

**A66 Northern Trans-Pennine Project  
TR010062**

**7.31 Issue Specific Hearing 3 (ISH3)  
Post Hearing Submission – Response  
to Examining Authority’s Request  
Under Agenda Item 3.2: Environmental  
Mitigation Area Sizes and Locations**

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Planning Act 2008

**The Infrastructure Planning  
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A66 Northern Trans-Pennine Project  
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**7.31 ISSUE SPECIFIC HEARING 3 (ISH3) POST HEARING  
SUBMISSION – RESPONSE TO EXAMINING  
AUTHORITY’S REQUEST UNDER AGENDA ITEM 3.2:  
ENVIRONMENTAL MITIGATION AREA SIZES AND  
LOCATIONS**

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## 1 Introduction

- 1.1.1 This document has been prepared in response to the Examining Authority’s request under Agenda Item 3.2 of the Issue Specific Hearing 3 (ISH3) held on Thursday 2 March 2023.
- 1.1.2 During ISH3, the Applicant worked through the justification for the need, location, and size of the two example plots picked by the Examining Authority, being Plots 03-04-04 and 08-01-16 during ISH3.
- 1.1.3 Following ISH3, and as outlined in the ISH3 Post Hearing Submissions (including written submissions of oral case) (Document Reference 7.30), the Applicant has set out a detailed justification in this document for the need, location and size of all eleven plots mentioned in the ISH3 Hearing Agenda under Agenda Item 3.2.
- 1.1.4 During ISH3 the ExA requested explanation of ecology mitigation for additional plots where this may be useful. An additional four plots have been chosen to illustrate different aspects of mitigation.
- 1.1.5 Supplementary Mitigation Maps have also been provided for each of the plots at Appendix A to this document, to help illustrate the explanations provided. These Maps are uploaded separately due to the file size.

## **2 Plot 0102-01-34**

### **2.1 Need for the mitigation plot**

2.1.1 Scheme 01/02 includes 9.2 Ha loss of broadleaved, mixed and coniferous woodland including those of high and medium value (lowland mixed deciduous woodland, lowland beech and yew woodland and Scot’s pine woodland) with associated habitat loss for red squirrels, bats, other mammals and breeding birds. To the western end of the scheme there is a minor impact on woodland within the Skirsgill Woods County Wildlife Site (CWS).

### **2.2 How the location of the plot was decided**

2.2.1 The location of this plot was chosen as it was within the vicinity of losses at Skirsgill Woods CWS and woodland losses along the A66. The area had several restrictions to woodland planting due to its parkland setting with large estate trees within open grassland. The original proposal was to enhance and widen the woodland around the length of the parkland. Landowner consultation established that this would affect views from the property and there was a preference for woodland planting to be limited to the end of the parkland along the river. The plot was chosen in consultation with the landowner and landscape colleagues as providing the least visual intrusion, while maximising opportunities for biodiversity. From a landscape perspective, the selected area is visually constrained by the riparian woodland along the river Eamont and contributes to the screening of the mobile home site at Mill Race Drive.

2.2.2 The proposed woodland planting within Plot 0102-01-34 is considered to be the most suitable location to fulfil multiple ecological mitigation requirements of the 01/02 Scheme, and of the Project as a whole. In respect of the area of land in question (see associated plan), the rationale behind locating the mitigation in this location from a biodiversity perspective is as follows:

- Increasing the extent of the broad-leaved woodland along the River Eden and tributaries Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) and at the location of remnant ancient woodland.
- Increasing the extent of broad-leaved woodland adjacent to the Yanwath Wood CWS, cited as a beneficial impact in the ES.
- Increasing the extent of feeding resources and connectivity along a red squirrel corridor which connects to linear woodland habitat along the A66 and along the river corridor.
- Providing additional resting habitat for otters, a feature of the river Eden SAC and SSSI.
- Providing additional roosting habitat for bats along a known foraging corridor (the river Eden).

## 2.3 Consideration of new alternatives proposed

2.3.1 The landowner has suggested two alternative plots in the area that they would prefer to be planted as woodland instead of Plot 0102-01-34. Our review of these alternative plots is as follows:

- The proposed planting size is equivalent in area to the existing mitigation area provided by 0102-01-34 but consists of two smaller plots which offers less continuous cover.
- The riparian habitat enhancement along the River Eden SAC and SSSI reduces from 372m to 112m.
- The proposed alternative woodlands would offer equivalent connectivity for red squirrel although the plot north of the M6 potentially has less value for red squirrels than Plot 0102-01-34 as it is more isolated.
- The proposed woodlands remain in the vicinity of losses along the A66 and within Skirsgill woods, are further away from remnant ancient woodland and there would be no beneficial effect on Yanwarth wood.
- In terms of bats, badgers, otters and birds, the proposed woodland offers similar mitigation affects albeit of slightly less value due to creating two small woodlands instead of one larger one and providing less additional habitat along the river corridor.

