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HEREFORD TRANSPORT PACKAGE (HTP) - HEREFORD BYPASS

Corridor Assessment Framework





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TYPE OF DOCUMENT (VERSION) FINAL

PROJECT NO. 70024065

OUR REF. NO. PROJECT REF

DATE: JANUARY 2018



HEREFORDSHIRE COUNCIL

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Corridor Assessment Framework

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3	Revision 4	Final
Remarks						
Date	05/10/2017	13/10/2017	18/10/2017	08/11/2017	17/11/2017	05/01/2018
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Project number	70024065					
Report number	70024065-WSP-XX-XX-TN-TR-00001					
File reference	70024065-WSP-XX-XX-TN-TR-00001.docx					

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1 INTRODUCTION

- 1.1.1. This report outlines the way in which a long list of possible route corridors for the Hereford Bypass has been developed, and explains how these have been assessed to identify a short list of possible route corridors. This note supports Stage 1 of WebTAG. More detailed appraisal will be undertaken in subsequent stages of the project.
- 1.1.2. Accordingly the note describes:
 - 1 The development of the route corridors
 - 2 The approach to developing and setting appraisal criteria
 - 3 The results of the initial sifting, and
 - 4 Recommendations for a short list of route corridors for further assessment.

2 THE DEVELOPMENT OF THE ROUTE CORRIDORS

- 2.1.1. The Herefordshire Local Plan Core Strategy (2015) established the need for a bypass, referred to as the Hereford Relief Road in policy since 2007, as a means to achieve the Core Strategy housing and wider development aspirations. The bypass is an integral part of the HTP.
- 2.1.2. The Study of Options Report (Amey, 2010) referred to an assessment of the Eastern Inner Corridor, Eastern Outer Corridor, Western Inner Corridor, and Western Outer Corridor. The report concluded that the Western Routes have less of an environmental impact when compared to the Eastern Routes. As a result of the appraisals, the study recommended that the inner routes were preferable to the outer routes, also on environmental grounds.
- 2.1.3. Much work has been carried out by the Council over recent years leading to the identification of a corridor for the bypass to the west of the city. This corridor is shown in diagrammatic form in the Hereford Key Diagram taken from the adopted Hereford Core Strategy 2015, as reproduced in Figure 2.1 below.
- 2.1.4. A first phase of public consultation on the HTP took place during spring 2017. The aim of this consultation was to introduce the overall package (bypass plus active travel measures) to the public, to provide an update on the ongoing work, to outline the future programme for the project, and to seek views on the package. A Phase 1 Consultation Report was prepared, the content of which has further informed the development of the route corridors.
- 2.1.5. Specifically, the Phase 1 Consultation confirmed the importance of ensuring that any bypass should reduce traffic and the levels of congestion within Hereford as a first priority. The impact on landscape (including historic buildings) and the crossing of existing residential areas were also considered to be important factors to consider, as was the potential to improve facilities for walkers, cyclists and bus users in the wider Hereford area in combination with a bypass.
- 2.1.6. The route corridors were identified via multi-disciplinary workshops involving a mix of transportation, highways and environmental professionals, as advocated by WebTAG. This ensured that a range of issues were covered, including traffic routeing, highway alignments and environmental constraints. The Environmental Constraints Plan Figure 1 is shown in Figure 2.2.
- 2.1.7. The Environmental Constraints Plan shows that within and adjacent to the Core Strategy area is the River Wye Special Area of Conservation and Site of Special Scientific Interest, Ancient Woodland, Scheduled Monuments, Grade II* and Grade II listed structures and the River Wye and Yazor Brook and associated flood zones. A number of trees have been recorded in the Core Strategy area as being of Ancient / Veteran, Tree Preservation Order and / or Category A value. There are also a number of residential areas, footpaths and bridleways, unregistered parks and gardens and sites of importance for nature conservation within the area.
- 2.1.8. The route corridors also recognise the potential impact on existing development, particularly homes and businesses along Kings Acre Road and Roman Road. This was addressed by identifying locations on these largely east-west roads where a north-south bypass and junction would cause least disruption. A number of these locations were identified for each road, indicating the preferred crossing points.
- 2.1.9. Whilst the allocated development sites at Three Elms and Holmer West lie partly within the Core Strategy corridor, they were not included as a constraint in the identification of potential bypass route corridors.
- 2.1.10. The identification of possible route corridors drew upon work undertaken previously by the Council (as reported on the Council's website – <https://councillors.herefordshire.gov.uk/documents/s50035695/Hereford%20Relief%20Rd%20Cabinet%20Report%20final.pdf>) as well as considering possible new route corridors. All possible route corridors sat within, or very close to, the overall corridor identified in the Core Strategy.
- 2.1.11. By following the above process, 24 possible route corridors were identified. These are shown diagrammatically in Figure 2.3.

