity of Structures Design and Next Steps

It is not clear whether Approval in Principle (AiP) documents have been prepared for these structures, and due to the limited information, that has been available, it has not been possible to review the outline designs and whether they can be implemented.

Nonetheless, should AiPs had been produced in accordance with the DMRB standard BD 2/12 Technical Approval of Highway Structures, which was current at the time, the validity of which would have expired. Clause 2.29 of BD 2/12 states that an AiP is valid for three years after the date of agreement with the Technical Approval Authority (TAA).

As the validity of any AiPs, which may have been produced at the time, would have expired, they will need to be updated and to reflect and incorporate changes to the latest suite of DMRB standards. It is not clear, due to the limited information provided, whether Detailed Design (For Construction) drawings and specifications had been produced or design documents had been produced up to planning stage: AiPs and General Arrangement drawings. Any Detailed Design packages produced at the time ought to be checked and updated to comply with the current standards.

In addition, it is advisable to engage with third parties if any of their requirements have changed. Specifically, for S05 Railway Underbridge and the culverts carrying watercourses, it is necessary to initiate conversation with Network Rail and the Environment Agency respectively, to ascertain whether their requirements have been modified.

8. Active Travel Review

8.1 Overview

This section considers the potential for implementation of active travel measures along the Southern Link Road. The purpose of this is to assess the space and demand for active travel measures in the scheme. The existing reports were assessed along with the drawings and other documentation that had previously been provided by other parties.

The Hereford Transport Package and the South Wye Transport Package reports by WSP have included for assessing the possibilities of improving active travel around Hereford. While the reports discuss the improvement of active travel around the South Wye area and in Hereford centre, they do not include for active travel measures to be implemented along the route of the SLR. The conclusion of these reports highlighted possible areas for improvement which mostly consisted of recommendations for improvement to walking and cycling infrastructure on Belmont Road and better active travel connectivity to the Hereford Enterprise Zone. Although the reports were published in 2018 and 2019 the demand summaries can be interpreted the same at this time, however, the design standards used have since been superseded by Local Transport Note (LTN)1/20 on Cycle Infrastructure

Design. The reports suggest shared footway/cycleways, while LTN 1/20 would suggest segregated cycle tracks are required along the SLR.

As the above active travel measures are beyond the extents of the SLR scheme they have been excluded from further review in this report

Additional reviews for Active Travel are being undertaken by Herefordshire under the Herefordshire local plan, Masterplan, County Cycling plan and Local Cycling and Walking Infrastructure Plans.

8.2 Design Requirements

LTN 1/20 was published in July 2020 to improve the cycling design standards that were previously available to improve how active travel can better be implemented into highway improvements. The transport note provides a table with the recommended appropriate protection that should be provided for cyclists of all levels at different design speeds. The table can be seen below. Due to the SLR having a design speed of 100kph and the Clehonger link having a design speed of 70kph it can be seen that any proposed active travel measures for the Southern Link Road should include a fully kerbed cycle track.

Speed Limit ¹	Motor Traffic Flow (pcu/24 hour) ²	Protected Space for Cycling			Cycle Lane (mandatory/ advisory)	Mixed Traffic
		Fully Kerbed Cycle Track	Stepped Cycle Track	Light Segregation		
20 mph ³	0	Green	Green	Green	Green	Green
	2000	Green	Green	Green	Green	Green
	4000	Green	Green	Green	Green	Green
	6000+	Green	Green	Green	Yellow	Yellow
30 mph	0	Green	Green	Green	Yellow	Yellow
	2000	Green	Green	Green	Yellow	Yellow
	4000	Green	Green	Green	Yellow	Yellow
	6000+	Green	Green	Green	Yellow	Yellow
40 mph	Any	Green	Yellow	Yellow	Pink	Pink
50+ mph	Any	Green	Pink	Pink	Pink	Pink

- Provision suitable for most people
- Provision not suitable for all people and will exclude some potential users and/or have safety concerns
- Provision suitable for few people and will exclude most potential users and/or have safety concerns

Notes:

1. If the 85th percentile speed is more than 10% above the speed limit the next highest speed limit should be applied
2. The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24 hour flow
3. In rural areas achieving speeds of 20mph may be difficult, and so shared routes with speeds of up to 30mph will be generally acceptable with motor vehicle flows of up to 1,000 pcu per day

Figure 4 - LTN 1/20 appropriate protection requirements

The existing corridor design for the Southern Link Road consists of two 3.65m wide carriageway lanes with a 1m hard strip at either edge before joining the verge which consists of various widths across the scheme, this equates to a total hard standing corridor width of 9.3m. There are six proposed bridges/culverts across the SLR including over the railway which along with the restricted red line boundary provide major constraints for the consideration of active travel measures.

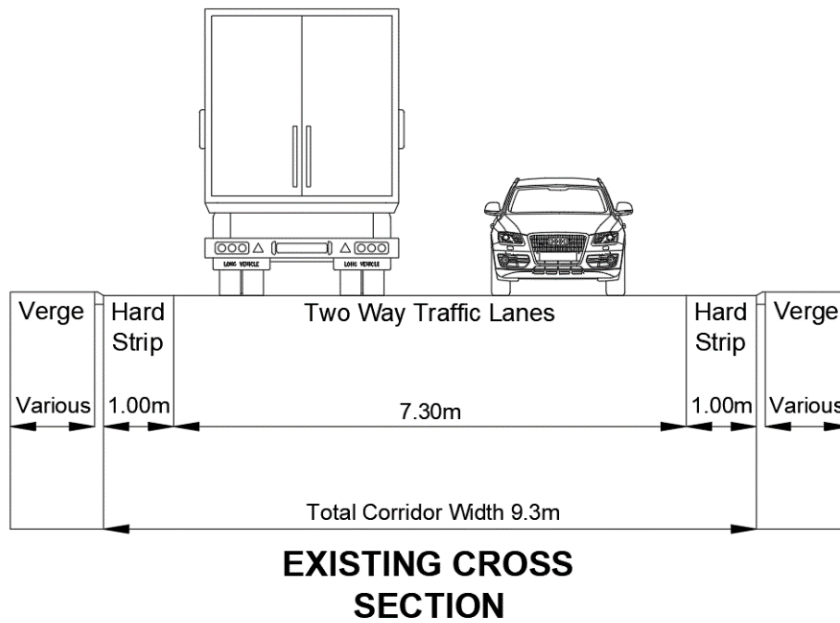


Figure 5 – Existing design cross section

LTN 1/20 refers to desirable minimum widths for cycle tracks and traffic separation. In the SLR case, the desirable minimum protected space for the 2-way cycle track is 3m. While the desirable minimum separation between carriageway and cycle track along a 60mph road is 2.5m. Also included is a 2m desirable minimum footway. Using these design parameters, the new total corridor width becomes 15.8m not including the verge to the side without the active travel measures. The assumption for the active travel measures is to replace the existing corridor with the active travel corridor about the centre line of the existing design with the active travel measures placed on the north side of the scheme, this will alleviate the need to redesign the alignment of the existing SLR design. The proposed active travel measures considered will require an additional hard standing width of 6.5m to the north. The proposed active travel corridor is shown below. It should be noted that there may be scope to reduce the footway / cycleway width to absolute minimum with a shared facility which may be more appropriate at this rural location.

