

A2AT Gate 2 Submission

Biodiversity Net Gain

Anglian Water & Affinity Water

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1. Introduction

Purpose of this Report

- 1.1 This Biodiversity Net Gain (BNG) report supports the gate two submission report to the Regulators' Alliance for Progressing Infrastructure Development (RAPID) for the Anglian Water to Affinity Water Transfer (A2AT) Strategic Regional Option (SRO).
- 1.2 DEFRA's 25-year Environment Plan seeks to '*embed an environmental net gain principle for development, including housing and infrastructure*'² leaving the environment in a measurably better state after development than beforehand. It is also government policy that planning decisions should seek to minimise impacts on, and provide net gains for, biodiversity³. The Environment Act 2021⁴ includes provisions to mandate the delivery of Biodiversity Net Gain in England. Secondary legislation, anticipated in November 2023, will require all relevant developments under the Town and Country Planning Act to achieve a minimum 10% net gain in biodiversity units relative to the site's baseline biodiversity value. Further secondary legislation mandating the approach for Development Consent Orders (DCOs), under the Planning Act 2008, is expected in 2025. Therefore, a BNG Assessment has been undertaken using DEFRA's Biodiversity Metric 3.1, in accordance with the metrics accompanying guidance⁵ and industry accepted best practice principles⁶.
- 1.3 The approach to the Biodiversity Net Gain Assessment has been informed by further guidance set out in both the All Company Working Group (ACWG) 'WRMP environmental assessment guidance and applicability with SROs' and RAPID (2022) 'Strategic regional water resource solutions guidance for gate two'.
- 1.4 ACWG guidance sets out how:
 - Biodiversity net gain or net loss (BNG/BNL) must be considered at both the option and programme level and that each option should look to maximise biodiversity net gains;
 - That a biodiversity baseline should be developed from spatial data sets derived from habitat inventories and assessed in line with metric guidance to allow BNG change to be calculated for each option;
 - That Priority Habitat Inventories and site designations including Sites of Special Scientific Interest (SSSI) and Ramsar sites should be used to identify areas with high biodiversity importance;
 - That metric calculations should assign biodiversity units to the pre-impact land use according to the habitats present in the project boundary and that post-impact land use (including agreed mitigation)

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

³ [National Planning Policy Framework - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/national-planning-policy-framework)

⁴ <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

⁵ <http://nepubprod.appspot.com/publication/5850908674228224>

⁶ <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

should be used to calculate the post-impact biodiversity score and calculate any percentage net gain or losses in biodiversity, and

- That individual schemes should seek to supplement the open-source habitat data used in the assessment with local datasets or Phase 1 / UKHab site data where available to increase the accuracy of the BNG calculation for each option.

1.5 RAPID gate two guidance sets out how:

- The gate two submission should be supported by an environmental appraisal that describes the connection to other assessments including BNG and that developments in England should seek to support the net gain actions in the Government's 25-year plan.

2. Methodology

Site Identification

- 2.1 For the purposes of the gate two assessment BNG was calculated for the A2AT scheme, in both the Easter and Western Route variants. To identify habitats potentially impacted by the development proposals each corridor was buffered by 500 m.

Habitat Identification/classification

- 2.2 At gate two biodiversity metric calculations have been undertaken using a tiered approach to habitat identification and classification. Open-source habitat data used in the gate two BNG Assessment include:
- Natural England's 'Living England'⁷ opensource habitat mapping data was used to map baseline habitat types; and
 - Where the 'Living England' data layer intersected Natural England's Priority Habitat Inventory layer⁸ Priority Habitat data was used to supersede the 'Living England' data.
- 2.3 Habitat data has then been converted into UK Habitat (UKHab) Classification habitat types by a qualified ecologist for use in Metric 3.1.
- 2.4 Habitat areas have been recorded and measured digitally using a Geographic Information System (GIS) and net gain calculations have been undertaken using the published Metric 3.1 algorithms.

Assigning Habitat Distinctiveness and Condition

- 2.5 At this high-level stage in the SRO process habitat condition has been assigned using distinctiveness as a proxy. Therefore, habitats with a 'Very High' distinctiveness have been assigned a 'Good' condition, habitats with a 'Medium' distinctiveness have been assigned a 'Moderate' condition and habitats with a 'Low' condition have been assigned a 'Poor' Condition. This precautionary approach weights the value of higher distinctiveness habitats to ensure potential impacts are not underestimated at this stage in the assessment in the absence of field data. This approach has been adopted for other high level assessments in the water sector and will be refined as future field surveys document habitat condition accurately to inform future stages in the development of this SRO.

Assigning Strategic Significance

- 2.6 At this high-level stage in the SRO process strategic significance has been assigned based on each habitat data intersecting sites with statutory or non-statutory nature conservation designations. All habitats located within statutory designated sites have been assigned a 'high' strategic significance.
- 2.7 All habitats located within priority habitat have been assigned a 'moderate' strategic significance.

⁷ <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::living-england-habitat-map-phase-4/explore>

⁸ <https://data.gov.uk/dataset/4b6ddab7-6c0f-4407-946e-d6499f19fcde/priority-habitat-inventory-england>

2.8 All remaining habitats have been assigned a 'low' strategic significance.

Assessment Assumptions and limitations

2.9 The following assumption was adopted during the gate one assessment, and this is carried over into the gate two assessment:

- No enhancement of habitats to uplift biodiversity post construction was considered. BNG units were assigned to the pre-construction land use according to the habitats presented in the project boundary. The post construction land use, including agreed mitigation, was used to calculate the post construction biodiversity score.