2.3.2 Overall, moving the woodland planting in Plot 0102-01-34 to the two plots proposed would reduce riparian habitat enhancement and would not offer the same opportunity to maximise biodiversity enhancement, in accordance with paragraph 5.33 of the NPSNN.

## 2.4 How the size of the plot was decided

2.4.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the biodiversity tool to work out sufficient replacement planting to conclude no significant effects. Of the overall woodland mitigation required for Scheme 01/02, the woodland area that could be added to this plot to mitigate for woodland loss for red squirrels in the vicinity was maximised within the constraints of the parkland setting to the north and the river meander on all other sides.

### **3 Plot 03-02-01**

#### **3.1 Need for the mitigation plot**

- 3.1.1 The main area of this plot has been taken for engineering purposes to allow for flexibility for the relocation of services. The large grassland area is highlighted for restoration back to original condition as part of landscape integration.
- 3.1.2 The watercourse where part of this plot diverts to the north is called Light Water and was assessed to be of national importance as a habitat and for its fish population, as it supports salmon, a qualifying feature of the River Eden SAC. The road widening along this scheme causes the loss of linear watercourse features due to culverting various watercourses running under the existing road to enable road widening. This has short term disturbance effects on fish and other aquatic wildlife.

#### **3.2 How the location of the plot was decided**

- 3.2.1 Due to the main area of this plot being related to service relocation, the scope to consider alternatives was limited at this location. There is an underground high pressure gas main that needs to be diverted to accommodate the new A66 as the existing main doesn't have adequate cover/protection. The exact location and details will be developed further during detailed design by the utility company. The proposed mitigation for the grassland in this plot is to restore the area to its current state following the proposed works as part of landscape integration.
- 3.2.2 To the north of this plot, an opportunity to enhance a watercourse and provide greater connectivity from the river Eamont (part of the river Eden and tributaries SAC and SSSI) was highlighted by surveyors at an early stage of the project.
- 3.2.3 Due to the requirement to provide mitigation for linear watercourse habitat losses, including for the culverting of Light Water tributary, and disturbance effects on fish, this location was chosen as essential mitigation along the same watercourse that the loss occurs.
- 3.2.4 The proposed mitigation does not directly create watercourse habitat but improves connectivity for aquatic species including fish and aquatic invertebrates to move between the SAC and Light Water, which is considered functionally linked habitat.

#### **3.3 Size**

- 3.3.1 The size of the plot allows for the service diversion, access to the watercourse mitigation from the scheme and a small temporary working area around the proposed culvert upgrade, which was advised using the professional judgement of engineers based on their experience of undertaking similar works.



## **4 Plot 03-04-04**

### **4.1 Need for mitigation land**

- 4.1.1 Scheme 03 includes loss of 4.48Ha of broad-leaved and coniferous woodland including those of high value (including wet woodland, lowland mixed deciduous woodland) with associated habitat loss for red squirrels, bats, other mammals, and breeding birds. To the south of the proposed scheme and outside of the red line boundary is Whinfell Forest CWS which is designated for red squirrel.
- 4.1.2 The losses in the vicinity of this plot occur where the road would be widened between two existing woodlands. This also causes a risk of mortality for species crossing the road at this point due to the increased distance and higher speed/frequency of traffic. While this can be mitigated for larger mammals such as otters and badger by providing a crossing point and guiding fencing, mitigation for loss of connectivity and increased mortality is required for red squirrel, barn owl and bats in the vicinity of this impact.
- 4.1.3 The Swine Gill Beck which runs through this plot and crosses under the road to the north is being culverted with some loss to watercourse as a habitat and disturbance effects on fish and other aquatic wildlife. The biodiversity guidance calculates loss of linear habitats such as watercourses and hedgerows as well as areas. Enhancement of existing watercourses was required as essential mitigation.