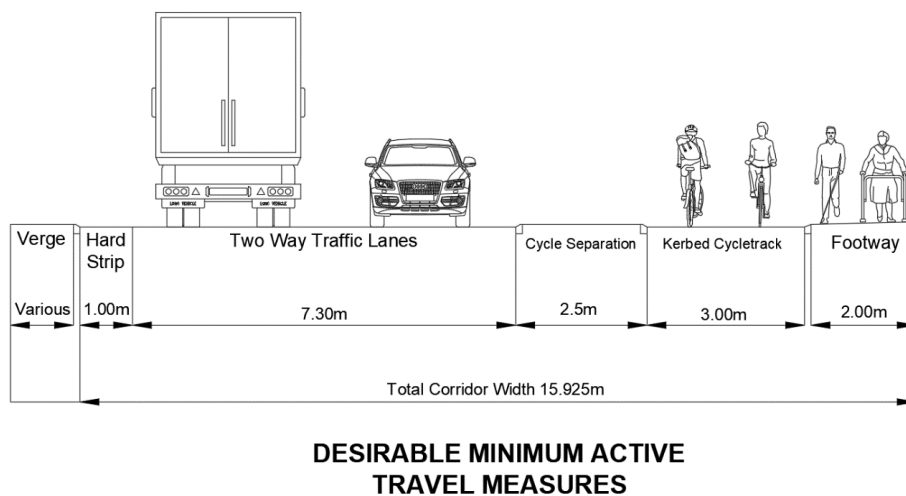


Figure 6 - LTN 1/20 Desirable minimum cross section

8.3 Demand

The demand for cycle infrastructure for the SLR is important to understand when considering active travel options. Hereford Enterprise Zone (HEZ) has been identified as a key location to improve active travel connectivity between areas of Hereford. The B4399 which runs between HEZ and the SLR junction with the A49 currently has no cycle infrastructure and is a similar design to the existing SLR design. To include active travel measures on this section of the SLR and end them with no further cycle infrastructure improvements on the B4399 would not be best practice and would not help in encouraging more people to use active travel to access the HEZ.

Grafton Lane is the highest demand creator for active travel on the SLR. National Cycle Route 46 runs along Grafton Lane with an off carriageway shared cycle route approximately half a mile north of its intersection with the SLR continuing into the centre of Hereford. National Cycle Route 46 runs from Bromsgrove in the West Midlands to Neath in Wales and so presents high cycle demand. The connection of this cycle route to the SLR could be an important factor in the proposal of active travel measures to support better cycle connectivity to the surrounding areas and settlements.

Clehonger is around 2 miles west of where the SLR will meet the A456 along the B4349. If active travel measures were available along the SLR then it may help to promote the use of active travel for people in Clehonger and the surrounding area to access Hereford City Centre by utilising access to National Cycle Route 46. However, as previous reports have mentioned, it may be more beneficial to provide this demand with the improvements of cycle connectivity along the A465 and the A49 as these routes provide a more direct journey into the city centre.

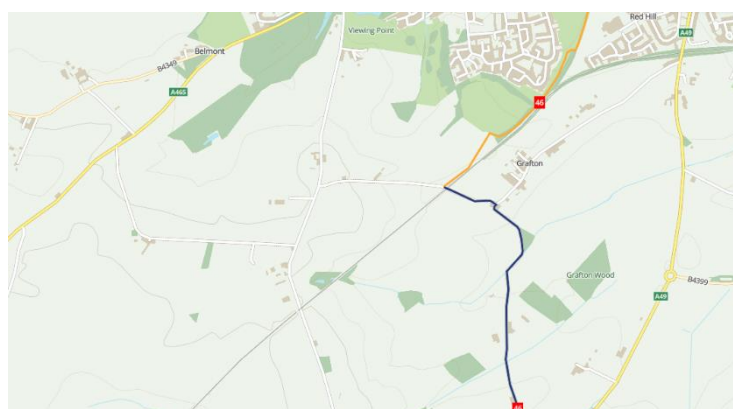


Figure 7 - National Cycle Route 46

Any future developments, including residential or industrial, in South Wye and the surrounding area may increase the demand for active travel measures along the SLR. However, without an appreciation for the potential growth of this part of Hereford, this has not been considered.

8.4 Constraints

The constraints of implementing the active travel measures discussed along the SLR are attributed to a restriction of space, either due to the addition of active travel extending beyond the red line boundary for the scheme or restrictions at structures across the project. The requirement of 6.5m of extra hard standing width presents difficulties within the existing proposals as active travel measures were not considered during the initial design.

8.5 Summary

The active travel measure presented above cannot be accommodated within the existing red line boundary due to the larger cross sectional width required along the length of the route and at pinch points such as the rail and road bridges

A review of alternative active travel measures should be undertaken in order to ensure links to existing routes are enhanced and integrated where possible within the existing red line boundary.

9. Commercial Review

9.1 Commercial review of Full Business Case

A review of the cost estimate for the SLR has been undertaken. Due to the limited information that has been available it has not been possible to undertake a full cost estimate review of rates and items. This cost estimate has therefore been limited to a review and uplift of the values identified in the Financial Case report for the South Wye Transport Package. The Financial report included the Southern Link Road and a series of active travel measures in Hereford. The active travel measures have been removed from this review as they are assumed to be delivered under a separate commission.

It has been concluded that it will be difficult to add active travel measures to the existing Hereford Southern Link Road scheme within the current red line boundary. Therefore, no cost estimate has been undertaken at this time.

The scheme costs in the full business case were developed by Balfour Beatty Living Places (BBLP) Table 9 includes the BBLP / FBC costs as described below.

- Construction activities
 - Based on detailed construction activity schedule from BBLP in table 9 and review of tender documents returned
- Third party costs
 - Costs for Statutory Undertakers at £1.09 million based on budget estimates provided by the four affected utility providers (Dŵr Cymru / Welsh Water, Western Power Distribution, Cadent and BT Openreach);
 - *National Highways (formerly Highways England) agreed commuted lump sum of £89,025; and
 - Network Rail costs cover items such as Basic Asset Protection Agreements (BAPA) for the design and construction phases and the potential relocation of a mast. A BAPA for the design phase was agreed with Network Rail for a cost of £25,000.
- Professional Fees
 - Construction phase supervision and project management costs have been based on an estimate of 5% of construction activities and third party costs to give an estimate of £941,763
 - Design fees for the scheme are estimated at £6.4 million (rounded to the nearest £0.1 million) and covers design and development fees to date and forecast costs up to the construction phase.
 - Adding the construction phase supervision and project management costs to the design fees, as well as accounting for costs incurred by Herefordshire Council project management team during this period, provides a cumulative professional fees total of £7.4m (rounded to the nearest £0.1m).
- Land Costs
 - Land costs for the scheme at January 2019 are anticipated to be £2.0 million including £191,387 spent on land purchased to date, with a further £204,600 of land costs following exchange of contracts with a landowner. The remaining land costs are assumed incomplete

unless otherwise confirmed by HC and will require to be completed following confirmation of CPO/SRO Orders.

- Risk and contingencies
 - A Quantified Cost Risk Assessment (QCRA) was prepared based on the DfT prescribed four-step process in the FBC financial case. The mean post-mitigated cost is £1.4m (rounded to the nearest £0.1m).

An exercise of uplifting the original costs produced by BBLP for the Southern Link Road Project from Q2 2018 (index 326) to Q3 2023 (index 386) with the TPI increasing by 18% in this period. The indexes used for the uplift are from BCIS and can be found in Appendix C. This exercise covers the price increase from when the original costs were produced (Q2 2018) as described above to today's date (Q3 2023). BCIS predicts TPI to increase by a further 13% from Q3 2023 (today) to Q1 2027 (potential project start date). The exercise was split as per the original split by BBLP and can found below: SLR Risk-Adjusted Cost Estimate Table 9.

The costs have been inflated to Q2 2027 rates in the right column (in both table 9 and 10). These costs exclude construction inflation to the midpoint of the project and includes tender inflation up to Q2 2027.

There is a discrepancy between the costs in the SLR Risk adjusted cost estimate in table 9 below which was taken from the FBC report compared with the detailed construction activity costs in table 10 below. This should be investigated to ensure that the overall cost is accurate.

Table 9: SLR Risk-Adjusted Cost Estimate – with AECOM TPI increase

SLR Risk-Adjusted Cost Estimate	SLR Risk-Adjusted Cost Estimate	SLR Risk-Adjusted Cost Estimate	SLR Risk-Adjusted Cost Estimate	SLR Risk-Adjusted Cost Estimate
WSP DESCRIPTION	BBLP COST	AECOM RECALCULATION AMOUNT	REBASED COSTS FROM Q2 2018 TO Q3 2023	REBASED COSTS FROM Q3 2023 TO Q2 2027
Construction Activities	£17,638,184	-	£20,884,476	£23,589,718
Third Party Costs	£1,220,270	-	£1,444,860	£1,632,018
Professional Fees	£7,380,888	-	£8,739,334	£9,871,372
Land Costs	£2,000,000	-	£2,368,098	£2,674,847
Risk and Contingencies	£1,486,591	-	£1,760,197	£1,988,201
Risk-Adjusted Cost Estimate	£29,679,342	£29,725,933	£35,196,965	£39,756,156

The below Table 10 consists of detailed construction activity schedule from BBLP.