Figure 2.1 Herefordshire Local Plan Core Strategy Key Diagram

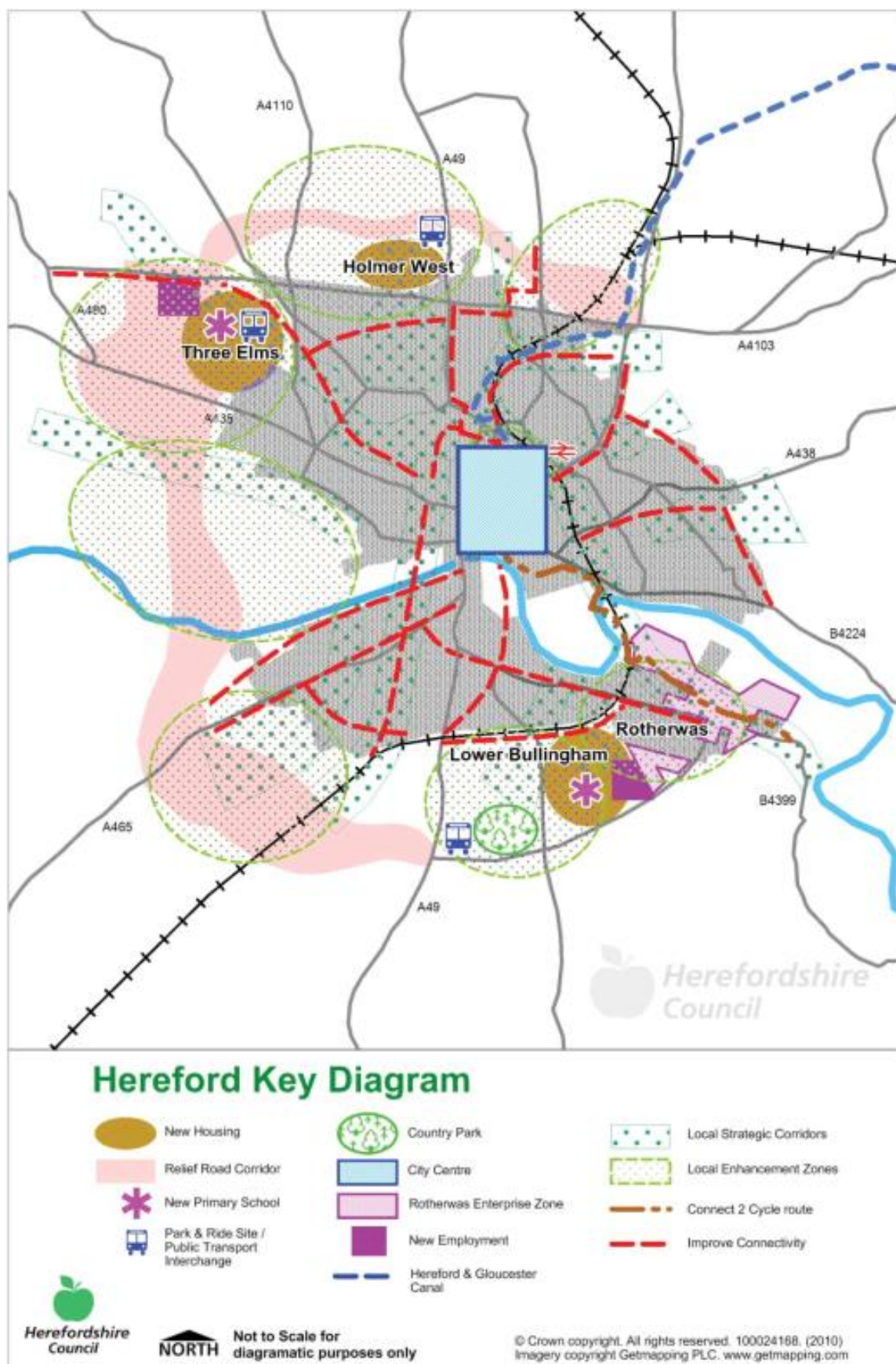


Figure 2.2 Environmental Constraints Plan

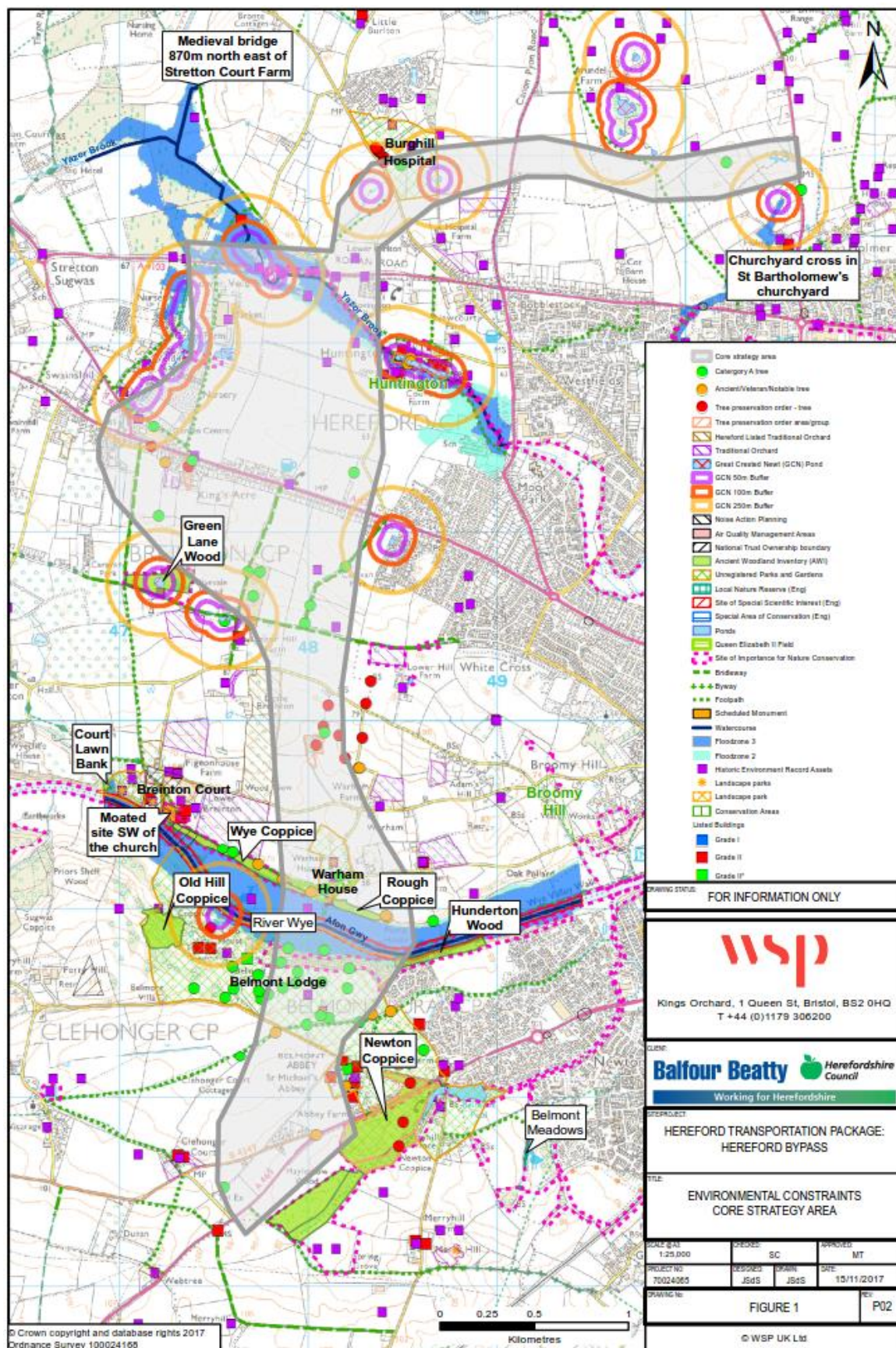
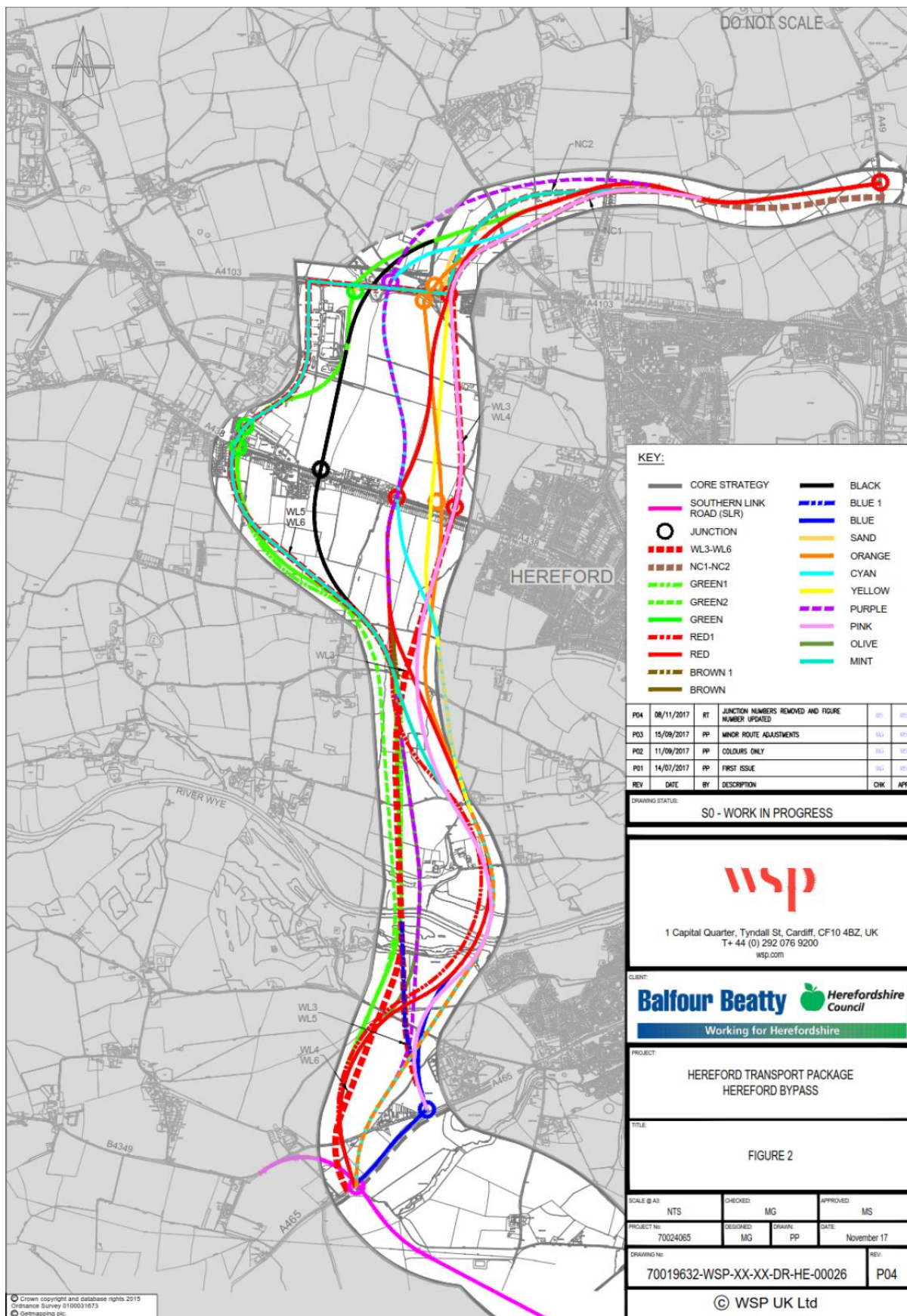