### **4.2 How location was decided upon**

- 4.2.1 The proposed woodland planting within Plot 03-04-04 was considered to be the most suitable location to fulfil multiple ecological mitigation requirements of Scheme 03. In respect of the area of land in question (see associated plan, appended to this document at Appendix A), the rationale behind locating the mitigation in this location includes the following.
- 4.2.2 There is north south connectivity from Whinfell Forest CWS to the Swine Gill plantation with an obvious gap which was highlighted as an opportunity to enhance connectivity on this scheme at an early stage. The proposed woodland fills this gap and connects a third plot of isolated woodland and other semi-natural habitat through connective scrub/grassland mosaic planting.
- 4.2.3 The third block of woodland to the east of this plot is included as enhancement of existing woodland. The biodiversity tool allows for enhancement as well as habitat creation and less woodland will need to be planted when the enhancement of this woodland is considered in the tool. Enhancement would not involve removing existing woodland but may include adding a greater variety of species suitable for red squirrel foraging and promoting structural diversity through selective thinning for example.

- 4.2.4 The plot location also allows for mitigation for watercourse loss to be located along the same watercourse as the impact occurs through enhancement of 400m of riparian habitat.
- 4.2.5 The choice of location for habitat creation and enhancement at this plot also has numerous opportunities to enhance for other species affected by the proposed scheme:
- Great crested newts are known to be present around the existing wetted areas to the east of these two woodland locations. The proposal of scrub/grassland mosaic habitat mitigation planting and the provision of additional ponds provides an opportunity to enhance the existing terrestrial habitats for these species.
  - The habitat at this location was also considered suitable to support common lizards and there are records in the area, including at Whinfall Forest CWS. This connecting habitat offers opportunities for this species to expand and disperse, as well as offering a reptile receptor site for translocation should this be needed, which would connect to an existing population.
  - Bats are known to cross the existing road at the Swine Gill plantation and a crossing point has been adapted for their use at this point. The north-south connective corridor of woodland would also benefit bat species as well as providing additional foraging areas to mitigate those being lost.
- 4.2.6 In terms of consideration of alternative locations for woodland planting for this scheme, several different options were included at statutory consultation stage. One area of woodland planting including a reptile receptor area was considered connecting to Whinfall Forest CWS within an agricultural field to the west. The landowner requested this be removed due to the high agricultural value of that field. Another option was a woodland block to the north of the A66 at the eastern extent of the scheme, but this was reduced to linear woodland within the engineering boundary to remove it from high value agricultural land as it offered less species benefits compared to the chosen plot. A third option to mitigate losses to the east of the scheme was to create linear woodland to the south of the road between Swine Gill plantation and the Centre Parcs junction connecting down to Whinfall Forest. The landowner fed back that this would cut across three fields which would be undesirable, and the extent was reduced to a linear woodland at this location which reduced impacts on Grade 2 agricultural land. The proposal of linear woodland along the road was also considered inappropriate by the landscape team as there was a preference to maintain open views and have woodland blocks rather than a linear woodland along this stretch. The statutory consultation proposals also included a fourth option to the north of the Centre Parcs junction to connect woodland in the north. At this location the landscape team agreed with engineers to create a 1:20 slope to maintain views and restore Grade 2 agricultural land in a usable condition, therefore it was not considered a suitable location for a woodland block. Although there is mitigation planting and a red squirrel crossing proposed at the Centre

Parcs junction this junction remains a barrier to this species and bats. There was a preference to create north south connectivity elsewhere on the scheme and a preference to connect to Whinfell Forest as a far larger extent of habitat for red squirrel than smaller woodlands to the north.

### 4.3 Consideration of new alternatives proposed

4.3.1 The landowner proposed a woodland block to the north of Swine Gill Plantation which had already been planted with trees, Adrian’s Wood. This compares to the chosen location as follows:

- Size – smaller extent of mitigation habitat at 2.71Ha compared to 4.71Ha woodland, 3.3Ha scrub/grassland and three ponds. The shortfall in mitigation land would need to be found elsewhere on the scheme. The ponds are not essential mitigation so would not need to be replaced but these were an opportunity to enhance biodiversity in conformity with the paragraph 5.33 of the National Networks National Policy Statement, which would be lost.
- Riparian habitat – if extended, offers similar opportunity to enhance 400m of riparian habitat along Swine Gill beck through woodland planting and management.
- Red squirrel – provides connectivity to a less optimal area of habitat compared to existing proposal to the south as woodland planting would connect to existing hedgerows which lead to small woodland plots to the north. Existing tree species planted by the landowner are primarily broad-leaved and would need to have 50-60% conifer species suitable for red squirrel to adequately mitigate foraging resources. The area is currently smaller than the current provision as stated above and would need to offer the same extent of foraging habitat as the existing plot and be connected to the adjacent woodland plot.
- Reptiles / great crested newts – the area to the north does not provide the same enhancements as creating ponds adjacent to existing newt populations and there is sub-optimal connectivity to known reptile populations for a receptor site.
- Badgers/otters/barn owl/bats – similar opportunities provided in terms of foraging if the same extent and range of habitats can be created to the north as the existing plot size is larger. The Adrian’s wood planting offers similar connectivity on a landscape scale for these species.