Table 10: FBC Construction Costs – with AECOM TPI increase.

SLR – Construction Costs	SLR – Construction Costs	SLR – Construction Costs	SLR – Construction Costs	SLR – Construction Costs
SERIES	DESCRIPTION	AMOUNT	TOTAL	AECOM RECALCULATION AMOUNT
	CONSTRUCTION ACTIVITIES			
200	SITE CLEARANCE	£83,014		
300	FENCING	£268,183		
400	ROAD RESTRAINT SYSTEMS (VEHICLE AND PEDESTRIAN)	£316,405		
500	DRAINAGE AND SERVICE DUCTS	£1,141,223		
600	EARTHWORKS	£3,972,449		
700	PAVEMENTS	£2,565,560		
1100	KERBS FOOTWAYS AND PAVED AREAS	£179,113		
1200	TRAFFIC SIGNS AND ROAD MARKINGS	£207,760		
1300	ROAD LIGHTING COLUMNS AND BRACKETS, CCTV MASTS AND CANTILEVER MASTS	£47,000		
1400	ELECTRICAL WORK FOR ROAD LIGHTING AND TRAFFIC SIGNS	£100,362		
1500	MOTORWAY COMMUNICATIONS	£67,210		
2700	ACCOMMODATION WORKS	£147,365		
3000	LANDSCAPE AND ECOLOGY	£917,750		
	STRUCTURES - (prices based on approximate estimating, therefore OH & P included, Spons p.75)	£2,896,672		
	Temporary Works	£732,576		
		SUB TOTAL	£13,642,641	£13,642,642
	ADD FOR CONTRACTOR'S OH&P (not included in above rates) 12.50%	£1,457,302		
	ADD FOR CONTRACTORS RISK	£750,000		
	ADD FOR CONTRACTORS INFLATION	£1,460,000		
	PRELIMINARIES (INC. TRAFFIC MANAGEMENT)	£2,927,381		
		SUB TOTAL	£6,594,683	£6,594,683
		ESTIMATED CONSTRUCTION COSTS	£20,237,324	£20,237,325
	AECOM - REBASED COSTS FROM Q2 2018 TO Q3 2023			£23,961,986
	AECOM - REBASED COSTS FROM Q3 2023 TO Q2 2027			£27,065,870

A review of the construction costs against the tenders received by Herefordshire Council in October 2018 was undertaken. There were 3 compliant tenders received by the client of £17,479,187.77, £17,295,299.11 and £33,997.00. If we exclude the higher tender then the remaining 2 are within 15% of the estimated construction cost from the original South Wye Transport Package Financial Case.

The tax situation associated with various construction items has changed since October 2018 which will further inflate costs (red diesel and land fill tax).

AECOM would be able to provide a more accurate cost if the scheme was remeasured and costed by AECOM based on the revised design were it made available.

Design guidance has pushed against the use of culverted watercourses rather than open span structures. This issue could be raised in the preparation of an ES Addendum and could be raised as a potential objection at Public Inquiry. Any change to provide open span structures would have significant cost and programme implications.

A similar project, that is currently under construction, has a cost of **construction cost** £33.8M when scaled proportionally to the SLR. A simple comparison between this and the rebased SLR construction cost of £24M shows a large difference of £9.2M. Therefore it would be advisable to involve a contractor at an early stage to provide input into the changing costs of materials particularly due to recent global events such as the Covid pandemic and difficulties/ increased cost of procuring materials.

9.2 Summary

The review of the commercial aspects of the SLR has been limited to an uplift of existing FBC financial case.

The design fees in table 9 have been partially paid for by HC. An assumed fee of 15% of the original BBLP has been estimated to be required to complete the project on the assumption that there is no further design work except for minor amendments, environmental resurveying and land acquisition as well as taking the project through construction support. It is therefore estimated that £8.4m has been spent with £1.47M fees remaining.

The total risk adjusted cost is therefore reduced from £39,756,156 by £8,401,372 to £31.4M rounded to the nearest £0.1M.

10. What Next / Gap Analysis

The review of the documentation in concluding the next steps has been limited to the available information received from HC. Existing design information was not received in sufficient detail to enable a full review of some items within the scope of this commission. Each section has been summarised below and are available within the detailed sections for each element.

10.1 Planning Application

Planning application ref. P151314/F is considered to have been lawfully implemented and works to construct the SLR can proceed in accordance with the approved plans, however it is understood the Client seeks to make potential amendments to the Scheme. Any changes outside of the red line boundary would require a new planning application. There are several mechanisms available for amending a planning permission. It is recommended that once the nature and scale of any potential amendments have been established a further review is undertaken to advise on the most suitable mechanism for amending the planning permission. This matter should also be discussed with the LPA to ensure their 'buy in' on the preferred approach. Consideration should also be given as to whether the potential amendments trigger any changes to Likely Significant Effects as presented with the EIA. This might impact on the mechanism used to amend a planning permission as well as information required to support an application.

10.2 Environmental Assessment

10.2.1 If the Scheme is Progressed as Currently Consented

If the Scheme were to be progressed as currently consented, and there was no need to apply for external funding, at a minimum there would be a requirement to discharge any outstanding pre-commencement / pre-construction conditions attached to the planning permission.

Conditions 6 and 7 relating to the CEMP were partially discharged by the LPA following the submission of two CEMPs (a Final Phase 1 CEMP and Draft SLR CEMP). The decision notice states that a Final CEMP which should build upon measures in the Draft CEMP should be submitted for discharge before any works outside of Phase 1. The Draft SLR CEMP contains a number of outstanding action points for the Final CEMP to include, for example:

- a description of construction activities (including phasing timing, scheduling and sequencing of works) which will inform the rest of the CEMP;
- production of a Noise method statement; refinement of the requirement for noise barriers once a programme of works and a schedule of plant items is available; an out of hours protocol providing a noise and vibration assessment of out of hours works;
- production of a Pollution Incident Control Plan; and
- production of a Site Waste Management Plan.

In addition, there may be other elements of the Draft CEMP which require updating for the Final CEMP due to the time that has elapsed since its production, reflecting evolving best practice and guidance.

Condition 8 (soil management) has also been partially discharged on the basis of a submission of a Materials Management Plan for Phase 1 of works only. A Materials Management Plan for the remaining construction work would have to be submitted prior to the commencement of any works.

It is also considered that there would be a legal obligation to undertake new ecological surveys even where suitable mitigation was implemented under licence previously for the purpose of obtaining relevant European Protected Species (EPS) licences from Natural England. This is because the ecological baseline for the Scheme may have altered and sufficient time has passed that protected species may have colonised areas not previously inhabited (for example, badgers will frequently build new setts, use them for a short period and then abandon them). In addition, guidance, policy and legislation has been updated over the past decade and requires up to date consideration to ensure mitigation remains appropriate such that the effects remain as those outlined in the ES. For this reason, updated species-specific surveys would also need to be carried out even where a likely absence was established previously. Where updated surveys establish the presence of protected species to be

impacted by the Scheme, licence applications must be prepared and submitted to Natural England, who typically have a determination period of at least 30 working days (and an additional five working days to acknowledge receipt). Ecological works are seasonally constrained and sufficient time would need to be allowed prior to the construction of the Scheme to allow for new surveys to be carried out, licences acquired, and mitigation put in place. Terrestrial and aquatic ecology planners outlining the seasonal constraints for survey and mitigation work are provided at Appendix D. It's anticipated that the necessary surveys could be carried out within one cycle, by March 2025 at the earliest.

It is considered unlikely that a Biodiversity Net Gain Assessment would be required unless there are material changes to the Scheme.

Whilst not a legal requirement, given the length of time that has lapsed, fresh engagement with the public and stakeholders would be beneficial to increase awareness and support for the Scheme.

10.2.2 If Changes to the Scheme are Required

It is considered most likely that the Scheme would be amended via either an application under Section 73 of the Town and Country Planning Act, or by a new full planning application.

