



A5 Western Transport Corridor (A5 WTC)

Appendix TNI – Theme Report: Priority Habitats

22 July 2016

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1. All measures described below will form part of the Works Information documentation supplied to construction contractors, and will be a contractually binding part of the Scheme delivery.
2. A detailed explanation of the engineering or other reasons why areas of Priority Habitat cannot be avoided by the Proposed Scheme is provided in B1_Appendix TNI_9782_61981_Priority Habitat Justification.

Bogs

3. The loss of bog habitat through direct landtake, and the potential degradation of bogs which are partly crossed by the scheme has been raised for locations at chainage 50500, 63200 to 63700 and 79750 (see C_Appendix TNI_9782_61981_Phase 1 Figures, Figures 11.17, 11.19 and 11.25).
4. There are approximately 700 hectares (ha) of bog habitat within the Omagh District (see Appendix TNI_Core Documents_9782_61981_Omagh Bio Audit¹), with the Scheme directly taking approximately 7ha, and potentially dewatering a further 7ha. This equates to approximately 1% of the bog habitat in the District.
5. The deposition area adjacent to the bog at 62400-62700 will be re-designed to remove deposition from the bog.
6. Measures to remove the potential for remnant bog habitat being dewatered by the scheme have been identified, and comprise engineering solutions such as the installation of an impermeable membrane or a 'dam' of impermeable material e.g. clay, along the edge of the remaining bog. Road drains will be at the edge of carriageway, raised above the level of the bog, and thus will not contribute to dewatering the bog. The Pre-Earthworks Drainage which will be at the bog level will not be connected to any watercourse, and will therefore not form a pathway for water to flow from the bog. These measures will protect the entirety of the remnant bog from dewatering, not just the 7ha within 200m of the road. Such measures will be detailed in the Works Information, placing contractual obligations on construction contractors, and will ensure that habitat is created so as to protect watercourses from potential runoff from the peat.
7. To compensate for the loss of bog habitat, TNI will discuss re-wetting remnant bog habitats, through measures such as blocking of drainage ditches, with the landowners of the remnant bogs.

¹ Please note that all reference documents will be publicly available on www.a5wtc.com from mid-August

8. Alternate engineering measures to cut and fill will be investigated by TNI and discussed with NIEA to determine whether suitable cost effective construction techniques (such as piled platforms) can be used to remove the need for excavation of peat.
9. A detailed Method Statement will be compiled in consultation with NIEA to control works during excavation on bog habitat areas, this will set out what measures are to be put in place to minimise impact on bog habitat as far as possible, what actions will be taken should an impermeable soil layer be encountered during excavation etc.
10. It is acknowledged that bog habitat cannot readily be recreated, therefore the use of excavated peat to form alternate wetland habitats within habitat creation areas will be investigated at detailed design stage, and will include assessment of the potential for creation of areas which will remain permanently wet, retaining the carbon sink function of the excavated peat.
11. These measures will safeguard the bog habitats at Chainage 63200-63700 and 79750.
12. In relation to the bog at Chainage 50500, we confirm that flood compensation at this location is very delicately balanced, and avoidance of the small area of bog habitat affected by the flood compensation is impracticable. Compensatory measures will be investigated, either through restoration of the acrotelm within the flood compensation area, or in as an alternative wetland habitat adjacent to the bog.
13. TNI will examine the potential for sensitive removal, temporary storage and careful replacement of the acrotelm from this portion of the bog, once the levels for the flood compensation areas have been created. If this is not possible, an area adjacent to this site will be used to create an alternate peatland habitat.
14. For the bog at 50500, suitable engineered measures will be used to ensure dewatering of the remnant bog does not occur, whichever method of compensation is selected.

Ancient Semi-Natural Woodland/Long Established Woodland

15. There is approximately 15ha of Ancient Semi-natural Woodland or Long Established Woodland in the Scheme corridor. The proposed landtake from these woodlands occurs at Mulvin Park wood and at the Routing Burn crossing. The total landtake within these woods for the specimen design is approximately 55% of the Mulvin Park wood (0.16ha) and 14% of the Routing Burn woodland (0.5ha), a total of 0.66ha, representing a loss of 4.4% of the local resource.