4.3.2 Overall, the chosen location for the woodland block (Plot 03-04-04) connects two isolated woodlands to a larger woodland of county wildlife value while providing enhancements for multiple species and north-south connectivity, which would not be achieved as optimally at another location. The location of the proposed habitat is likely to be of more value to red squirrel populations than habitat provision to the north due to connection to a county wildlife site for this species.

## **4.4 Size**

- 4.4.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the biodiversity tool to work out sufficient replacement planting to conclude no significant effects. The loss of coniferous woodland in this part of the scheme meant an area of replacement woodland was required. The size was determined by needing to run the length of the gap between the two existing woodland blocks with sufficient width to meet the habitat replacement requirements.
- 4.4.2 The length of watercourse mitigation required was similarly determined in accordance with the Defra Guidance by applying the biodiversity tool.

## **5 Plot 0405-03- 90 (including Plot 0405-04-64)**

### **5.1 Need for mitigation land**

- 5.1.1 Scheme 04/05 had high bird species richness and abundance with large numbers of wintering lapwing and golden plover using arable grassland fields, particularly either side of Sleastonhow Lane, north of Priest Lane/south of Cross Street and south of the A66 at the eastern extent of the scheme. Specific mitigation for these species was required in order to reduce the impacts of habitat loss, degradation and severance to below significant. The proposed mitigation includes three large areas set aside for bird mitigation with habitat enhancements proposed to increase the carrying capacity and foraging resources available for lapwing and golden plover specifically.
- 5.1.2 Scheme 04/05 also included loss of 5.1Ha of woodland including woodlands of high and medium value (lowland mixed deciduous woodland, wet woodland and other broadleaved woodland) with associated protected species including breeding birds, bats and other mammals.

### **5.2 How location was decided upon**

- 5.2.1 The plots chosen as lapwing and golden plover mitigation across the scheme were all chosen as adjacent to or within the most highly used fields by these species during surveys. Plot 0405-03-90 and the adjacent plot to the east (Plot 0405-04-64) were considered an essential location for lapwing and golden plover habitat mitigation due to the high numbers recorded in wintering bird surveys in the fields around Sleastonhow Lane. The plot contained an existing area of degraded wetland habitat which had been highlighted during statutory consultation by Kirby Thore Parish Council as an opportunity to restore mire habitat and restore seasonally inundated grassland for the benefit of breeding and wintering birds. This enabled the proposed mitigation to provide further opportunities for enhancement for Priority Habitats as well as other species including plants and invertebrates that would benefit from habitat restoration for birds.
- 5.2.2 Plot 0405-03-90 also contains woodland management to the north and some woodland planting. There were woodland losses in small pockets throughout Scheme 04/05 (including within this plot) and due to the open nature of the area, alternatives such as replacement as linear woodland along the road was not considered to be in keeping with landscape character. The woodland was therefore provided as a block of habitat adjacent to an existing woodland where the main woodland losses of the scheme occur. The retained woodland was also taken as mitigation for woodland losses and degradation at this point and elsewhere on the scheme as part of the biodiversity tool calculations. Several alternative sites for blocks of woodland planting were considered as part of reviewing three scheme options including block planting around Temple Sowerby SSSI but once the extent of woodland was confirmed, plot 0405-03-90 was chosen as it was adjacent to the main area of impact of woodland loss and an existing woodland block and therefore provided benefits of enhancing

the resilience and recovery of woodland where the main habitat and species impacts would occur.

### **5.3 Size**

- 5.3.1 In terms of the size of habitat enhancement for bird mitigation, the area was considered to be an equivalent size of the fields being lost or fragmented by the proposed scheme where high abundance or species richness had been recorded, as assessed by the project’s ornithologist. The area needed to be large enough to support breeding birds away from the immediate disturbance of the new road and away from adjacent woodland. The restoration of wetland and mire habitat required a buffer from surrounding farmland run off. The size of the plot was assessed as adequate to offset the amount of lapwing and golden plover habitat being lost to the project through professional judgement using experience from similar schemes.
- 5.3.2 In terms of the woodland planting, as explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the Defra biodiversity guidance and tool to secure sufficient replacement planting so as to reach a conclusion of no likely significant effects. The tool allows for woodland enhancement as mitigation for woodland loss as well as habitat creation and the size of woodland planting reflects the necessary amounts for mitigation of this habitat once enhancement is taken into account.