Given the length of time that has elapsed since the planning application for the Scheme was first prepared, it is important to note that the public consultation undertaken would no longer be considered reflective of the current relevant stakeholders, and new public consultation should be undertaken regardless of the type of application submitted.

As per Section 10.2.1, in this instance, a suite of updated ecological surveys would be required to fully inform the Scheme, mitigation measures and any licensing requirements.

If there are material changes to the Scheme, it is considered likely that a Biodiversity Net Gain BNG Assessment will be required.

10.2.3 Section 73 Application

Any material alteration to the Scheme that would not alter the planning application boundary would result in the need for an application to be submitted under Section 73 of the Town and Country Planning Act 1990 (As amended). This application would require an in-depth ES Addendum and updates to baseline information as noted in Section 3Table 4, including the undertaking of a Climate Assessment (this not previously having been carried out). This is in order to meet validation requirements and show compliance with current policy and legislation, though the exact scope of work to be undertaken would need to be confirmed with the LPA. This could include updated noise modelling for any additional receptors within the vicinity and a review of archaeological requirements.

Alterations to the Scheme may result in changes to the required material volumes, impacting upon the number of vehicle journeys incorporated into the traffic modelling; this would have wider impacts upon other technical disciplines, such as air quality and noise. Changes to the position / layout of the Scheme design will require review of the assessment for other topics.

A suite of updated ecological surveys and assessments (to include HRA Screening and an ES chapter) would be required to fully inform the Scheme, mitigation measures and any licensing requirements. A BNG Assessment may be required.

It is strongly suggested that, if a Section 73 application were to be progressed, discussions are held with the LPA to identify the exact nature and scope of the application. It is assumed that, with the exception of new assessments, the ES addendum could be prepared assessing the new baseline but using the same methodology as the original application, so that comparisons can be made between the old and new schemes. In addition to this, it may be required that the Scheme is also assessed using the latest guidance and methodology. The need for new assessments, such as climate change and BNG, would be at the discretion of the LPA. The feasibility of progressing a planning application under Section 73 is heavily dependent upon the extent of the changes that are proposed. The ES addendum itself may drive design changes that lead to having to make a full planning application.

10.2.4 Full Planning Application

Changes to the Scheme which would alter the planning application boundary would result in the need for a new, full planning application supported by a new ES and suite of technical assessments in line with current policy and methodologies as outlined in Table 55. A new scoping opinion would need to be sought from the LPA in order to confirm the nature and extent of any planning application.

A suite of updated environmental surveys and assessments would be required to fully inform the Scheme, mitigation measures and any licensing requirements. It is likely that a BNG Assessment would be required.

10.3 Funding and Business Case Development

If external funding is required in order to progress the Scheme, then it is likely that the full business case would need to be revisited as part of a funding application. The most common avenue for funding, the Department for Transport (DfT), follows the five-case model as outlined in The Green Book: Central Government Guidance on Appraisal and Evaluation (HM Treasury, 2022⁷). This requires business cases to:

- set out a robust case for change that demonstrates how the proposal has a strong strategic fit to the organisation's priorities, government ambitions and the area(s) in scope – the 'strategic dimension';
- demonstrate the value for money and the best choice for maximising social welfare through options appraisal – the 'economic dimension';
- illustrate the commercial viability and supply-side capacity for the proposal – the 'commercial dimension'
- demonstrate the proposal is financially affordable – the 'financial dimension'; and
- set out the proposal's deliverability through the effective development of plans, management and resources to oversee the project from outputs to outcomes – the 'management dimension'

The programme of business case development can vary depending upon the nature and scale of the proposal, but is typically formed of three stages:

- Stage 1 - Strategic Outline Case (SOC);
- Stage 2 - Outline Business Case (OBC); and
- Stage 3 - Full Business Case (FBC).

The DfT Transport Analysis Guidance (TAG) (2022⁸) provides more detailed insight as to how to conduct transport studies, however the development of a business case would require the undertaking of an environmental appraisal of the proposed scheme based upon current baseline data and assessment and that is in line with the latest legislation and guidance. The requirements of other funding bodies may differ slightly but would likely follow a similar format.

The need for landscape monetisation to be incorporated into a business case would also need to be considered.

10.4 Environmental Status

Existing environmental survey information is now considered out of date. They are required to be updated to inform the production of the CEMP as required by planning condition, and to inform EPS licence applications to Natural England for works which may impact any identified protected species. These surveys are expected to be able to be completed by March 2025. Additional environmental works may be required, for example if an amendment to the planning permission due to a material change to the design is sought, or at the request of an external funding body such as the DfT.

⁷ HM Treasury (2022). *The Green Book: Central Government Guidance on Appraisal and Evaluation*. Available at: [The Green Book](#) [Accessed 29-09-2023]

⁸ Department for Transport (2022). *Transport analysis guidance*. Available at: [TAG](#) [Accessed 05-10-2023]

10.5 Transport modelling and appraisal review

The documentation relating to the strategic transport modelling and appraisal of the Hereford Southern Link Road and associated works has been reviewed with respect to the Department for Transport's Transport Analysis Guidance. At the time the strategic modelling and appraisal was undertaken, February 2019, the forecast and appraisal of the scheme was considered to be in accordance with industry guidance.

As outlined in the recommendations, there are a number of refinements to the strategic transport modelling and appraisal of the SLR which should be addressed to ensure the work is consistent with the latest TAG issued by the DfT. These relate to a variety of topics, including the age of the strategic transport model, uncertainty log, representation of trip rates and travel patterns in the model and the impact of COVID-19, assumptions about the design and opening of the SLR, and ensuring the full impact of the scheme is captured in the latest version of DfT software.

Should this scheme require additional funding from the DfT, it is expected that Herefordshire Council will be asked to address the strategic transport modelling and appraisal which has been undertaken, and update traffic forecasts and economic appraisal to ensure they are in accordance with current DfT TAG.

10.6 Highways

It is understood that a full suite of drawings and specification are in place for the construction of this project. Design checks were undertaken based on the limited information available from the planning application drawings which were used to identify design issues. The standards have not substantially changed regarding the geometry and layout of the highway design. Assuming that the design was compliant with design requirements and relaxation / departure from standards, which should have been identified within the original design, have been reviewed and approved, including those issues identified in this report then the project can proceed with the current design with the following to be considered.

As the received information was very limited (general arrangement drawings from the planning application at 1:1500 scale) It is suggested that a full review of design information is undertaken to ensure that the construction issue pack is complete together with the site and works information pack.

A review of the existing statutory undertakers' equipment should be undertaken to ensure no further utilities are required to be diverted and that the current diversions are still valid. HC should consider whether it's worth completing a digital 3-D clash detection exercise to reduce the likelihood of potential conflict and associated standing time when on site.

A review of the drainage design should be undertaken to ensure that the design complies with current standards. We require confirmation that the drainage network has been designed with a 20% allowance for climate change. The ES Addendum climate assessment is likely to result in some drainage re-design to allow for increased rainfall intensity and run off. This would include the provision of larger balancing facilities to mitigate downstream flooding. The DMRB now requires a sensitivity test to allow for a 40% climate change. This will be picked up in the ES addendum.

A review of the proposed highway cross section and potential departures from standard could be undertaken to assess whether sufficient width can be obtained to enable the provision of improved cycleway/footway facilities.

A full review of the lighting may be required to be undertaken to ensure that it meets current illumination standards and practices.

10.7 Structures

HC should confirm the status of the AiPs in accordance with the DMRB standard BD 2/12 Technical Approval of Highway Structures. As the validity of any AiPs, which may have been produced at the time, would have expired, they will need to be updated and to reflect and incorporate changes to the latest suite of DMRB standards.

Design guidance has pushed against the use of culverted watercourses rather than open span structures. This issue could be raised in the preparation of an ES Addendum and could be raised as a potential objection at Public Inquiry. Any change to provide open span structures would have significant cost and programme implications.

HC should consider future proofing the proposed structures to provide sufficient width for a future active travel scheme. This item would require discussion with the planning authority to ensure that any such amendments can be achieved without a full planning application.

Discussions with third parties, Network Rail and Environment Agency, are required to establish if their requirements had changed whilst also planning the bridge construction to ensure adequate possession dates are available within the construction period.