Figure 2.3 Route Corridors (Long List)



3 APPROACH TO DEVELOPING AND SETTING APPRAISAL CRITERIA

- 3.1.1. The consenting process for the proposed bypass and how the scheme would obtain planning permission has yet to be determined. However, we have followed national planning policies for the purpose of appraising the different route corridors which will enable this to be determined going forward. The relevant National Policy Statement (NPS) in this case is the National Policy Statement for National Networks (NPSNN, 2014). It also provides planning guidance for promoters of national road and rail schemes, in this case Herefordshire Council.
- 3.1.2. Throughout the route corridor identification process, the policy and legal tests contained within the NPSNN have been considered in developing a series of criteria by which a long list of possible route corridors can be sifted into a short list.
- 3.1.3. In recognition of the above, and drawing on WebTAG guidance and consistent with the approach outlined in Highways England's Project Control Framework (PCF), the approach to assessment has been as follows:
- Identification of relevant policies as set out in the NPSNN
 - In the light of those policies and analysis of the constraints and opportunities of each of the possible route corridors to establish criteria for route assessment
 - The setting of scoring ranges for each of the assessment criteria to reflect the characteristics of the Core Strategy corridor, and
 - Assessment of the route corridors against the assessment criteria.
- 3.1.4. The criteria and their indicators will be refined as more detailed analysis is undertaken in subsequent stages of the project. This proportionate approach to the assessment is consistent with recommendations in WebTAG and the PCF.
- 3.1.5. The route corridor assessment framework consists of 30 criteria encompassing a wide range of environmental, physical and economic issues, as shown below. These have been selected on the basis of their importance to the efficiency and effectiveness of the bypass itself, plus to reflect particularly sensitive locations within the possible route corridors.
- 3.1.6. Criteria such as traffic relief to the city centre have not been included as they are considered to be broadly similar across all possible route corridors at this stage of the project. Similarly, the possible route corridors are able to accommodate all design standards up to and including dual carriageway.

Route Corridor Assessment Framework Criteria		
Conservation • Ancient Woodland • River Wye Site of Special Scientific Interest (SSSI) • River Wye Special Area of Conservation (SAC) • Sites of Importance for Nature Conservation (SINC) • Veteran Trees • Wye Coppice and Rough Coppice Ancient Woodland Landscape • Landscape and visual impact in central and northern part of study area • Landscape and visual impact north of River Wye • Landscape and visual impact on River Wye Corridor • Landscape and visual impact south of River Wye	Heritage • Belmont Lodge Unregistered Park and Garden • Setting of Belmont Abbey (Grade II*) and listed structures in curtilage • Setting of Belmont Lodge (Grade II*) and listed structures in curtilage • Setting of other Listed Properties • Warham House and Burghill Hospital Unregistered Parks and Gardens Agricultural • Agricultural Landtake (best and most versatile agricultural land) • Heritage Orchard • Mature Orchards Amenity • QEII Playing Fields	Flooding • River Wye Flood Plain • Yazor Brook Flood Plain Noise • Kings Acre Road Noise Action Planning Area • Noise impact on Residential Estate (Dorchester Way) south of River Wye Development • Impact on Three Elms • Kings Acre Road Business Take Construction • House Demolition • Length of Bridge • Scheme Length • SLR Connectivity • Scheme Cost

- 3.1.7. Each of the criteria are discussed in greater detail in Appendix A, including how scores for each criteria have been derived.
- 3.1.8. In order to assist the sifting process, further workshop discussions identified 17 criteria which were considered to be of greatest importance. Appendix B contains the results of applying the 17 criteria to each one of the 24 route corridors. These findings are discussed in the next section.

4 THE RESULTS OF THE INITIAL SIFTING

- 4.1.1. In addition to the scoring of the criteria, and in accordance with WebTAG guidance on 'initial sifting', the 24 possible route corridors have also been reviewed to identify those which are unlikely to pass key viability or acceptability criteria. Two areas of key importance were identified – Ancient Woodland and Southern Link Road Connectivity, and when applied reduce the number of possible route corridors from 24 to seven. As a consequence, this 'initial sifting' has been sufficient to reduce the number of possible route corridors to a suitable short list. This is explained further below.

ANCIENT WOODLAND

- 4.1.2. Ancient Woodland designation is the most important policy consideration in this instance as the Examining Authority is directed by the NPSNN (Paragraph 5.32) to refuse any application for Development Consent where it can be demonstrated that there are alternative routes that avoid ancient woodland. Of the 24 possible route corridors, 14 would impact directly upon Ancient Woodland. Since there are ten possible route corridors which avoid Ancient Woodland, these 14 route corridors have not been taken forward to the short list.
- 4.1.3. The NPSNN policy (Paragraph 5.32) also applies to Veteran trees, although it is possible in this instance that the detailed design of the bypass can be altered to avoid individual trees. As such, route corridors which potentially impact on Veteran trees have not been removed from the short list at this stage of the assessment. Both Ancient Woodland and Veteran trees should be viewed as irreplaceable and their loss cannot be mitigated.
- 4.1.4. The Examining Authority is also directed to refuse any application that results in the loss of designated open space, such as the QEII playing fields, unless it can be proven that the use of that land is limited or that the loss can be compensated. It is assumed for this stage of the assessment that compensation can be provided, and it is therefore not an overriding consideration.
- 4.1.5. Although the NPSNN recognises that historic assets, such as Grade II* listed buildings, are irreplaceable, all of the options affect such assets to a similar extent and are therefore not a deciding factor. The River Wye SAC/SSSI is also affected by every option.
- 4.1.6. Other policies relating to topics such as landscape impact, flood risk and local designations, encourage consideration of these aspects and mitigation of adverse impacts. However, the Examining Authority is not directed to refuse an application on the basis of these policies.

SOUTHERN LINK ROAD CONNECTIVITY

- 4.1.7. Three of the remaining ten possible route corridors require constructing an additional roundabout on the A465 to the east of the proposed junction with the Southern Link Road (SLR), along with local upgrading of the section of A465 between the two roundabouts. This arrangement would add complexity to the traffic movements, introducing an inefficient dog-leg for traffic which wished to travel on both the SLR and the section of bypass north of the A465.
- 4.1.8. This layout would be less attractive for through traffic in using the bypass, and as such reduce the benefits which would accrue from such traffic diverting away from the existing A49 through the city. As reinforced by the results of the Phase 1 Consultation, the extent to which any bypass would remove traffic from the centre of Hereford is a very important consideration. As a consequence, these three route corridors have also not been taken through to the short list.

RESULTS

- 4.1.9. Of the 24 possible route corridors, 14 have been rejected on the basis of considering their impact on Ancient Woodland and a further three have been rejected on the basis of poor connectivity to the SLR. The remaining seven route corridors are to be taken through to the short list for more detailed appraisal and examination.