2.10 In a similar approach to the gate one assessments previously undertaken it is also assumed that SRO options will require further assessment as the design evolves. Due to the significant changes in option routing between gate one and gate two it is now anticipated that surveys to 'ground truth' the BNG assessment should be undertaken prior to any future investigations for this SRO for the BNG Assessment to be further refined and mitigation and/or enhancement opportunities fully developed.

3. Results

Summary of the outputs of the unmitigated BNG metric calculations

3.1 Table 1 presents the summary BNG metrics for both SRO options assessed under the 500m buffer.

Table 1: Summary of the outputs of the unmitigated BNG metric calculations

Option	On-site Baseline (habitat Units)	On-site post intervention (habitat units)	Total Net Unit Change (habitat units)	Total Percentage Change (%)
Eastern Corridor	19,369.29	13,477.31	-5,891.98	-30.42
Western Corridor	19,384.90	14,561.70	-4,823.20	-24.88

3.2 The Western Route would result in the loss of approximately 4823 BNG habitat units compared to an approximate 5892 habitat unit loss along the Eastern Route. The difference in unit loss is linked predominantly to the 'distinctiveness' of habitats present along each route with 8% of the Eastern Corridor, being composed of high and v. high distinctiveness habitats compared to only 6% of the Western Corridor.

3.3 Full calculations are presented in the Appendices.

4. Conclusions and Recommendations

Conclusions

- 4.1 Both SRO options are currently predicted to result in a biodiversity net loss of between -24.88% and -30.42%.

Recommendations

- 4.2 It is recommended that prior to future stages in the development of this SRO the Strategic Significance for each habitat type/parcel should be further refined using an 'opportunity mapping' approach. Using a combination of open-source habitat datasets alongside Local Planning Policy and any mapped Local Nature Recovery / Biodiversity Opportunity Areas.
- 4.3 It is also recommended that the presence of irreplaceable habitats, including ancient woodland, should also be refined, clearly identified to the project team and avoidance and retention strategies developed prior to future stages in the SROs development. Where impacts can be avoided and irreplaceable habitat can be retained within the scheme, options to use the scheme as a driver to enhance irreplaceable habitats as part of a wider program of mitigation should be explored.
- 4.4 Surveys to 'ground truth' the BNG assessment should be undertaken prior to future stages in the development of this SRO to allow for the BNG Assessment to be refined, habitat classifications to be refined, habitat conditions to be updated and for mitigation and/or enhancement opportunities fully developed.
- 4.5 It is also recommended that as the scheme design progresses through further stages of development the BNG calculation is refined through the incorporation of the schemes projected duration of works and any proposals to enhance or create habitats in advance of impacts occurring.
- 4.6 The final strategic significance scores for each site/habitat and strategies for mitigation and enhancement should be agreed following a series of stakeholder engagement sessions and presented prior to the future stages of this SRO.

Potential BNG Mitigation and Enhancement Options

- 4.7 In keeping with the mitigation hierarchy and the BNG best practice principles the scheme should seek to avoid impacts and retain and reinstate impacted habitats as much as possible. Furthermore, the scheme should also seek to enhance and create habitats where possible to deliver a net gain legacy for biodiversity locally. This could be achieved by identifying areas for habitat enhancement or creation within or nearby to the scheme with existing low baseline biodiversity values. Approaches could include arable reversion to species rich grassland, woodland planting and increased hedgerow planting to increase landscape connectivity.
- 4.8 Habitats identified within the gate two assessment suitable for enhancement include existing low distinctiveness habitats including arable land and medium/high distinctiveness habitats including 'other neutral grassland' and 'floodplain wetland mosaic'.
- 4.9 When identifying potential mitigation and enhancement opportunities the gate two assessment has used Natural England's Habitat Network Map⁹ to determine potential interventions that could either enhance

⁹ [Habitat Networks \(England\) - data.gov.uk](https://data.gov.uk/dataset/habitat-networks-england)

existing habitats near to the proposed development or create new habitats with the aim of increasing habitat connectivity.

- 4.10 As the development progresses further assessments will draw upon field-based habitat condition surveys, emerging Local Nature Recovery Strategies, Local Authorities Local Plans and Strategies/Action Plans and local stakeholder engagement.
- 4.11 Table 2 outlines the extent of habitats within 500m of the proposed development suitable for either enhancement or creation to increase connectivity within the habitat network. This high-level assessment indicates that significant opportunities exist within 500m of the proposed scheme particularly for habitat enhancement and network expansion.

Table 2: Extent of habitats within 500m of the proposed development suitable for either enhancement or creation to increase connectivity within the habitat network

Option	Habitat Network Class	Area (Ha)	% Cover of 500m Buffer
Western Corridor	Fragmentation Action Zone	1.05	0.02
	Network Enhancement Zone 1	194.25	3.79
	Network Enhancement Zone 2	314.91	6.14
	Network Expansion Zone	331.97	6.48
Eastern Corridor	Fragmentation Action Zone	0.64	0.01
	Network Enhancement Zone 1	249.71	4.87
	Network Enhancement Zone 2	545.63	10.65
	Network Expansion Zone	272.58	11.23

- 4.12 Any habitat enhancement or creation undertaken to facilitate the delivery of BNG will need to be secured for 30 years to enable the appropriate management, maintenance, and monitoring.

Appendix A Eastern Route Calculations

See separate spreadsheet

Appendix B Western Route Calculations

See separate spreadsheet