Any design drawings and specification need to be checked, to ensure compliance with the latest design standards, and updated accordingly.

10.8 Active travel

It is recommended that a full review of the active travel provisions are undertaken in the future to understand what alternative measures could be introduced along adjacent routes and residential areas to improve connectivity. This would complement works being undertaken on other active travel reviews within Hereford such as the Town planning review and the Hereford Masterplan.

10.9 Commercial

The commercial review of the design is based on the South Wye Transport Package Financial Case which utilised the Outline Business Case / Tender documents received from HC. This review has been limited to an uplift to the original costs in the FBC to bring them up to a construction start date of 2027.

These would include minimal additional design fees at this stage as it is not clear from the information that was made available whether any design changes are required to take the design to construction issue. The design fees in table 9 have been partially paid for by HC. An assumed fee of 15% of the original BBLP has been estimated to be required to complete the project on the assumption that there is no further design work except for minor amendments, environmental resurveying and land acquisition as well as taking the project through construction support. It is therefore estimated that £8.4m has been spent with £1.47M fees remaining. Should further design work or reapplication of the planning application then this fee would need to be increased as appropriate

The total risk adjusted cost is therefore reduced from £39,756,156 by £8,401,372 to £31.4M rounded to the nearest £0.1M based on the above assumptions.

The land costs are assumed incomplete unless otherwise confirmed by HC and will require to be reviewed following confirmation of CPO/SRO Orders and have therefore been retained as the original value.

AECOM would be able to provide a more accurate cost if the scheme was remeasured and costed by AECOM based on the revised design were it made available.

10.10 Timescales

Environmental surveys need to be redone to bring the survey information up to date in order to inform the production of the CEMP as required by planning condition, and to inform EPS licence applications to Natural England for works which may impact any identified protected species. Ecological works are seasonally constrained and sufficient time would need to be allowed prior to the construction of the Scheme to allow for new surveys to be carried out, licences acquired, and mitigation put in place. Terrestrial and aquatic ecology planners outlining the seasonal constraints for survey and mitigation work are provided at Appendix D. It's anticipated that the necessary surveys could be carried out within one cycle, by March 2025 at the earliest. Natural England typically have a determination period of at least 30 working days for a licence application (and an additional five working days to acknowledge receipt).

Should any material changes to the Scheme be proposed which require the submission of a Section 73 application or a new planning application, additional time would be required for further environmental assessment works as described in Section 10.2. There may also be additional requirements for environmental assessment from the funding bodies, for example the DfT, which will entail additional time.

If the same Technical Approval Authority is used as for the original structures design, and they are comfortable with the original designs and design standards used at that time, obtaining approval for the AIPs will be straight forward and would be completed in weeks, However, the worst-case scenario would involve re-design to new standards that would require revised AIP, technical approval, design check and certification. This could take up to nine months to finalise. Assuming that any redesign work required maintains the structural form and similar aesthetic appearance of the original design, this will not impact planning.

The drainage design is likely to require updating due to allowances required for climate change. The time required to make such changes will be dependent on the availability of design calculations for the existing network. It would be reasonable to allow a duration of three months to complete this task. The impact of such changes will require discussion with the planning authority, If they cannot be implemented under a Section 73 application, this could result in the submission of a full planning application. The revised design, including the provision of additional/increased attenuation features may result in departures from standard. The time for preparation and approval of these departures would need to be allowed for in the timescale of this task.

The original design requires more detailed analysis to verify compliance with the CDM regulations. Various design standards, design guidance and best practice has changed since the original design was approved. Design improvements are in part driven by CDM. Off-site fabrication has become much more commonly used to reduce site-based operations, often completed at height. For example, bridge edge beams are often now installed with built in parapets. If any such items are identified, it will be difficult to ignore them due to the CDM implications, and may lead to design changes and associated programme impact.

Reworks for traffic modelling would need to be undertaken to ensure that the FBC is in place. Note that changes to the traffic modelling may impact the BCR and undermine the planning application.

The CPO process should be run alongside discussions regarding purchase of land to ensure that the land can be acquired under the legal route should the need arise. It is estimated to require a 24 month duration to undertake the full CPO process which would need to be started in Q3 2024 to enable a potential start on site by Q3 2026. Note that if reasonable objections are raised this could lead to a public inquiry and judicial review, with further design changes and associated delays.

If the project went to Public Inquiry there are some new considerations that an objector could raise to get the scheme rejected. Some of these would be covered in the ES Addendum such as carbon management. A full review of all scheme documentation would be required to ensure that all necessary documentation has been prepared and appropriately considered. Any newly specified documentation would need to be prepared to enable informed responses to potential objections e.g. WCHAR.

If the scheme went to Public Inquiry HC should try to engage those individuals involved in the design process as expert witnesses. Considerable effort would be required by others to take on these roles, where they only have limited detail of the scheme.

We need to understand the views of the planning authority to ascertain whether the orders process could run in parallel with the outstanding design items.

If a full planning application is required the opportunity would arise to include active travel measures within the footprint of the scheme.

An indicative programme is included in Appendix E to plan out the activities through to start of construction. The programme assumes windows to undertake the ecology surveys as described above. It should be noted that if this window is missed then the programme will be required to extend to the next calendar year. The programme assumes the 24 month CPO process as described above although it is expected that the land purchase will be under a negotiated process with the formal CPO process running alongside. This could reduce the timescale for this activity considerably to a possible 12 month duration which would result in a start of construction date of Q2/Q3 2026.

A construction period of approximately 18 months is expected to be achievable, it would be advisable to engage with a contractor at the earliest opportunity to ensure that the construction can be phased to achieve the 18 month timescale.

The programme is caveated by the following:

- Indicative programmes based on the limited information available to AECOM.
- CPO process to be completed in conjunction with the negotiated land acquisition in case negotiated route is not accepted
- No time has been allowed to complete Planning Applications for Haul roads / topsoil storage areas
- Any design changes undertaken by others since the planning approval are assumed to be Non material changes
- No further Ground Investigation assumed required, review of existing GI information only
- FBC to be limited to minor update of current report
- Planning Application assumed acceptable and not subject to reapplication (assumes amendments can be completed under S73 – 16 week determination may be challenging)
- No allowance has been made for any further flood modelling. EA approvals are currently time consuming due to lack of EA resource for approval.
- Programme makes no allowance for any archaeological works. If archaeological trenching works are required by County Archaeologist and make findings, strip map and record works could be required with significant additional duration and cost.
- No allowance has been made for the design of service protection slabs. The appraisal and approval of any such designs can be drawn out.
- The environmental surveys make no allowance for the relocation of any wildlife identified (e.g. badgers/ newts).
- The environmental surveys make no allowance for the removal of any invasive species (Japanese knotweed / Himalayan balsam).

10.11 Risks

Natural England has the discretion to reject an application for an EPS licence if the supporting evidence is poor. Should updated environmental surveys not be obtained, there is a risk that Natural England could refuse the relevant licence applications based on the age of the existing survey data. Surveys would then need to be conducted in order to obtain the appropriate licences, and this may have impacts on the timescales of the project. Conducting works which may impact on EPS (such as damaging or destroying a breeding site or resting place of a protected species) without the appropriate licence is a breach of the Conservation of Habitats and Species Regulations 2017 (as amended in 2019).

Early engagement with the LPA and the funding bodies is required to understand their requirements with respect to environmental work in the case that amendments to the planning permission are sought, or a business case is required to be prepared.