16. Through discussion with the landowner of Mulvin Park wood and with NIEA relating to both woodlands TNI has committed to reducing this loss as far as practicable.
17. Where the Proposed Scheme passes through Mulvin Park wood, localised steepening of the proposed cutting has enabled approximately 0.04ha of additional woodland to be retained (see D_Appendix TNI_9782_61981_Mulvin Park Wood).
18. Planting will be increased in this location to connect scheme planting to the remaining woodland. In addition, TNI has agreed to salvage turf or topsoil from within the area of woodland to be removed, and after storing this resource separately with use of best construction practice, the turves or soil will be used within the adjacent landscape planting to preserve the seedbank of the woodland ground flora. Further, alder will be added to the planting mix in the woodlands adjacent to the remaining wood to give rapid shade assisting in the development of a natural woodland ground flora.
19. At Routing Burn there are several impacts on the woodland, these comprise:
 - Direct landtake for the mainline construction
 - Direct landtake for construction of access tracks
 - Direct landtake for construction of drainage features
20. Further the current Proposed Scheme figures (see Appendix TNI_Core Documents_9782_61981_Env Mitigation Figures²) identify a deposition area to the west of the road which requires vesting of an entire field parcel, leading some to believe that woodland within this field would also be lost to the scheme. This woodland area (approximately 0.49ha) will not be impacted by the works, with clear demarcation of the wood during construction, and careful briefing of the contractor relating to preservation of the woodland (see D_Appendix TNI_9782_61981_Routing Burn Wood).
21. A rationalisation of the pond and access tracks has been undertaken to reduce loss of woodland at this location, allowing a reduction in habitat loss of 0.19ha to be identified (see D_Appendix TNI_9782_61981_Routing Burn Wood).
22. Salvage of turves or topsoil from the woodland will be undertaken in the same manner as for the Mulvin Park woodland.

Reedbed/Swamp

23. There is a potential for loss of reedbed habitat near New Buildings for the construction of drainage outfalls from the Proposed Scheme. This loss will be temporary in nature, as reedbed will be allowed to recolonise these areas.

² Please note that all reference documents will be publicly available on www.a5wtc.com from mid-August

24. Loss of swamp/marginal habitat adjacent to the bog at 62500 will be compensated through the creation of alternate habitat in the adjacent deposition area.

Ponds

25. A total of 8 waterbodies have been identified which will be lost to the Proposed Scheme landtake.
26. In addition to the 2 replacement ponds which are to be provided, every SuDS drainage pond within the scheme will have biodiversity improvements incorporated into their design, in accordance with CIRIA guidance (see Appendix TNI_Core Documents_9782_61981_CIRIA³). Finalisation of these designs to be progressed at the detail design stage, in consultation with NIEA. This provision will compensate for the loss of the ponds recorded within the scheme footprint.

Wet grassland

27. Approximately 8ha of wet grassland has been identified which will be lost to the Proposed Scheme. The specimen design for the Proposed Scheme includes planting of approximately 1.2ha tussock grassland (see C_Appendix TNI_9782_61981_Env Mitigation Figures, Figure 6.23), in addition, all watercourse diversions and areas where works require removal of bankside vegetation will have appropriate seeding. Both the tussock grassland and the watercourse bankside seeding will follow the mix described in C_Appendix TNI_9782_61981_Planting Tables, Table 6.11, with the exception of soft rush (see below).
28. Discussion with NIEA identified a desire to recreate wet grassland habitats within the vesting land of the Proposed Scheme. Therefore, it has been determined that a trial of wet grassland zones will be undertaken at each of the proposed SuDS ponds. This will be achieved by allowing water to pass through a primary treatment (grass swales etc.) before being allowed to flow over the grass surface into the pond, or alternatively, the water from the pond will be allowed to flow over grassed areas prior to outfalling to the receiving watercourse. This will provide periodic inundation of areas of grass to support plant species dependant on such an environment. Further, turves taken from existing wet grassland areas will be suitably stored and protected, then used in the wet zones adjacent to SUDs ponds. Also, suitable native wet grass plant species, of local origin where possible, will be introduced to the wet areas.
29. In addition, soft rush *Juncus effuses* will be removed from the proposed planting mix for all rush pasture/wet grassland areas, and that less invasive species of higher biodiversity value, e.g. compact rush and/or sharp-flowered

³ Please note that all reference documents will be publicly available on www.a5wtc.com from mid-August

rush, will be included in their place. Where possible these species will be of local origin.