5 RECOMMENDATIONS FOR A SHORT LIST OF ROUTE CORRIDORS FOR FURTHER ASSESSMENT

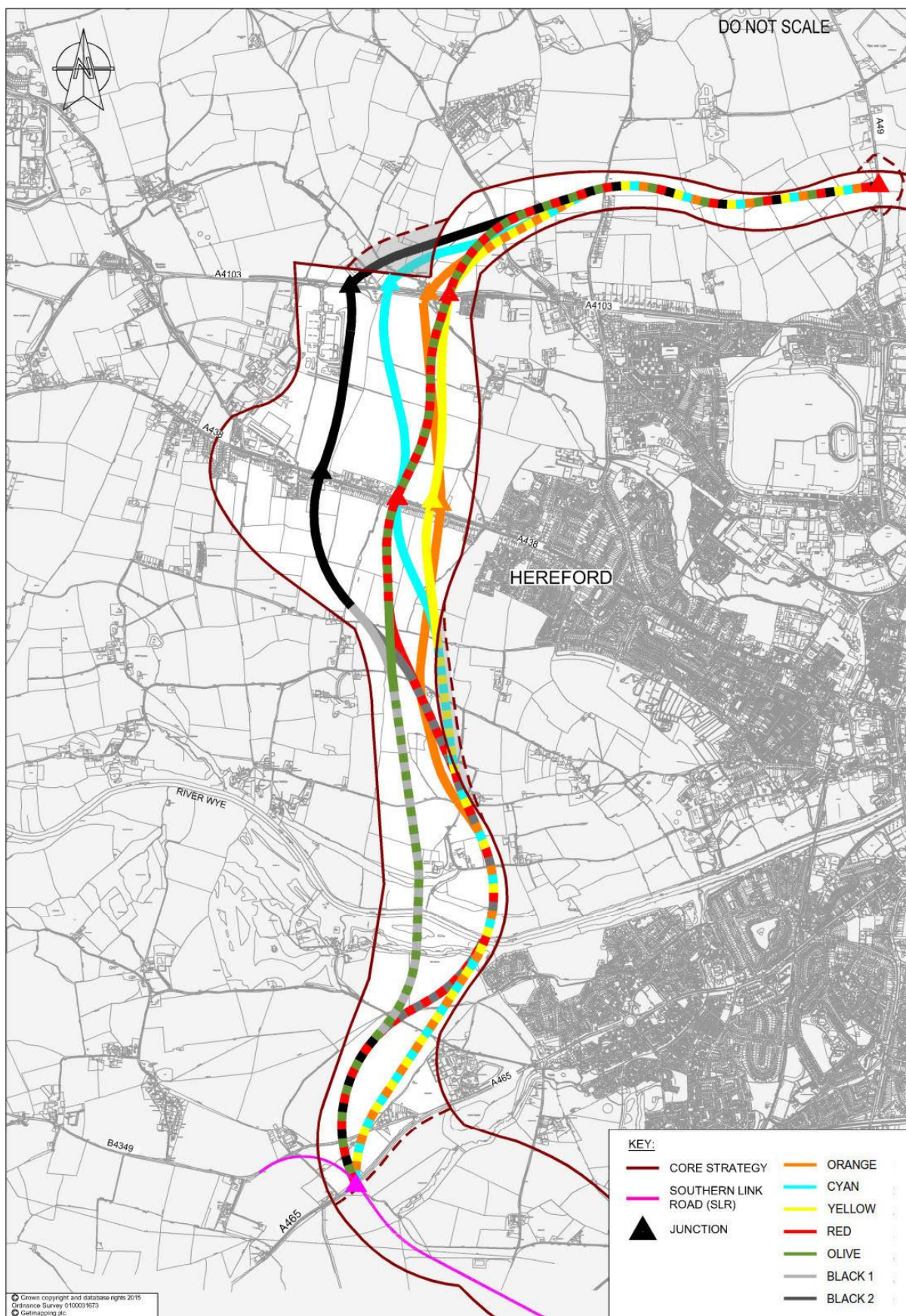
- 5.1.1. Figure 5.1 shows the seven route corridors which are recommended to proceed to the short list, and to be subject to more detailed analysis and appraisal.
- 5.1.2. The seven short listed route corridors are:

Ref. No.	Option	Description
6	Cyan	From southern modified A465(SLR) roundabout with re-aligned A465 arm Cyan option mirrors Orange & Yellow including an eastern Wye viaduct crossing. Shortly after Orange and then Yellow diverge taking a northern path to a new signalised junction crossing of the A438 at SW corner of proposed Three Elms development. The option then takes a NW path to a new A4103 roundabout junction and passes over Yazor Brook. After Yazor Brook Cyan re-joins Orange and shortly after all other options to terminate at new roundabout junction on A49.
10	Orange	From southern modified A465(SLR) roundabout with re-aligned A465 arm Orange option mirrors Cyan & Yellow including an eastern Wye viaduct crossing. Shortly after Cyan & Yellow diverge taking a northern path to a new signalised junction crossing of the A438 mid-southern boundary of the proposed Three Elms development. The option bisects the proposed development to a new A4103 double roundabout junction and Yazor Brook crossing. After the junction Orange re-joins Cyan and shortly after all other options to terminate at new roundabout junction on A49.
13	Red	From southern modified A465(SLR) roundabout Red option mirrors Olive & Black with Olive & Black1 diverging shortly before an eastern Wye viaduct crossing. Later Black2 diverges and Olive re-joins the option which takes a northern path to a new signalised crossing of A438 at SW corner of the proposed Three Elms development. The option follows the development defined corridor passing over Yazor Brook before a new signalised junction of the A4103. After the junction Red re-joins Yellow & Black and shortly after all other options to terminate at new roundabout junction on A49.
21	Yellow	From southern modified A465(SLR) roundabout with re-aligned A465 arm Yellow option mirrors Orange & Cyan including an eastern Wye viaduct crossing. Shortly thereafter first Orange and then Cyan diverge on a northern path to a new signalised crossing of A438 mid-southern boundary of the proposed Three Elms development. The option bisects the proposed development and passes over Yazor Brook before a new roundabout on A4103. After the junction Yellow re-joins Red, Olive & Black and shortly after all other options to terminate at new roundabout junction on A49.
22	Olive	From southern modified A465(SLR) roundabout Olive option mirrors Red & Black with Red & Black2 diverging shortly before a central Wye viaduct crossing. Later Black1 diverges and re-joins Red on a northern path to a new signalised junction of A438 at SW corner of the proposed Three Elms development. The option follows the development defined corridor passing over Yazor Brook before a new signalised junction on the A4103. After the junction Olive re-joins Yellow & Black and shortly after all other options to terminate at new roundabout junction on A49.
23	Black1	From southern modified A465(SLR) roundabout Black1 mirrors Red, Olive & Black2 with Red & Black2 diverging shortly before a central Wye viaduct crossing. Later after Olive diverges and is re-joined by Black2 the option takes a NW path to a new roundabout on A438 east of Wyevale garden centre. The option then passes east of Hereford livestock market to a new roundabout on A4103 and crosses over Yazor Brook. After Yazor Brook Black1 re-joins Red, Yellow & Olive routes and shortly after all other options to terminate at new roundabout junction on A49.

24	Black2	From southern modified A465(SLR) roundabout Black2 mirrors Red, Olive & Black1 with Olive & Black1 diverging shortly before an eastern Wye viaduct crossing. Later Red diverges and Black1 re-joins to take a NW path to a new roundabout on A438 east of Wyevale garden centre. The option then passes east of Hereford livestock market to a new roundabout on A4103 and crosses over Yazor Brook. After Yazor Brook Black2 re-joins Red, Yellow & Olive routes and shortly after all other options to terminate at new roundabout junction on A49.
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- 5.1.3. The short list corridor options are all connected and start at the proposed SLR roundabout on A465. It is proposed to accommodate the bypass at the SLR junction by modification to a 5-arm oval circulatory (roundabout) with the added rotation of Cyan, Orange and Yellow requiring additional A465 re-alignment.
- 5.1.4. There are effectively three possible routes through Belmont Park and two Wye viaduct crossings, the western bisecting QEII fields and passing immediately west of Warham House, and the eastern passing immediately east of Rough Coppice. The western and eastern paths continue in the central Breinton area with the eastern side options have varying impact on the Warham Farm buildings.
- 5.1.5. As the corridors progress north, the options fan out to effectively three crossing points on A438 and four crossing points on A4103, and between the junctions Orange and Yellow effectively bisect the proposed Three Elms development site. After the A4103 junction and Yazor Brook crossing the options rapidly merge to a single easterly path to the terminal A49 roundabout.
- 5.1.6. It is evident from Appendix B that the impact of the seven short listed route corridors varies depending on their respective alignment. In summary:
- Olive and Black1 generally have a lesser impact on the River Wye corridor
 - Black1 has the largest impact on the QEII playing fields
 - Orange has the largest impact on the Three Elms development
 - Black1 and Black2 require the largest number of houses to be demolished
 - All have a large adverse impact on Belmont Abbey and Belmont Lodge
 - All have the same potential impact on Veteran Trees
- 5.1.7. However, all seven route corridors are feasible and none have an overriding reason to be rejected at this stage. All merit more detailed appraisal in the next stage of the project.
- 5.1.8. The future work will identify the merits and challenges of each route corridor in more detail, seeking ways to maximise the benefits and mitigate any adverse impacts. This will ultimately lead to the identification of a preferred route for the bypass, which will be an important component of the Hereford Transport Package.