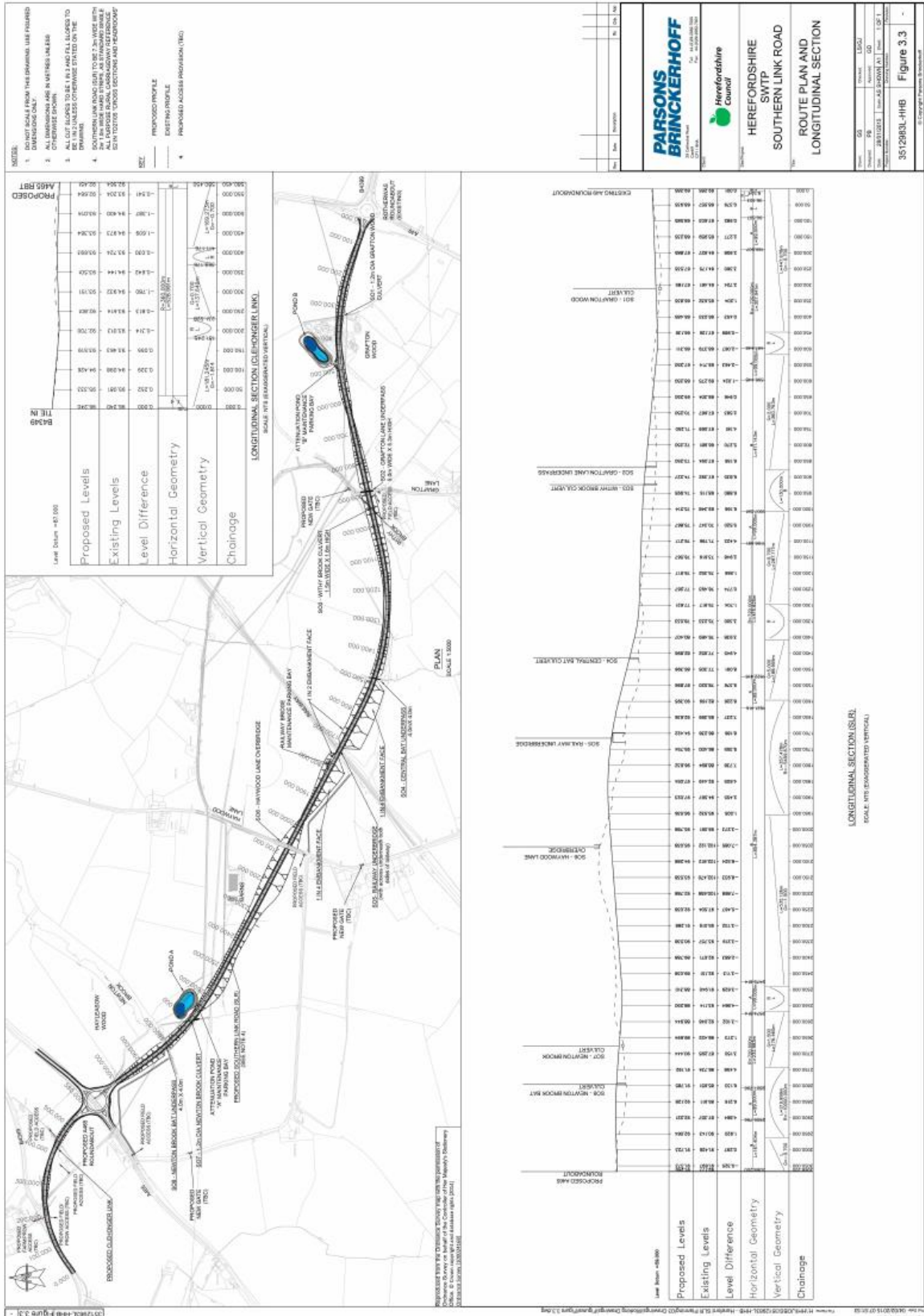
10.12 Summary

This report sets out the validity of the planning application and reviews reference P151314/F ('the Southern Link Road (SLR)') as well as reviewing existing design information and presents a 'what next' for all elements of the scheme, identifying risks to the project.

The report presents the client with sufficient information to make informed decisions about each element of the scheme and determine the way forward.

Appendix A

Scheme proposals Planning Application figure 3.3



Appendix B

A49 / B4399 / Hereford SLR Roundabout Review Document

Roundabout Name: A49 / B4399 / New Link Road Rb (Hereford)
 Roundabout Type: Normal

Arm	Name	Design Speed (kph)	Speed Limit (MPH)	Des Min SSD (m)	Ref CD 109
Arm-1	S.E. Western Arm	100	60	21.5m	
Arm-2					
Arm-3					
Arm-4					

Arm	D - Inscribed circle diameter (m)	Width of Circulatory Carrieway (m)	Diameter of Central Island	Traffic splitter islands	Vehicle swept Paths	Entry width (m)	Flare Length	PMI - Conflict angle (deg)	Arc of Splitter Island	Entry radius (m)	Entry path radius (m)	Exit Width (m)	Exit Radius (m)	Forward visibility on approach (m)	Forward visibility at entry	Right Hand Visibility at Giveway	Right Hand Visibility at 15m from Giveway
Clause DMRB CD116	3.5	3.6	3.7	3.10	3.14.3	3.12 to 3.14	3.17.1	3.18.1	3.18.2	3.19.1	3.26	3.28.2 and 3.28.3	3.29.3	3.37 to 3.42	Figure 4.3N Table 3.43	Figure 3.45 Table 3.43	Figure 3.46 Table 3.43
Design standards (For 'Normal' Roundabouts)	23m min - 100m max	1 to 1.2 of maximum Entry width. Range 8.4m to 10m	4m minimum. No kerbed traffic planting on islands less than 10m dia. (3.7.3)	Kerbed traffic islands required on each approach	Vehicle swept path analysis required for large design vehicles.	Single lane entry 4.5m wide (should) Lane width range 3.0m to 4.5m (should). Multi lane entries should be 4.5m (should). Single or dual carrieway 19m max (should).	Minimum flare length of 5m in urban areas and 25m in rural areas	No less than 20 degrees and no greater than 60 degrees	The hub line of the traffic island should lie on an arc which, when projected forward, meets the central island tangentially.	Not less than 10m. Not greater than 20m.	Shall not exceed 100m	7m to 7.5m at single carrieways. Taper at 1:15 to 1:20. 6m min at nose to island.	20m-100m	SSD required to gateway line. Use CD 109 for SSD distance.	40m	40m	40m
1	Circa 60	9.0m	42.0m	Yes	Fine - 16m articulated lorry tested	7.5	circa 30m	50 Degrees	No	20mR	60.0	between 7.0 and 7.5	60mR	Compliant	Compliant	Compliant	Compliant
2																	
3																	
4																	

CD116 Designation: 1 Shall/Should 2 Shall 3 Shall 4 Awaed (see row 4 above)

If the current island geometry is to be retained, the hatch markings need to be adjusted so that the edge of the markings is tangential with the central island.

Keep verge and central island landscaping clear of visibility gaps

- = OK, within standard CD116
- = Non compliant
- = Non compliant, but not safety issue. Or information / design not yet available

Observations

A465 / B4349 / Hereford SLR Roundabout Review Document

Roundabout Name: A465 / B4349 / New Link Road Rbr (Hereford)

Roundabout Type: Normal

Arm	Name	Speed Limit (MPH)	Design Speed (MPH)	Des Min SSD (m) Ref CD 109
Arm-1	SLR - Eastern Arm	60	100	215m
Arm-2	A465 - Southern Arm	60	100	215m
Arm-3	Chelvinger Link (B4349) - Western Arm	40	70	120m
Arm-4	A465 - Northern Arm	60	100	215m