## **6 Plot 06-04-48**

### **6.1 Need for mitigation**

- 6.1.1 This area has been taken to allow for drainage to the south of Lowgill Beck. The proposed mitigation in this plot is to provide species-rich grassland to integrate the drainage design into the landscape, although also provides a biodiversity enhancement compared to the existing intensively managed arable grassland. This plot is not required for biodiversity mitigation.

## **7 Plot 06-05-36**

### **7.1 Need for mitigation land**

7.1.1 Scheme 06 includes loss of 13.06Ha of broad-leaved, mixed and coniferous woodland including those of high and medium value (lowland mixed deciduous woodland, wet woodland and other broad leaved) with associated habitat loss for red squirrels, bats, otter, other mammals and breeding birds. The scheme also includes watercourse loss due to culverting.

### **7.2 How location was decided upon**

7.2.1 Woodland losses occur where the A66 passes over Lowgill Beck and within the woodland where this plot is located due to drainage design. These losses could not be mitigated by planting to the north of the A66, due to the need to retain views within the AONB. Alternatives were reviewed as part of various options for the scheme itself, including a block of woodland planting to the north of Langrigg junction close to existing woodland within MOD land, and woodland planting around the eastern-most junction of the scheme. Woodland planting at the eastern most junction was not considered appropriate by the landscape team due to the AONB and sight lines. When the extent of woodland planting required was known for the required option, planting to the north was not considered necessary and woodland loss could be adequately mitigated by enhancing an existing woodland rather than planting new woodland to the north within the AONB. Management of woodland at Plot 06-05-36 was therefore selected as woodland mitigation instead of woodland creation at a ratio worked out with the biodiversity tool. This would involve enhancement of an existing woodland corridor along Lowgill Beck. This also offered opportunities for enhancement through additional foraging resource and shelter for protected and priority species which surveys confirmed were using this corridor (or had the potential to) including red squirrel, otter, bats and barn owl. The enhancement and long-term management of riparian habitat of Lowgill Beck was also required as mitigation for the loss of river habitat through culverting, due to road widening in this area.

### **7.3 Size**

7.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat or enhancement of woodland for the scheme was determined by baseline survey and assessment, and calculation of losses using the biodiversity tool to work out sufficient mitigation so as to reach a conclusion of no likely significant effects. The loss of broadleaved woodland in this part of the scheme meant an area of mitigation was required within the vicinity and the ratio for woodland enhancement rather than creation meant the whole woodland was required as mitigation.



## **8 Plot 07-01-44**

### **8.1 Need for mitigation land**

8.1.1 This area has been taken to allow for the relocation/redesign of settlement ponds and a drainage outfall to the river.

### **8.2 How location was decided upon**

8.2.1 The proposed mitigation in this plot is to provide species-rich grassland to integrate the settlement pond area into the landscape and restore to existing habitat conditions. This is required for landscape integration and does not have a specific ecology mitigation function.

### **8.3 Size**

8.3.1 Scheme 07 includes the loss of 4.15Ha of woodland including woodland of medium value (other broad-leaved woodland), therefore any woodland loss caused by changes to drainage design were required to be replaced where there were no cultural heritage or landscape constraints.

8.3.2 Regarding the constraint on woodland planting around scheme 7, several options were presented at statutory consultation stage especially around the junction to the east of the scheme, to the north and south of the settlement pond between this junction and Bowes Bypass junction and a linear woodland to the north of the A66 at the western end of the scheme. All these options were removed in accordance with cultural heritage constraints as they interfered with the fossilised field systems which are prevalent throughout the scheme. The council’s cultural heritage team were consulted and confirmed these field systems could not be altered. Due to the open nature of the Bowes bypass area, the woodland losses were primarily from plantation woodland along the existing A66 with no high value woodlands identified within the scheme extents. Replacement planting at Scheme 07 amounts to 2.2Ha with remaining planting requirement moved to Scheme 08 which does support higher value woodlands in agreement with the local authority during the Approach to Project Design Principles meeting.

## **9 Plot 08-01-04**

### **9.1 Need for mitigation land**

- 9.1.1 This area has been taken to allow for the relocation of services, specifically relocating an overhead power line underground and needs to be chased back to the available poles, hence the elongated shape. The southern half of the proposed mitigation in this plot is to restore the area to its current state. The northern half is grass verge and hedgerow required for landscape integration and does not have a specific ecology mitigation function.