Figure 5.1 Route Corridors (Short List)



Appendix A

ASSESSMENT CRITERIA

ASSESSMENT CRITERIA

Note – all criteria are scored within a range of 1-5 to ensure comparability of scoring. The use of this range varies between criteria to reflect the characteristics of the individual criterion.

Score	Range	Southern Link Road Connectivity
1	2nd A465 r/b	2nd r/b and congested A465 on-line between likely to incur significant junction delay
2		
3	Acute SLR r/b geometry	Extensive re-engineering/re-positioning of SLR r/b to accommodate HBP
4		
5	Normal SLR r/b geometry	Limited re-engineering (circle to oval) of SLR r/b to accommodate HBP

This criterion is concerned with making good use of existing or planned infrastructure and minimising potential costs to the scheme through having to re-engineer connections to the planned SLR. The higher the score the better the corridors perform.

Score	Range	Scheme Length
1	>9.0km	Higher capital cost & travel distance
2	8.6<9.0km	
3	8.1<8.6km	Median Impact on Cost
4	7.9<8.1km	
5	<7.9km	Lower capital cost & travel distance

The rationale behind assessing each bypass corridor against scheme length is linked to overall costs of the scheme and journey time benefits which translate into value for money. In this instance the shorter the route the more preferable the score.

Score	Range	Scheme Cost
1	>£146m	Higher junction cost/delay/connectivity
2	£141m - £146m	
3	£135m - £140m	Median Impact on cost/delay/connectivity
4	£129m - £134m	
5	<£129m	Lower junction cost/delay/connectivity

This is a standard WebTAG criteria and should be intrinsic to decision making around which routes are included in the short list.

Score	Range	Homes Demolition
1	>6	High impact
2	6	
3	5	Median impact
4	4	
5	3	Lower impact

The impact on peoples' homes and the degree to which this may influence scheme costs has been identified as important to recording the impact on 'people'. This will be of particular relevance to consultation and stakeholder engagement. It is important to note that in this instance only homes that will sit within the corridor itself, and may therefore have a direct impact, have been considered.

Score	Title	Bridge Length Major Structure
1	Long Wye (+55m Yazor)	More Cost, Larger Impact
2	Long Wye +	
3	Long Wye (365m Green)	Median Cost, Median Impact
4	Short Wye +	Acceptable Cost, Acceptable Impact
5	Short Wye (280m Red)	Best Cost, Best Structure, Optimum Bridge

This criterion is again linked to scheme costs where the principle underpinning this is that the optimum structures will cost less than alternatives and have a lesser impact in terms of visual impact and environment (discussed later in this section).

Score	Title	Grade II Listed Structures
1	Large Adverse	As defined in Table 8: Historic Environment – Definitions of Assessment Scores in WebTAG Unit A3 : Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

There are a number of Grade II listed structures within the study area. In accordance with DMRB HA 208/07 they are a Medium Value Historic Building and all Options pass within the setting of Grade II listed structures.

Designated heritage assets are subject to specific policies in the National Planning Policy Framework (NPPF) that require (paragraphs 132 and 139):

- that substantial harm (direct or by change in the setting) to or total loss of Grade II listed buildings ... is expected to be 'exceptional'

The NPSNN also states that the SoS should "give great weight to the asset's conservation. The more important the asset, the greater the weight should be. Once lost, heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact." Heritage assets should be viewed as irreplaceable (paragraph 5.131).

This criterion qualitatively appraises the impact of the route options on Grade II listed structures and their settings located throughout the study area. This excludes Belmont Abbey and Belmont Lodge (both Grade II*) which are appraised separately (see below).

Score	Title	Setting of Belmont Abbey (Grade II*) and listed structures in curtilage
1	Large Adverse	As defined in Table 8: Historic Environment – Definitions of Assessment Scores in WebTAG Unit A3 : Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

Belmont Abbey is a Grade II* listed building with additional listed structures located within its curtilage. In accordance with DMRB HA 208/07 it is a High Value Historic Building. All route options pass within its setting. Paragraphs 132 and 139 of the NPPF, and Paragraph 5.131 of the NPSNN also apply to this asset and greater weight should be given to Belmont Abbey due to its higher value.

This criterion qualitatively appraises the impact of route options on the setting of Belmont Abbey and the listed structures within its curtilage.

Score	Title	Setting of Belmont Lodge (Grade II*) and listed structures in curtilage
1	Large Adverse	As defined in Table 8: Historic Environment – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

Belmont Lodge is a Grade II* listed building with additional listed structures located within its curtilage. In accordance with DMRB HA 208/07 it is a High Value Historic Building. All route options pass within its setting. Paragraphs 132 and 139 of the NPPF, and Paragraph 5.131 of the NPSNN also apply to this asset and greater weight should be given to Belmont Abbey due to its higher value.

This criterion qualitatively appraises the impact of route options on the setting of Belmont Lodge and the listed structures within its curtilage.

Score	Title	Belmont Lodge Unregistered Park and Garden
1	Large Adverse	As defined in Table 8: Historic Environment – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

Belmont Lodge Park and Garden is of local importance but unregistered. It is a consideration in planning policy terms along with understanding the impact on the historic environment (a WebTAG Environmental Impact Appraisal topic).

The NPSNN states that the SoS “should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including ‘local listing’, or through the nationally significant infrastructure project examination and decision making process) on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.”

This criterion qualitatively appraises the impact of route options on Belmont Lodge Unregistered Park and Garden.

Score	Title	Green Lane Ancient Woodland
1	Large Adverse	Direct impact / loss of Ancient Woodland
2		
3		
4		
5	Neutral	No Direct impact / loss of Ancient Woodland

In accordance with Interim Advice Note 130/10, Ancient Woodlands are of UK or National Value.

The NPSNN states “The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland,... unless the national need for and benefits of development, in that location, clearly outweigh the loss” (Paragraph 5.32). Ancient woodland should therefore be viewed as irreplaceable and its loss cannot be mitigated.

This criterion qualitatively appraises the impact of route options on Ancient Woodlands with a Large Adverse score assigned for any route option that passes through an Ancient Woodland and Neutral score assigned to any route option that avoids an Ancient Woodland.

Score	Title	Veteran Trees
1	Large Adverse	Direct impact / loss of Veteran Trees
2		
3		
4		
5	Neutral	No Direct impact / loss of Veteran Trees

The NPSNN states “The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including...the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of development, in that location, clearly outweigh the loss” (Paragraph 5.32). Veteran trees should therefore be viewed as irreplaceable and their loss cannot be mitigated.

This criterion qualitatively appraises the impact of route options on Veteran Trees with a Large Adverse score assigned for any route option that results in Veteran Trees being lost and Neutral score assigned to any route option that avoids Veteran Trees.

Score	Title	Landscape and Visual impact on to the north of River Wye
1	Large Adverse	As defined in Table 4: Landscape – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

The NPSNN states “in taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation” (Paragraph 5.157).

The study area passes through four different Landscape Character Types (LCT) as defined in the Landscape Character Assessment for Herefordshire (2004 updated in 2009). This allows the landscape and visual impact of each route option to be appraised at four different locations along the length of the study area. This criterion appraises the impact of each route option on LCT 7.10 which is located to the north of the River Wye.

Score	Title	Landscape and visual impact on to the south of River Wye
1	Large Adverse	As defined in Table 4: Landscape – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

The NPSNN states “in taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation” (Paragraph 5.157).

The study area passes through four different Landscape Character Types (LCT) as defined in the Landscape Character Assessment for Herefordshire (2004 updated in 2009). This allows the landscape and visual impact of each Option to be appraised at four different locations along the length of the study area. This criterion appraises the impact of each Option on LCT 7.18 which is located to the south of the River Wye.

Score	Title	SINCs
1		
2	5 SINCs directly affected	5 SINCs directly affected
3	4 SINCs directly affected	4 SINCs directly affected
4	3 SINCs directly affected	3 SINCs directly affected
5		

The NPSNN states “Sites of regional and local biodiversity and geological interest (which include Local Geological Sites, Local Nature Reserves and Local Wildlife Sites and Nature Improvement Areas) have a fundamental role to play in meeting overall national biodiversity targets, in contributing to the quality of life and the well-being of the community, and in supporting research and education. The Secretary of State should give due consideration to such regional or local designations. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent” (Paragraph 5.31). Therefore, SINCs have a lesser value than nationally designated sites, but should still be considered.