Roundabout Geometry

Arm	D - Inscribed circle diameter (m)	Width of Circulatory Carriageway (m)	Diameter of Central Island	Traffic splitter islands	Vehicle Swept Paths	Entry width (m)	Flare Length	PHI - Conflict (entry) angle (deg)	Arc of Splitter Island	Entry radius (m)	Entry path Radius (m)	Ext Width (m)	Exit Radius (m)	Forward visibility on approach (m)	Forward visibility at entry	Right Hand Visibility at Giveway	Right Hand Visibility at 15m from Giveway
Clause DWRB CD116	3.5	3.6	3.7	3.10	3.14.3	3.12 to 3.14	3.17.1	3.18.1	3.18.2	3.19.1	3.26	3.28.2 and 3.28.3	3.29.3	3.37 to 3.42	Figure 4.3N Table 3.43	Figure 3.45 Table 3.43	Figure 3.46 Table 3.43
Design standards for 'Normal' Roundabouts	28m min - 100m max	1 to 1.2 of maximum Entry width 8.4 x 1.2 = 10m Range 8.4m to 10m	4m minimum (No planting on islands less than 10m dia, 3.7'3)	kerbed traffic islands required on each approach	Vehicle swept path analysis required for largest design vehicle	Single lane entry 4.5m wide (should). Lane width ranges 3.0m to 4.5m (should). 3m to 3.5m wide lanes (should). Single c/w: max 10.5m (shall). Dual Carriageway: 15m max (shall).	Minimum flare length of 5m in urban areas and 25m in rural areas	No less than 20 degrees and no greater than 60 degrees	The kerb line of the traffic island should lie on an arc which, when projected forward, meets the central island tangentially.	Not less than 10m. Not greater than 100m.	Shall not exceed 100m	7m to 7.5m at single carriageways. Taper at 1:15 to 1:20. 6m min at nose to island.	20m-100m	SSD required to give way line. Use CD 109 for SSD distance.	50m	50m	50m
1	Circa 78	8.6	62.0	Yes	Fine - 16m articulated lorry tested	7.2	37.0	27 Degrees	Yes	30.0	60.0	Yes	70.0	Compliant	Compliant	Compliant	Compliant
2	Circa 78	8.6	62.0	Yes	Fine - 15m articulated lorry tested	7.2	47.0	31 Degrees	Yes	30.0	60.0	Yes	81.0	Compliant	Compliant	Compliant	Compliant
3	Circa 78	8.6	62.0	Yes	Fine - 16m articulated lorry tested	7.2	51.0	36 Degrees	No	30.0	63.0	Yes	50.0	Compliant	Compliant	Compliant	Compliant
4	Circa 78	8.6	62.0	Yes	Fine - 16m articulated lorry tested	7.2	28.0	32 Degrees	Yes	30.0	50.0	Yes	61.0	Compliant	Compliant	Compliant	Compliant
CD116 Designation:	Shall / Should	Shall	Shall	Shall	Should	Mixed (see row 14 above)	Should	Should	Should	Should	Shall	Should	Should	Shall	Shall	Shall	Shall

Since the kerblines have been created from the pdf, they do not fully represent the 'true' kerblines. However, it seems that the four islands are tangential with the central island.

The approach visibility on the eastern arm needs to be confirmed once a detailed drawing of the highway boundary fencing has been received.
Cherion signs have not been added in the design yet at this roundabout. The design does not include the visibility splays at the roundabout.

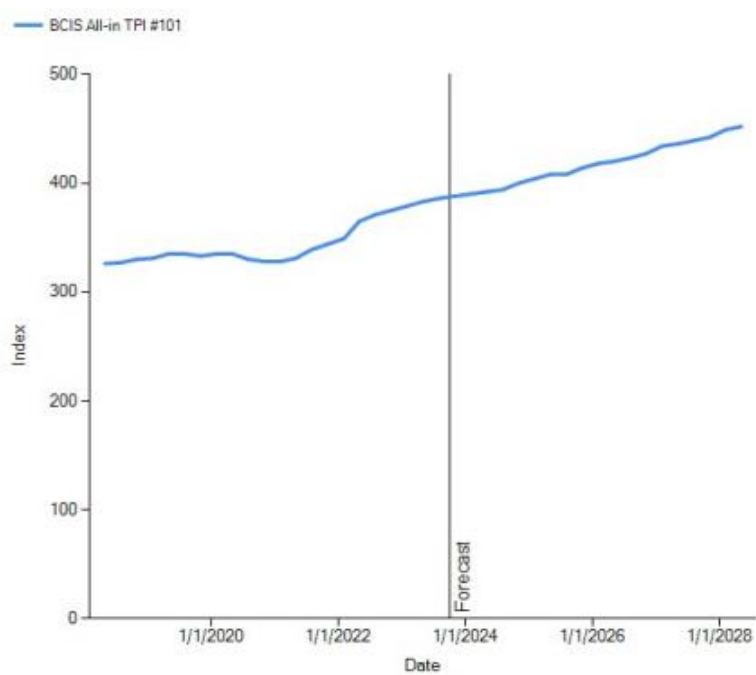
- = OK, within standard CD116
- = Non compliant
- = Non compliant, but not safety issue. Or information / design not yet available.

Appendix C

Indexes used for the uplift from BCIS

Date	Index	Equivalent sample	Percentage change		
			On year	On quarter	On month
2Q 2018	326	94	6.2%	0.0%	
3Q 2018	327	90	6.9%	0.3%	
4Q 2018	330	85	4.1%	0.9%	
1Q 2019	331	74	1.5%	0.3%	
2Q 2019	335	66	2.8%	1.2%	
3Q 2019	335	62	2.4%	0.0%	
4Q 2019	333	56	0.9%	-0.6%	
1Q 2020	335	Provisional	1.2%	0.6%	
2Q 2020	335	Provisional	0.0%	0.0%	
3Q 2020	330	Provisional	-1.5%	-1.5%	
4Q 2020	328	Provisional	-1.5%	-0.6%	
1Q 2021	328	Provisional	-2.1%	0.0%	
2Q 2021	331	Provisional	-1.2%	0.9%	
3Q 2021	339	Provisional	2.7%	2.4%	
4Q 2021	344	Provisional	4.9%	1.5%	
1Q 2022	349	Provisional	6.4%	1.5%	
2Q 2022	365	Provisional	10.3%	4.6%	
3Q 2022	371	Provisional	9.4%	1.6%	
4Q 2022	375	Provisional	9.0%	1.1%	
1Q 2023	379	Provisional	8.6%	1.1%	
2Q 2023	383	Provisional	4.9%	1.1%	
3Q 2023	386	Provisional	4.0%	0.8%	
4Q 2023	388	Forecast	3.5%	0.5%	
1Q 2024	390	Forecast	2.9%	0.5%	
2Q 2024	392	Forecast	2.3%	0.5%	
3Q 2024	394	Forecast	2.1%	0.5%	
4Q 2024	400	Forecast	3.1%	1.5%	
1Q 2025	404	Forecast	3.6%	1.0%	
2Q 2025	408	Forecast	4.1%	1.0%	
3Q 2025	408	Forecast	3.6%	0.0%	
4Q 2025	414	Forecast	3.5%	1.5%	
1Q 2026	418	Forecast	3.5%	1.0%	
2Q 2026	420	Forecast	2.9%	0.5%	
3Q 2026	423	Forecast	3.7%	0.7%	

Date	Index	Equivalent sample	On year	On quarter	On month
4Q 2026	427	Forecast	3.1%	0.9%	
1Q 2027	434	Forecast	3.8%	1.6%	
2Q 2027	436	Forecast	3.8%	0.5%	
3Q 2027	439	Forecast	3.8%	0.7%	
4Q 2027	442	Forecast	3.5%	0.7%	
1Q 2028	449	Forecast	3.5%	1.6%	
2Q 2028	452	Forecast	3.7%	0.7%	