## **10 Plot 08-01-16**

### **10.1 Need for mitigation land**

10.1.1 Scheme 08 includes loss of 2.58Ha woodland including those of high and medium value (wood pasture and parkland, lowland mixed deciduous woodland, other broad-leaved woodland) requires high ratio replacement using guidance from NE. The woodland losses were primarily around Rokeby Park and Cross Lanes junction. The loss of woodland on Scheme 07 (4.5Ha) could not be fully mitigated by woodland planting within that scheme boundary due to the numerous cultural heritage and landscape constraints, therefore it was agreed at the Approach to Project Design Principles meeting with the local authority that woodland would be planted at Scheme 08 to mitigate for both Scheme 07 and Scheme 08 losses. See paragraph 8.3.2 for further information on woodland creation limitations at Scheme 07.

### **10.2 How location was decided upon**

10.2.1 The mitigation design for this plot is part of a large woodland extent created around an existing high value woodland in one of the few locations suitable for woodland planting along the scheme. Alternatives reviewed included linear woodland and planting blocks to the east of the scheme around Rokeby Park, linear woodland blocks to the north and south of the A66 to the west of Street Side Farm, and woodland blocks along the river Tees. There were limitations on where woodland habitat creation could be located due to the historic parkland setting to the east and the linear woodland and blocks at these locations were considered to cause cultural heritage impacts. The linear woodland to the west of Street Side Farm was requested by the landowner to be redesigned as it cut across three arable fields of high value. The landowner offered an area of their land preferred for woodland planting and due to a change in junction design this area of planting already required redesign. There was a requirement to keep open views to the south, to the east of Cross Lanes junction so that woodland block was not favoured. Overall, due to the limitations it was decided to create a large woodland extent as this would create a more resilient woodland to survive extreme weather and other effects of climate change as well as being a more continuous resource for wildlife. The woodland along the river Tees was therefore discounted in favour of this Plot 08-01-16, which is better connected to the scheme design, linking to an area of settlement ponds allowing easier access for management than an isolated mitigation site.

10.2.2 The location also connects to woodland mitigation planting added across Cross Lanes junction to facilitate bat crossing points and provide landscape integration. This woodland planting also provides additional cover for otters travelling along minor watercourses off Tutta Beck where underpasses have been provided around the Cross Lanes junction to facilitate otter movements to and from this area. The woodland provision mitigates for loss of bat foraging habitat and commuting points across the scheme and includes provision of bat boxes as well as enhancement of

existing woodland. The woodland also buffers existing lowland mixed deciduous woodland and is in keeping with other woodland blocks around the Mortham estate with no landscape and cultural heritage constraints raised.

## **10.3 Size**

10.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the biodiversity tool so as to reach a conclusion of no likely significant effects. Woodland was placed along the scheme where possible but the extent of woodland creation required and the landscape and cultural heritage limitations across the scheme led to a large woodland block being created to the size specified in the tool extending to field boundaries.

## **11 Plot 08-02-09**

### **11.1 Need for mitigation land**

11.1.1 Scheme 08 includes loss of 2.58Ha woodland including those of high and medium value (wood pasture and parkland, lowland mixed deciduous woodland, other broadleaved woodland). The woodland losses were primarily around Rokeby Park and Cross Lanes junction. Although alternatives were reviewed, there were limitations on where woodland habitat creation could be located due to the historic parkland setting to the east and requirement to keep open views to the south. There was also loss of numerous bat flight lines to the east of the scheme around Rokeby Park which could not be fully mitigated at this location due to the landscape and cultural heritage limitations on tree planting.

### **11.2 How location was decided upon**

11.2.1 This plot was highlighted in opportunity mapping as a location for connective planting for bats roosting within the farm buildings. The alternative options in this area included woodland planting along the side of the farm buildings and linear woodland to the east and south of the A66. Consultation with the landowner led to removal of some woodland plots which were taking part of three arable fields and the landowner indicated a preference for this plot to the north of the farm. This location was considered a suitable alternative to provide a dual function of woodland replacement and enhance north-south connectivity for bats and other wildlife by providing a stepping-stone habitat at the point of a bat flight line between Manyfold Brook to the north and Tutta Beck to the south. Woodland planting could not be provided along the proposed road to the south at this point due to retaining open views, so hedgerows complete the connectivity to the south.

### **11.3 Size**

11.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the biodiversity tool so as to reach a conclusion of no likely significant effects. Woodland was placed along the scheme where possible and this plot was planted to the full extent the landowner indicated was suitable for their operations.