In accordance with Interim Advice Note 130/10 SINC's are of County or Unitary Authority Area Value. It is a consideration in planning policy terms along with understanding the impact on the natural environment (a WebTAG Environmental Impact Appraisal topic). All route options directly affect SINC's within the study area. This criterion considers the number of SINC's directly affected by each route option.

Score	Title	River Wye SSSI
1	Large Adverse	As defined in Tables 10, 11 & 12 in WebTAG Unit A3 : Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

In accordance with Interim Advice Note 130/10, SSSI are of UK or National Value.

The NPSNN states "Where a proposed development on land within or outside a SSSI is likely to have an adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted. Where an adverse effect on the site's notified special interest features is likely, an exception should be made only where the benefits of the development at this site clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs" (Paragraph 5.28).

All route options will cross over the River Wye SSSI and it has been assumed that no piers will be located in the river. Therefore no direct impacts are anticipated on the SSSI but there remains potential for indirect impacts

Score	Title	River Wye SAC
1	Large Adverse	As defined in Tables 10, 11 & 12 in WebTAG Unit A3: Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

In accordance with Interim Advice Note 130/10 SACs are of International or European Value.

The NPSNN states "As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives" (Paragraph 5.25). Paragraph 5.17 emphasises that international and European sites are the most important for biodiversity and the Habitats Regulations provides statutory protection.

All route options will cross over the River Wye SAC and it has been assumed that no piers will be located in the river. Therefore no direct impacts are anticipated on the SAC but there remains potential for indirect impacts.

Score	Title	Landscape and visual impact on River Wye Corridor
1	Large Adverse	As defined in Table 4: Landscape – Definitions of Assessment Scores in WebTAG Unit A3 : Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

The NPSNN states “in taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation” (Paragraph 5.157).

The study area passes through four different Landscape Character Types (LCT) as defined in the Landscape Character Assessment for Herefordshire (2004 updated in 2009). This allows the landscape and visual impact of each route option to be appraised at four different locations along the length of the study area. This criterion appraises the impact of each route option on LCT 7.14 which is located along the River Wye corridor.

Score	Title	River Wye Flood Plain
1	Large Adverse	
2		
3	Moderate Adverse	Longer structure through flood plain (approx. 300m)
4	Slight Adverse	Shorter structure through flood plain (approx 200m)
5	Neutral	

In accordance with DMRB HD45/09 Transport infrastructure in the functional floodplain must be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows; and
- not increase flood risk elsewhere.

The NPPF (paragraphs 100 to 104) makes clear that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. But where development is necessary, it should be made safe without increasing flood risk elsewhere. The guidance supporting the NPPF explains that essential transport infrastructure (including mass evacuation routes), which has to cross the area at risk, is permissible in areas of high flood risk, subject to the requirements of the Exception Test (NPSNN, Paragraph 5.91).

The NPSNN states “When determining an application the Secretary of State should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where..., it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and
- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and priority is given to the use of sustainable drainage systems.” (Paragraph 5.99)

All route corridors will cross the functional floodplain of the River Wye. This criterion qualitatively appraises the impact of corridors based on the length of the potential structure through the River Wye floodplain. The longer

the potential structure the greater the potential impact and / or infrastructure requirements to meet the requirements listed above.

Score	Title	Wye Coppice / Rough Coppice Ancient Woodland
1	Large Adverse	Direct impact / loss of Ancient Woodland
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	No Direct impact / loss of Ancient Woodland

In accordance with Interim Advice Note 130/10, Ancient Woodlands are of UK or National Value.

The NPSNN states “The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland,... unless the national need for and benefits of development, in that location, clearly outweigh the loss” (Paragraph 5.32). Ancient woodland should therefore be viewed as irreplaceable and its loss cannot be mitigated. This criterion qualitatively appraises the impact of route options on Ancient Woodlands with a Large Adverse score assigned for any route option that passes through an Ancient Woodland and Neutral score assigned to any route option that avoids an Ancient Woodland.

Score	Title	Landscape and visual impact in central and northern part of study area
1	Large Adverse	As defined in Table 4: Landscape – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

The NPSNN states “in taking decisions, the Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to avoid adverse effects on landscape or to minimise harm to the landscape, including by reasonable mitigation” (Paragraph 5.157).

The study area passes through four different Landscape Character Types (LCT) as defined in the Landscape Character Assessment for Herefordshire (2004 updated in 2009). This allows the landscape and visual impact of each Option to be appraised at four different locations along the length of the study area. This criterion appraises the impact of each Option on LCT 7.21 which is located in the central and northern part of the study area.

Score	Title	Agricultural Land Take
1		
2		82 to 93 Fields / Land Parcels
3		70 to 81 Fields / Land Parcels
4		58 to 69 Fields / Land Parcels
5		

The NPSNN states “Where significant development of agricultural land is demonstrated to be necessary, applicants should seek to use areas of poorer quality land in preference to that of a higher quality” (Paragraph 5.168).

Best and most versatile land is defined as Grade 1, 2 and 3a. The Hereford Agricultural Land Classification Map (Herefordshire Council, 2015) classifies the agricultural land within the study area as largely Grade 2 with some areas of Grade 1 (Lower Breinton area) and Grade 3 (River Wye floodplain and northern part of the study area on the approaches to the A49). All route options will pass through the same areas of best and most versatile land and therefore there are limited differences between the route options. Therefore, this criterion qualitatively appraises the number of field/land parcels affected by each route option with the least number of field/land parcels affected considered to have a lower economic impact.

Score	Title	Warham House / Burghill Hospital Unregistered Parks and Gardens
1	Large Adverse	As defined in Table 8: Historic Environment – Definitions of Assessment Scores in WebTAG Unit A3: Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

The NPSNN states that the SoS “should also consider the impacts on other non-designated heritage assets (as identified either through the development plan process by local authorities, including ‘local listing’, or through the nationally significant infrastructure project examination and decision making process) on the basis of clear evidence that the assets have a significance that merit consideration in that process, even though those assets are of lesser value than designated heritage assets.”

Warham House/Burghill Hospital Park and Gardens are of local importance but unregistered. It is a consideration in planning policy terms along with understanding the impact on the historic environment (a WebTAG Environmental Impact Appraisal topic). This criterion qualitatively appraises the impact of route options on Warham House/Burghill Hospital Unregistered Park and Gardens.

Score	Title	Orchards
1	Large Adverse	As defined in Table 4 : Landscape – Definitions of Assessment Scores in WebTAG Unit A3 : Environmental Impact Appraisal.
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	

Although Herefordshire’s Orchards are not designated at a national or local level, they carry cultural, historical and biodiversity value and are considered to be of regional value. This is was highlighted during the Phase I public consultation from feedback received. Avoidance would therefore be preferable where possible.

Score	Title	Queen Elizabeth II Playing Fields
1	Large Adverse	Direct impact on QEII Playing Fields
2		
3	Moderate Adverse	
4	Slight Adverse	
5	Neutral	No Impact on QEII Playing Fields

The Queen Elizabeth II Playing Fields is considered to be an area of designated public open space. The NPSNN states “Existing open space, sports and recreational buildings and land should not be developed unless the land is surplus to requirements or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location” (Paragraph 5.166). It also states “The Secretary of State should not grant consent for development on existing open space, sports and recreational buildings and land, including playing fields, unless an assessment has been undertaken either by the local authority or independently, which has shown the open space or the buildings and land to be surplus to requirements, or the Secretary of State determines that the benefits of the project (including need) outweigh the potential loss of such facilities, taking into account any positive proposals made by the applicant to provide new, improved or compensatory land or facilities.” Therefore, the loss of the Queen Elizabeth II playing fields can only be considered if the land is not required or well used, and if the loss can be compensated for.

This criterion qualitatively appraises the impact of route options on Queen Elizabeth II Playing Fields with a Large Adverse score assigned for any route option that passes through the playing fields and Neutral score assigned to any route option that avoids the playing fields.