Percentage change over time

Appendix D

Terrestrial and aquatic ecology planners

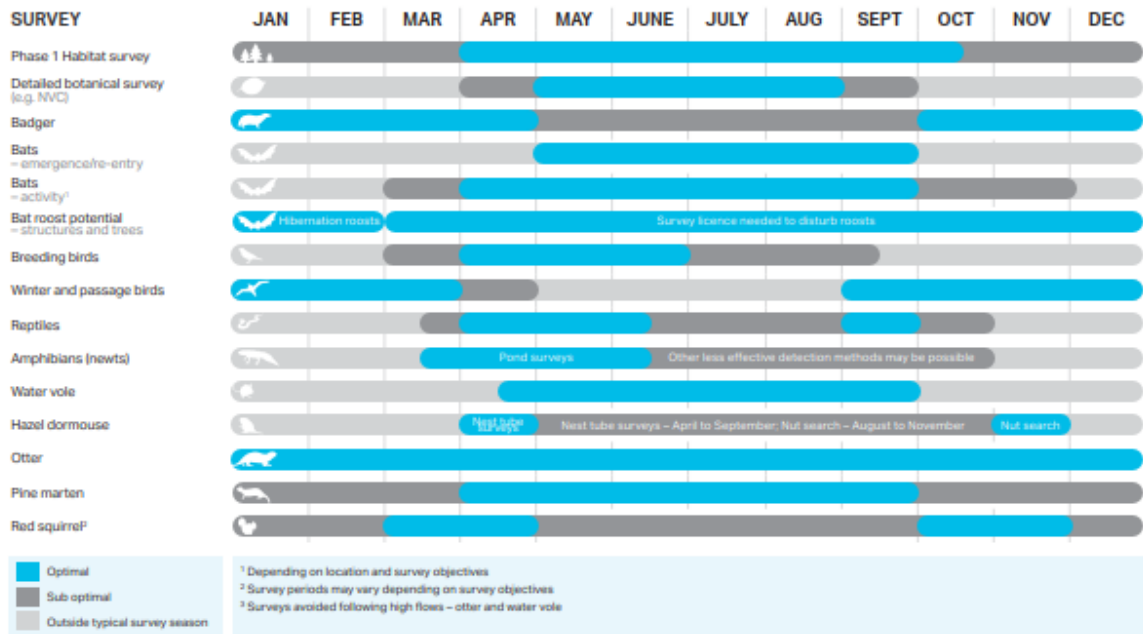


TERRESTRIAL ECOLOGY PLANNER

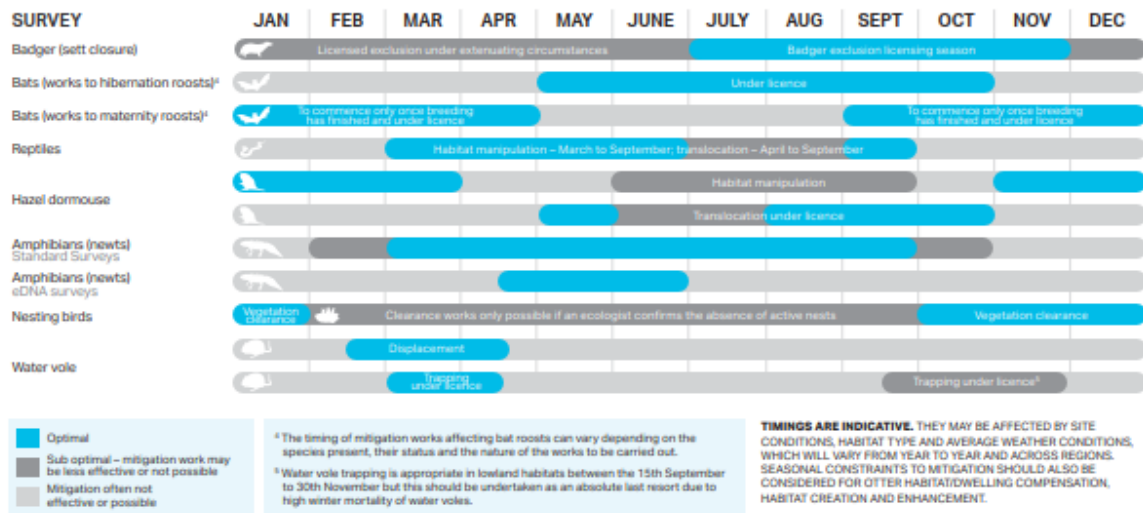
Programming and delivering ecological surveys and mitigation at the appropriate time of year is critical to securing reliable information to inform and enable planning, design, operations and maintenance. This planner provides a general guide to timing for surveys and mitigation for a range of habitats and species in the UK and Ireland. For further information and advice contact our team of professional ecologists at AECOM.



SURVEY TIMING



MITIGATION TIMING



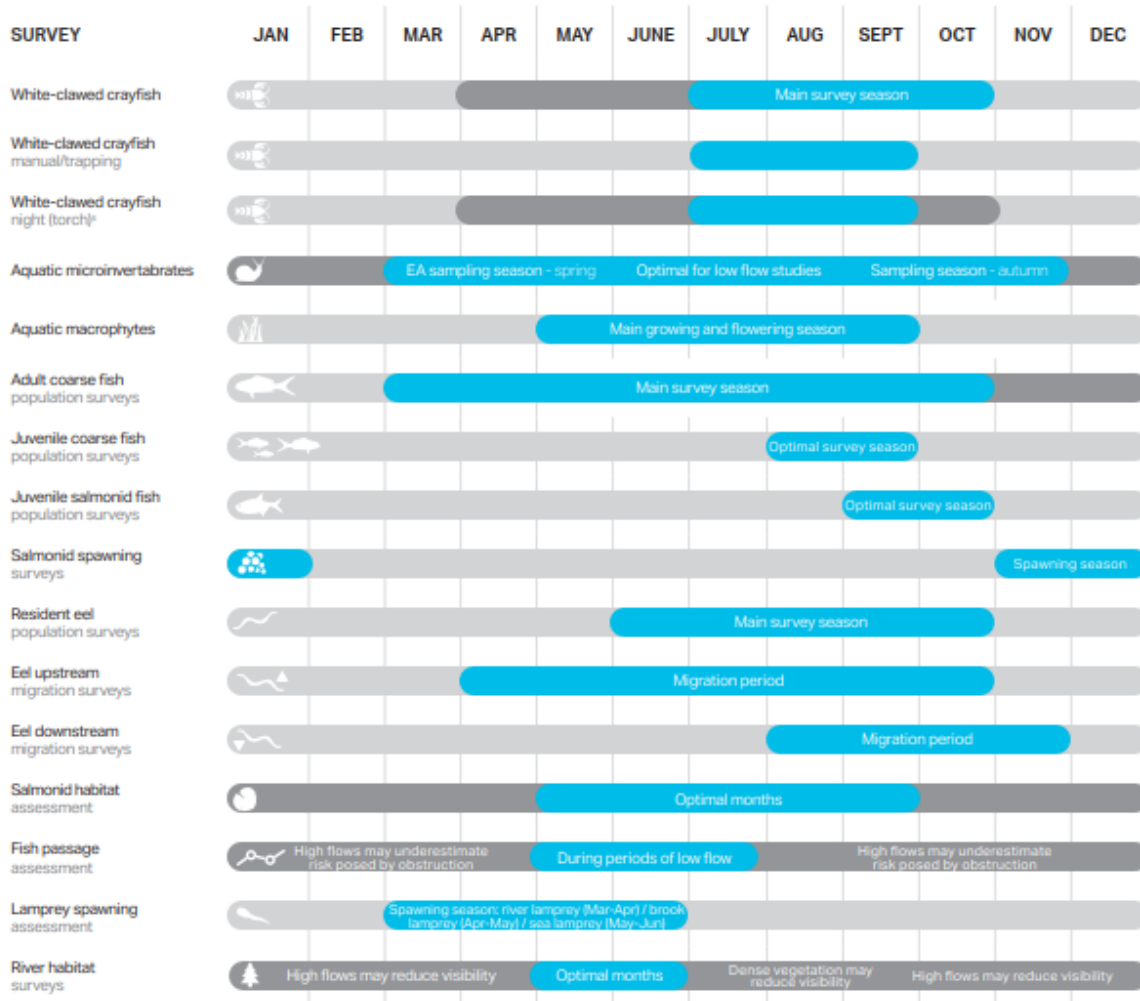


AQUATIC ECOLOGY PLANNER

Programming and delivering ecological surveys at the appropriate time of year is critical to securing reliable information to inform and enable planning, design, operations and maintenance. This planner provides a general guide to timing surveys for a range of habitats and species in the UK and Ireland. For further information and advice contact our team of professional ecologists at AECOM.



SURVEY TIMING



- Optimal survey period
- Sub optimal survey period
- Surveys unreliable

TIMINGS ARE INDICATIVE. THEY MAY BE AFFECTED BY SITE CONDITIONS, HABITAT TYPE AND AVERAGE WEATHER CONDITIONS, WHICH WILL VARY FROM YEAR TO YEAR AND ACROSS REGIONS. SEASONAL CONSTRAINTS TO MITIGATION SHOULD ALSO BE CONSIDERED FOR OTTER HABITAT/DWELLING COMPENSATION, HABITAT CREATION AND ENHANCEMENT.

PLEASE CONTACT THE ECOLOGY TEAM AT AECOM IN THE UK AND IRELAND FOR MORE INFORMATION ON MITIGATION TIMINGS.

* Mitigation proposals to manage white-clawed crayfish on site should only take place between the 1st July and the 30th September inclusive under a Natural England licence.

Appendix E

Indicative programme