## **12 Plot 08-03- 01**

### **12.1 Need for mitigation land**

- 12.1.1 This plot covers the central area of Scheme 08 which is required for engineering purposes associated with the construction of the road and settlement ponds, landscape integration, visual screening and mitigating the impact of the proposed road on historic setting of Rokeby Park as well as ecology mitigation. The central area of the scheme is off-line and brings the road closer to ancient woodland to the south, so mitigation was also needed to buffer habitats and facilitate species such as bats crossing the road at this location.
- 12.1.2 Scheme 08 includes loss of 2.58Ha woodland including those of high and medium value (wood pasture and parkland, lowland mixed deciduous woodland, other broad-leaved woodland). The woodland losses were primarily around Rokeby Park and Cross Lanes junction. Although alternatives were reviewed, there were limitations on where woodland habitat creation could be located due to the historic parkland setting to the east and requirement to keep open views to the south as discussed above.

### **12.2 How location was decided upon**

- 12.2.1 Historic records showed that the creation of an entrance defined by woodland would not be at odds with the original design intent for Rokeby Park which influenced the location of woodland planting between the existing and proposed A66. Historic England were consulted on the type of woodland planting, particularly the edge treatments and approved of the proposed approach. This is secured in Document 5.11 Project Design Principles (APP-302) Table 4-12 08.08 and 08.09.
- 12.2.2 Ecology mitigation within this plot includes hedgerow planting to retain east-west connectivity along the proposed road and link up larger areas of habitat creation and/or enhancement to the north and south. Woodland planting is included to the south of the plot to buffer the ancient woodland and mitigate for disturbance of ancient woodland at the pond outfall location. Woodland planting was also required in this central area to mitigate for bat flight lines and connect up woodland planting in the central junction as ‘stepping-stone’ habitat. The land adjacent to the rectory is species-rich grassland for essential landscape mitigation for landscape integration. In addition, the areas of species-rich grassland also provide enhancements for biodiversity not required as part of the essential mitigation for ecology.
- 12.2.3 The area around the settlement pond was also required for engineering purposes. The land was included as there needs to be investigation at detailed design on the outfall route from the pond to the watercourse. Species-rich grassland is included for landscape integration of the final settlement pond and drainage design. This also provided an opportunity to enhance for biodiversity at this location, but this is not essential ecology mitigation.

## **13 Plot 0102-02-101**

### **13.1 Need for mitigation land**

13.1.1 Scheme 01/02 includes 9.2 Ha loss of broadleaved, mixed and coniferous woodland including those of high and medium value (lowland mixed deciduous woodland, lowland beech and yew woodland and Scot’s pine woodland) with associated habitat loss for red squirrels, bats, other mammals and breeding birds.

### **13.2 How location was decided upon**

13.2.1 A large proportion of the woodland loss occurs at the eastern end of the scheme to the north of the existing A66 and in the first instance the preference is for woodland to be replaced adjacent to this location and woodland creation and enhancement options were considered to the north of the A66. However, there are restrictions due to the residential and amenity areas and hospital grounds to the north, so replacement woodland planting was needed elsewhere at this end of the scheme where it would provide the function of connecting habitat for red squirrel and other species such as bats.

13.2.2 Due to the settlement pond location at the eastern end of the scheme, there was a request by the Environment Agency to create linear wet/riparian woodland habitat along the river Eamont to minimise the risk of the river eroding and undermining the settlement pond. The additional woodland replacement habitat required was added to this woodland creation to create a larger extent of woodland and enhance a connective corridor along the river for red squirrel, bats and otters to benefit from. The riparian woodland enhancement was also required to mitigate for loss of watercourse habitat within the scheme and to contribute to Water Framework Directive targets, The river Eamont is part of the River Eden and Tributaries SAC and SSSI so also contributes to enhancement and buffering of this designated site and will benefit the qualifying species.

13.2.3 The woodland could not be extended to the west due to planning restrictions adjacent to the police headquarters. By extending the woodland planting to the east it served a dual purpose of improving crossing points for barn owls, which suffer mortality due to traffic at this location. . Potential wet woodland locations further to the east along the river were also considered but these were further from the point of loss than the chosen location with no part of the woodland within the engineering boundary.

### **13.3 Size**

13.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement woodland habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the Defra guidance and biodiversity tool so as to reach a conclusion of no likely significant effects. Woodland was placed along the scheme where possible

and this plot was planted to maximise a corridor along the river and to join the A66 verge planting.



## **14 Plot 0102-02-24**

### **14.1 Need for mitigation land**

14.1.1 Scheme 0102 includes loss of 0.8Ha of open mosaic habitat on previously developed land which is a priority habitat of high value for conservation.