Score	Title	Kings Acre Road Business Take
1	Very Large Adverse	Impact Wyevale GC/Car lot/Caravan park/Livestock Market, poor junction geometry
2	Large Adverse	Impact Wyevale GC/Car lot/Caravan park, poor junction geometry
3	Moderate Adverse	Wyevale GC/Car lot/Caravan park
4	Slight Adverse	No proximity
5	No Impact	No proximity

Paragraph 70 of the NPPF states that planning decisions should “guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community’s ability to meet its day-to-day needs”. This includes local retail services and community facilities. A key consideration in determining the route will be the impact on existing businesses. It is anticipated that through the development of route corridors, all attempts should be made to avoid impact on businesses where possible.

Score	Title	Kings Acre Road Noise Action Planning Area
1	Large Adverse	Large increase in noise
2		
3	Moderate Adverse	Moderate increase in noise
4	Slight Adverse	Slight increase in noise
5	Neutral	No Impact

A Noise Action Planning Area is a local designation based on the Noise Important Areas mapped by DEFRA, which identify areas where properties are significantly affected by noise and where improvements should be

sought. It is also important to ensure that the noise levels in these areas do not increase. This criterion is a WEBTAG criterion and has been assessed qualitatively at this stage of the project.

Score	Title	Impact on Three Elms
0.99	Very Large Adverse	Crosses residential & industrial allocation +new junctions
1	Large Adverse	Crosses residential allocation +new junction
2		
3	Moderate Adverse	Uses defined corridor/junction(s)
4	Slight Adverse	Limited proximity (<0.2km)
5	No Impact	No proximity

Three Elms trading estate is a key employment zone within the area. It is envisaged that any bypass alignment will not have an adverse impact upon the location that may affect its operation, employees accessing the site, or deliveries leaving the site.

Score	Title	Yazor Brook Flood Plain
1	Large Adverse	
2		
3	Moderate Adverse	Longer structure within flood plain (approx. 190m)
4	Slight Adverse	Shorter structure within flood plain (approx 110m)
5	Neutral	

In accordance with DMRB HD45/09 Transport infrastructure in the functional floodplain must be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows; and
- not increase flood risk elsewhere.

The NPPF (paragraphs 100 to 104) makes clear that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk. But where development is necessary, it should be made safe without increasing flood risk elsewhere. The guidance supporting the NPPF explains that essential transport infrastructure (including mass evacuation routes), which has to cross the area at risk, is permissible in areas of high flood risk, subject to the requirements of the Exception Test (NPSNN, Paragraph 5.91).

The NPSNN states “When determining an application the Secretary of State should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where..., it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and
- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and priority is given to the use of sustainable drainage systems.” (Paragraph 5.99)

All route corridors will cross the functional floodplain of Yazor Brook. This criterion qualitatively appraises the impact of route corridor based on the length of the structure through the Yazor Brook floodplain. A longer crossing could presumably reduce the potential impact as it would result in less of the structural elements actually being in the flood plain.

Score	Title	Noise impact on Residential Estate (Dorchester Way) south of River Wye
1	Large Adverse	Option within 300m of the Estate
2		
3	Moderate Adverse	Option beyond 300m of the Estate
4	Slight Adverse	
5	Neutral	

The residential estate (Dorchester Way) contains a large number of noise sensitive receptors in close proximity to the study area. The NPSNN states that the SoS should not grant Development Consent unless satisfied that the project avoids significant adverse (assumed to be moderate or large) effects on health and quality of life from noise (Paragraph 5.195).

The assessment is based upon quantifying the number of noise sensitive receptors within the study area up to 600m. Based on similar highway schemes noise sensitive receptors within 300m are likely to experience a major noise impact (Large adverse), whereas those between 300m and 600m may be exposed to a moderate noise impact (Moderate adverse). It should be noted that the overall impact at receptors will depend on the road traffic noise levels arising from the existing road network.

Appendix B

ASSESSMENT RESULTS

Unique Ref. No.	Name/No.	Description	SLR Connectivity		Scheme Length		Budget Estimate		House Demolition		Setting of Belmont Abbey (Grade II*) and listed structures in curtilage		Setting of Belmont Lodge (Grade II*) and listed structures in curtilage		Belmonth Lodge Unregistered Park and Garden		Green Lane Ancient Woodland		Veteran Trees	
1	Black	A405(SLR) - Green - Wye(W) - Green - Black - A435 - Black - Green to A49 (All dual c/way option, no A4103 Jn)	Normal SLR nb geometry	5	5.1<5.6km	3	>£146m	1	>5	1	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Neutral	5
2	Blue1	A405(SLR) - Blue(A405 online) - A405(Belmont) - Blue - Green - Wye(W) - Green - A435 - Green - A4103 - Green to A49	2nd A405 nb	1	5.6<9.0km	2	£141m - £146m	2	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Large Adverse	1	Large Adverse	1
3	Blue2	A405(SLR) - Blue(A405 online) - A405(Belmont) - Blue - Red - Wye(outer E) - Red - A435 - edge Three Elms - A4103 - Red to A49	2nd A405 nb	1	7.9<9.1km	4	<£129m	5	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
4	Brown1	A405(SLR) - Green1 - Wye(W) - Green1 - Brown1 - Red1 - A435 - edge Three Elms - A4103 - Red1 to A49	Normal SLR nb geometry	5	<7.9km	5	£129m - £134m	4	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Neutral	5
5	Brown	A405(SLR) - Green - Wye(W) - Green - Brown - Red - A435 - edge Three Elms - A4103 - Red to A49	Normal SLR nb geometry	5	<7.9km	5	£129m - £134m	4	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Neutral	5
6	Cyan	A405(SLR) - Orange - Wye(outer E) - Orange - Cyan - A435 - Purple - A4103 - Cyan - NC1 - Green to A49	Acute SLR nb geometry	3	5.1<5.6km	3	£129m - £134m	4	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
7	Green1	A405(SLR) - Green - Green1 - Wye(outer W) - Green1 - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49 (orchard conflict)	Normal SLR nb geometry	5	5.6<9.0km	2	>£146m	1	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Large Adverse	1	Neutral	5
8	Green2	A405(SLR) - Green - Wye(W) - Green - Green2 - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49	Normal SLR nb geometry	5	5.6<9.0km	2	>£146m	1	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Large Adverse	1	Neutral	5
9	Green	A405(SLR) - Green - Wye(W) - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49 (Imp corner Upper Hill Farm)	Normal SLR nb geometry	5	5.6<9.0km	2	>£146m	1	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Large Adverse	1	Neutral	5
10	Orange	A405(SLR) - Orange - Wye(outer W) - Orange - A435 - mid Three Elms - A4103 - Green to A49	Acute SLR nb geometry	3	7.9<9.1km	4	<£129m	5	4	4	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
11	Purple	A405(SLR) - Orange - Wye(centre) - Brown - Red - A435 - Purple - A4103 - Purple - Green to A49	Acute SLR nb geometry	3	7.9<9.1km	4	£135m - £140m	3	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
12	Red1	A405(SLR) - Red1 - Wye(E) - Red1 - Red - A435 - edge Three Elms - A4103 - Red - Green to A49	Normal SLR nb geometry	5	7.9<9.1km	4	<£129m	5	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Neutral	5
13	Red	A405(SLR) - Red - Wye(outer E) - Red - A435 - edge Three Elms - A4103 - Red - Green to A49	Normal SLR nb geometry	5	7.9<9.1km	4	<£129m	5	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
14	Sand	A405(SLR) - Green - Wye(W) - Green - A435/A50 - mid-Wyevale - A4103 - Sand(A4103 online) - Sand - Green to A49 (avoids Yazor Ponds)	Normal SLR nb geometry	5	5.6<9.0km	2	>£146m	1	6	2	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Large Adverse	1	Large Adverse	1
15	WL1	A405(SLR) - Blue(A405 online) - WL1 - Wye(outer E) - WL1 - A435 - mid Three Elms - A4103 - NC1 - Green to A49	2nd A405 nb	1	7.9<9.1km	4	<£129m	5	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Neutral	5
16	WL2	A405(SLR) - Blue(A405 online) - WL2 - Wye(outer E) - WL2 - A435/A50 - mid Wyevale/Livesock - A4103 - WL2(A4103 online) - NC2 - Green to A49	2nd A405 nb	1	>9.0km	1	<£129m	5	6	2	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
17	WL3	A405(SLR) - Blue(A405 online) - A405(Belmont) - WL3 - Wye(W) - WL3 - A435 - mid-Three Elms - A4103 - NC1 to A49	2nd A405 nb	1	<7.9km	5	£129m - £134m	4	4	4	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
18	WL4	A405(SLR) - WL4 - Wye(W) - WL4 - A435 - mid-Three Elms - A4103 - NC1 to A49	Normal SLR nb geometry	5	<7.9km	5	£135m - £140m	3	4	4	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
19	WL5	A405(SLR) - Blue(A405 online) - A405(Belmont) - WL5 - Wye(W) - WL5 - A435/A50 - mid Wyevale/Livesock - A4103 - WL5(A4103 online) - NC2 to A49	2nd A405 nb	1	>9.0km	1	£135m - £140m	3	6	2	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
20	WL6	A405(SLR) - WL6 - Wye(W) - WL6 - A435/A50 - mid Wyevale/Livesock - A4103 - WL6(A4103 online) - NC2 to A49	Normal SLR nb geometry	5	>9.0km	1	£129m - £134m	4	6	2	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
21	Yellow	A405(SLR) - Orange - Wye(outer W) - Orange - Cyan - Yellow - A435 - mid Three Elms - A4103 - Yellow - NC1 - Green to A49	Acute SLR nb geometry	3	<7.9km	5	<£129m	5	4	4	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
22	Olive	A405(SLR) - Red - Olive - Wye(centre) - Olive - Red - A435 - edge Three Elms - A4103 - Red to A49	Normal SLR nb geometry	5	<7.9km	5	<£129m	5	3	5	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
23	Black1	A405(SLR) - Red - Olive - Wye(centre) - Olive - Black - A435 - Black - A4103 - Black - Red to A49	Normal SLR nb geometry	5	5.1<5.6km	3	£129m - £134m	4	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1
24	Black2	A405(SLR) - Red - Wye(outer E) - Red - Black - A435 - Black - A4103 - Black - Red to A49	Normal SLR nb geometry	5	5.1<5.6km	3	£135m - £140m	3	5	3	Large Adverse	1	Large Adverse	1	Moderate Adverse	3	Neutral	5	Large Adverse	1