B1_Appendix TNI_9782_61981_Priority Habitats Justification

Route Justification

30. The consideration of alternative alignments and development of the Preferred Option is summarised in the Environmental Statement Volume 1, Chapter 4 Alternatives.
31. The three stages to develop the Proposed Scheme have been;
 - a) An initial consideration of alternatives involved evaluation of a preliminary study area to identify potential broad corridors and establish a preferred corridor.
 - b) A second consideration of alternatives involved the identification, evaluation and comparison of route options within the preferred corridor. This culminated in the identification of a preferred route.
 - c) A third consideration of discrete lengths of alternative alignments involved refinement, and where appropriate, modification of the preferred route leading to the establishment of the alignment included within the Proposed Scheme. 31 refinements were considered of which 11 were adopted in the Proposed Scheme.
32. Detailed information relating to each of the stages is provided in the following project reports, which can be viewed at www.a5wtc.com:
 - Preliminary Options Report (2008);
 - Preferred Options Report, Mouchel (2009): and
 - Alternatives Discussion Paper, (718736-0000-R-013), Mouchel (2010)
 - Report on the Choice of Route for the A5WTC at Ballymagorry (718736-0800-R-029), Mouchel (2010)
33. At each stage the options were assessed against primary engineering, economic, environmental and traffic associated constraints and criteria.
34. The Proposed Route would be constructed mostly as a Category 6 Dual Carriageway in accordance with the Design Manual for Roads and Bridges (DMRB) Volume 6, Section 1, Part 1 TD 9/93 Highway Link Design standards and as detailed in Table below.
35. The route cannot be amended over short sections as there is the requirements to maintain the road alignment to meet current design standards for both Horizontal and Vertical Geometry.
36. The horizontal geometry of the Proposed Scheme was designed in accordance with DMRB Volume 6 TD 9/93 Highway Link Design. The geometry was predominantly dictated by the need to avoid constraints, such as existing properties and environmentally sensitive sites, while providing

accessibility to and connectivity between key locations along the Preferred Corridor.

37. The horizontal alignment was also affected by the requirements of the vertical geometry to minimise impact on existing properties and/or environmental constraints as well as a desire to minimise the land take as far as practicable.

Element	Carriageway Cross Section Width
Carriageways	2 x 7.3m
Hard Strips	4 x 1m
Central Reserve	2.5m (minimum)
Earthworks	Varies
Verges	2 x 2.5m (minimum)
Total Width	26.1m (minimum)

Table: Standard Dual Carriageway Dimensions

38. The vertical geometry considered a number of factors, including earthwork quantities, low points for drainage, appropriate height above flood levels, watercourse and side road locations. The rate of ascent and descent of the alignment was maintained within the allowable gradients dictated by TD 9/93. This standard also determined the allowable vertical curvature on sag and crest curves in the alignment.
39. The assessment process which placed emphasis on the constraints and impacts when considering the options. The Proposed Route also takes into consideration the importance of the European (Designated) Sites and Reports to inform Appropriate Assessments were prepared in accordance with the Habitats Regulation where necessary to demonstrate the level of impact on the sites.
40. Opportunities to avoid or minimise land-take to the priority habitats at each location highlighted were explored, but at these locations this was restricted by the requirement to avoid impacts on residential and commercial properties and engineering restrictions.
41. Constraints to realignment at each priority habitat include:
- 33000 – 33500** – Ancient Woodland Unit – Residential Properties along Derg Road (south), residential and agricultural properties on Urbalreagh Road (West and North). Gravel extraction site to the south.

48500 – Raised bog unit – residential properties immediately east and west along Rash Road. Properties and agricultural buildings along Drumlegeagh road (west and South) and Lisnagir Road (north)

50500 – Raised bog units - Properties and Agricultural buildings located to the east and west and along Gillygooley Road to the South.

62200 – 62400 and **63200 – 63700** – Raised bog units – Residential properties to the south along Tattykeel Road and north off Drumragh and Blackfort Road.

71700 – Ancient woodland Unit – Residential properties and agricultural buildings to the north along Greenmount and Killadroy Road and to the south along Routingburn, Springhill and Lisnarable Road.

79750 – Raised bog unit – Residential Properties along Glenhoy Road to the south and Rarogan Road to the northwest. Agricultural building off Errigal Road immediately to the north.