### **14.2 How location was decided upon**

14.2.1 The impact on open mosaic habitat occurs at this location with temporary construction access to one of the compound areas of the scheme running through the area. The location was based on open mosaic habitat being present already at this location with the opportunity to enhance existing habitat and restore habitat where it was lost. This area had been highlighted during field surveys as providing opportunities to enhance existing habitat with benefits for terrestrial invertebrates and reptiles. It also offers east-west connectivity as it links two other mitigation plots south of Kemplay Bank Roundabout to the west with species-rich grassland, scrub and woodland to the east. There were few alternative choices in the vicinity of the habitat loss to create this type of habitat due to the nutrient-poor substrate required. As this temporary works area would need to be restored to its original condition, it was the most favourable choice to create and extend this habitat type.

### **14.3 Size**

14.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the Defra guidance and biodiversity tool so as to reach a conclusion of no likely significant effects. Open mosaic habitat is a high value habitat requiring higher ratio replacement.

## **15 Plot 06-01-14**

### **15.1 Need for mitigation land**

15.1.1 Scheme 06 includes the loss of acid grassland and heathland which are habitats of high conservation value with associated loss of habitat for reptiles, terrestrial invertebrates, and breeding birds, as well as a range of other semi-natural habitats.

### **15.2 How location was decided upon**

15.2.1 The area of heathland loss is at the far west of Scheme 06 and mitigation land was chosen adjacent to this impact and adjacent to a large heathland area to extend and connect an existing habitat patch. The acid grassland loss occurs in the same area to the west, as well as in other pockets throughout the scheme. Mitigation will take the form of soil treatment to reduce nutrients, seeding with appropriate acid grassland species and allowing heather to naturally regenerate. It was therefore important to site the mitigation area adjacent to a donor site that would act as a seed source for habitat creation.

15.2.2 The area is also part of semi-natural habitat replacement creation mitigation for breeding and wintering bird habitat losses throughout the project. The plot is known to support breeding skylark and is opposite bird mitigation areas for golden plover (a North Pennine Moors SPA species) and lapwing, creating a larger habitat patch size. The proposed mitigation would also act as a dual-purpose area should a reptile receptor site be required for the scheme, sited adjacent to an area rated good and exceptional for reptile populations, which is being partly lost to the scheme footprint. Habitat creation for reptiles would benefit terrestrial invertebrate and bird species increasing foraging resources in the area. Alternative areas were considered to the south of the A66 at this point and further north. The plots to the south would not have provided contiguous connection to existing heathland required for successful heathland restoration and connectivity to suitable habitat for reptiles and a greater area of the alternative to the south was Grade 3 agricultural land. The plot further north did not offer contiguous access from the A66.

### **15.3 Size**

15.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the Defra guidance and biodiversity tool so as to reach a conclusion of no likely significant effects. Heathland and acid grassland are high value habitats requiring higher ratio replacements. This area was partly calculated as necessary to replace these habitats. The biodiversity tool also allows lower value habitats to be replaced with higher value habitats or equivalent habitats not necessarily on a like for like basis. The total area taken, therefore, also accounts for the replacement of other semi-natural habitats across the scheme combined into a large habitat plot to maximise opportunities for protected

and priority species in the area. The size also relates to the requirement for a reptile receptor site for this scheme which is required to be outside of all working areas in order to prevent injury to reptiles and prevent translocating individual animals more than once. The size of the reptile receptor site was determined using professional judgement based on experience of previous schemes and best practice guidance. The final size of the plot is to be refined by further survey work at detailed design.

## **16 Plot 07-02-65**

### **16.1 Need for mitigation land**

16.1.1 Scheme 07 included loss of open mosaic habitat on previously developed land which is a priority habitat of high value for conservation.

### **16.2 How location was decided upon**

16.2.1 The location was based on open mosaic habitat being present already at this location with the opportunity to enhance existing habitat as well as extend the patch size through habitat creation. The location was also influenced by connecting scheme planting to an existing corridor of biodiversity value that had been highlighted by field surveys. The historic alignment of the disused Bowes Railway Line runs to the east of this plot and provides habitat for reptiles, terrestrial invertebrates and birds which will benefit from extending the resource. Alternatives were reviewed along the railway corridor, including an isolated patch of similar habitat to the east, but the chosen location was adjacent to where the impact occurred and offered contiguous access to the A66.

### **16.3 Size**

16.3.1 As explained during ISH3 and as set out in agenda item 3.2 to the ISH3 Post Hearing Submissions (Document Reference 7.30), the size of replacement habitat for the scheme was determined by baseline survey and assessment, and calculation of losses using the Defra guidance and biodiversity tool so as to reach a conclusion of no likely significant effects. Open mosaic habitat is a high value habitat requiring higher ratio replacement which could not be adequately replaced within the engineering boundary due to the specific conditions required to create and maintain this habitat (for example a nutrient poor substrate).