Unique Ref. No.	Name/ No.	Description	L&V Impact on to the north of River Wye (LCT 7.10)		L&V Impact on to the south of River Wye (LCT 7.18)		L&V Impact on River Wye Corridor (LCT 7.14)		Wye Coppice / Rough Coppice Ancient Woodland		L&V Impact in central and northern part of study area (LCT 7.21)		Agricultural Landtake		QE Playing Fields		Impact on Three Elms	
1	Black	A405(SLR) - Green - Wye(W) - Green - Black - A435 - Black - Green to A49 (All dual c/way option, no A4103 Jn)	Moderate Adverse	3	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Moderate Adverse	3	70 to 51 Fields / Land Parcels	3	Large Adverse	1	No Impact	5
2	Blue1	A405(SLR) - Blue(A405 online) - A405(Belmont) - Blue - Green - Wye(W) - Green - A435 - Green - A4103 - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
3	Blue2	A405(SLR) - Blue(A405 online) - A405(Belmont) - Blue - Red - Wye(outer E) - Red - A435 - edge Three Elms - A4103 - Red to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Moderate Adverse	3
4	Brown1	A405(SLR) - Green1 - Wye(W) - Green1 - Brown1 - Red1 - A435 - edge Three Elms - A4103 - Red1 to A49	Moderate Adverse	3	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Slight Adverse	4
5	Brown	A405(SLR) - Green - Wye(W) - Green - Brown - Red - A435 - edge Three Elms - A4103 - Red to A49	Moderate Adverse	3	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Moderate Adverse	3
6	Cyan	A405(SLR) - Orange - Wye(outer E) - Orange - Cyan - A435 - Purple - A4103 - Cyan - NC1 - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Neutral	5	Slight Adverse	4	70 to 51 Fields / Land Parcels	3	Neutral	5	Moderate Adverse	3
7	Green1	A405(SLR) - Green - Green1 - Wye(outer W) - Green1 - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49 (orchard conflict)	Moderate Adverse	3	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
8	Green2	A405(SLR) - Green - Wye(W) - Green - Green2 - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49	Large Adverse	1	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
9	Green	A405(SLR) - Green - Wye(W) - Green - A435/A50 - mid-Wyevale - A4103 - Green to A49 (Imp corner Upper Hill Farm)	Moderate Adverse	3	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
10	Orange	A405(SLR) - Orange - Wye(outer W) - Orange - A435 - mid Three Elms - A4103 - Green to A49	Moderate Adverse	3	Slight Adverse	4	Large Adverse	1	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Very Large Adverse	0.99
11	Purple	A405(SLR) - Orange - Wye(centre) - Brown - Red - A435 - Purple - A4103 - Purple - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Moderate Adverse	3	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Slight Adverse	4
12	Red1	A405(SLR) - Red1 - Wye(E) - Red1 - Red - A435 - edge Three Elms - A4103 - Red - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Moderate Adverse	3
13	Red	A405(SLR) - Red - Wye(outer E) - Red - A435 - edge Three Elms - A4103 - Red - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Moderate Adverse	3
14	Sand	A405(SLR) - Green - Wye(W) - Green - A435/A50 - mid-Wyevale - A4103 - Sand(A4103 online) - Sand - Green to A49 (avoids Yazor Ponds)	Large Adverse	1	Slight Adverse	4	Moderate Adverse	3	Large Adverse	1	Large Adverse	1	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
15	WL1	A405(SLR) - Blue(A405 online) - WL1 - Wye(outer E) - WL1 - A435 - mid Three Elms - A4103 - NC1 - Green to A49	Moderate Adverse	3	Slight Adverse	4	Large Adverse	1	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Large Adverse	1
16	WL2	A405(SLR) - Blue(A405 online) - WL2 - Wye(outer E) - WL2 - A435/A50 - mid Wyevale/Livesock - A4103 - WL2(A4103 online) - NC2 - Green to A49	Moderate Adverse	3	Slight Adverse	4	Large Adverse	1	Neutral	5	Moderate Adverse	3	52 to 93 Fields / Land Parcels	2	Neutral	5	No Impact	5
17	WL3	A405(SLR) - Blue(A405 online) - A405(Belmont) - WL3 - Wye(W) - WL3 - A435 - mid-Three Elms - A4103 - NC1 to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Large Adverse	1
18	WL4	A405(SLR) - WL4 - Wye(W) - WL4 - A435 - mid-Three Elms - A4103 - NC1 to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Large Adverse	1
19	WL5	A405(SLR) - Blue(A405 online) - A405(Belmont) - WL5 - Wye(W) - WL5 - A435/A50 - mid Wyevale/Livesock - A4103 - WL5(A4103 online) - NC2 to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Moderate Adverse	3	70 to 51 Fields / Land Parcels	3	Large Adverse	1	No Impact	5
20	WL6	A405(SLR) - WL6 - Wye(W) - WL6 - A435/A50 - mid Wyevale/Livesock - A4103 - WL6(A4103 online) - NC2 to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Moderate Adverse	3	52 to 93 Fields / Land Parcels	2	Large Adverse	1	No Impact	5
21	Yellow	A405(SLR) - Orange - Wye(outer W) - Orange - Cyan - Yellow - A435 - mid Three Elms - A4103 - Yellow - NC1 - Green to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Neutral	5	Large Adverse	1
22	Olive	A405(SLR) - Red - Olive - Wye(centre) - Olive - Red - A435 - edge Three Elms - A4103 - Red to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Neutral	5	Slight Adverse	4	55 to 69 Fields / Land Parcels	4	Large Adverse	1	Slight Adverse	4
23	Black1	A405(SLR) - Red - Olive - Wye(centre) - Olive - Black - A435 - Black - A4103 - Black - Red to A49	Moderate Adverse	3	Moderate Adverse	3	Moderate Adverse	3	Neutral	5	Moderate Adverse	3	70 to 51 Fields / Land Parcels	3	Large Adverse	1	No Impact	5
24	Black2	A405(SLR) - Red - Wye(outer E) - Red - Black - A435 - Black - A4103 - Black - Red to A49	Moderate Adverse	3	Moderate Adverse	3	Large Adverse	1	Neutral	5	Moderate Adverse	3	70 to 51 Fields / Land Parcels	3	Neutral	5	No Impact	5



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