Teddington Direct River Abstraction

Preliminary Environmental Information Report

Appendix 7.2 – Approach to Achieving Biodiversity Net Gain

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Appendix 7.2 – Approach to Achieving Biodiversity Net Gain

A.1 Introduction to Biodiversity Net Gain

A.1.1 Biodiversity Net Gain (BNG) is when development leaves a measurably positive impact ('net gain') on biodiversity, compared to what was there before the development[1]. BNG is achieved by first avoiding and reducing impacts on biodiversity and then enhancing or creating habitats.

A.1.2 The National Policy Statement (NPS) for Water Resources Infrastructure provides policies for developing Nationally Significant Infrastructure Projects (NSIPs) for water resources in England. These include achieving BNG, with Paragraph 4.3.21 stating that *"development should contribute to and enhance the natural environment by providing net gains for biodiversity"*.

A.1.3 The Teddington Direct River Abstraction (TDRA) Project (hereafter referred to as the Project) has committed to achieving 10% BNG. This net gain in biodiversity is measured as a Project-wide minimum 10% increase in 'habitat units', as measured by Defra's Biodiversity Metric calculation tool version 1.0.3.

A.1.4 To achieve this commitment, the objectives are for the Project's BNG to:

a. Provide year-round resources for species of local ecological value
b. Support Local Nature Recovery Strategies
c. Seek to be resilient to future climate risks
d. Benefit communities local to the Project

A.1.5 This document describes the proposed approach to achieve the commitment and objectives for the Project's BNG. At the time of production of this document, the government consultation on mandatory BNG requirements for NSIPs had been published, together with an implementation date of May 2026. When mandatory BNG requirements for NSIPs are known, the approach to achieve the Project's BNG commitment and objectives will be updated as required.

A.1.6 BNG will be the foundation to achieve wider Environmental Net Gains. The approach to Environmental Net Gains (ENG) for the Project is rooted in achieving a measurable improvement in biodiversity and environmental metrics, in order to leave the environment in a better state post-development.

[1] Information on Biodiversity Net Gain Available at https://www.gov.uk/government/collections/biodiversity-net-gain

A.2 Standards and guidance

A.2.1 Standards and guidance used to inform the assessment and design of BNG, and production of a Habitat Management and Monitoring Plan (HMMP), at this stage of the Project include:

a. CIEEM, IEMA, CIRIA, (2016). Biodiversity Net Gain: Good Practice Principles for Development, UK.

b. UKHab Ltd (2023). *UK Habitat Classification.* Version 2.0 [https://www.ukhab.org].

c. Natural England and the RSPB (2019). Climate Change Adaption Manual - Evidence to support nature conservation in a changing climate. 2nd Edition. Natural England, York, UK.

d. Defra (2024a). The Statutory Biodiversity Metric: User Guide. Version July 2024.

e. Defra (2024b). The Statutory Biodiversity Metric Calculation Tool. Version 1.0.3.

f. Defra (2024e). Creating a habitat management and monitoring plan for BNG. Last updated April 2024.

g. Defra (2024h). Statutory Biodiversity Metric Condition Assessments. Last updated February 2025.

h. Natural England (2008a). Technical Information Note TIN035. Soil sampling for habitat recreation and restoration.

i. Natural England (2008b). Technical Information Note TIN036. Soil and agri-environment schemes: interpretation of soil analysis.

j. Natural England (2011). Technical Information Note TIN088. Illustrated guide to managing neutral pasture for wildlife.

k. Natural England (2012). Technical Information Note TIN061. Sward enhancement: selection of suitable sites.

A.3 Approach to Biodiversity Net Gain

The baseline for Biodiversity Net Gain

A.3.1 The baseline for the Project's Biodiversity Metric calculation will use information from the Aquatic Ecology (PEI Report Chapter 6) and Terrestrial Ecology (PEI Report Chapter 7) for the Project.

A.3.2 This includes UK Habitat Classification (UKHab) surveys undertaken to identify habitat types of the baseline. These habitat types will be converted into the most appropriate area-based and linear (hedgerow and lines of trees) habitat types listed in the Biodiversity Metric calculation tool.. Watercourse habitat

types will be identified from Natural England's Priority River Habitat dataset (desk-based) and from information collected by UKHab/MoRPh[2] field surveys.

A.3.3 Habitat site survey information will be entered into a Geographical Information System (GIS) with Ordnance Survey MasterMap data. These data will be used to measure areas (hectares) and lengths (kilometres) of each habitat parcel for the b Biodiversity Metric calculation.

A.3.4 The centre line of hedgerows and lines of trees will be used to measure the length of such features for the Biodiversity Metric calculation (the footprint or canopy will not be recorded as an area). Adjacent area-based habitats will be measured up to the centre line to avoid double-counting of habitat types.

A.3.5 The centre of a watercourse will be used to measure its length. The width of a watercourse will be measured in hectares and recorded as 'watercourse footprint' in the area-based habitat module of the Biodiversity Metric calculation.

A.3.6 Arboricultural survey data will be used to record individual tree data for the Biodiversity Metric calculation. The 'tree helper' within the Biodiversity Metric calculation tool will be used to calculate the area of individual trees for the Biodiversity Metric calculation.

A.3.7 Habitat condition assessments for area-based habitats, individual trees and hedgerows will be undertaken in accordance with Defra's Biodiversity Metric Version 1.0.3 User Guide and 'Technical Annex 1' . These baseline condition assessments will also be used to identify opportunities to enhance the habitat type and/or its condition.

A.3.8 At the proposed River Thames intake and outfall location, upstream of Teddington Weir, a sub-reach has been identified within the freshwater Thames. A river condition assessment will be undertaken, with reference to best practice guidance (Gurnell *et. al.,* 2024.), to inform the watercourse module of the Biodiversity Metric calculation.

A.3.9 In anticipation of publication of the relevant Local Nature Recovery Strategies (LNRS) during 2025, all baseline habitats will be assigned 'low' strategic significance within the Biodiversity Metric calculation to adhere to the Metric Version 1.0.3. User Guide requirements when LNRS are published.

[2] Modular River Physical

An integrated approach for designing Biodiversity Net Gain

A.3.10 An integrated approach for designing BNG will be adopted and will include:

Terrestrial and aquatic ecology

A.3.11 BNG will, where practicable, be designed in ways that complement the Project's ecological mitigation and compensation measures (see Aquatic Ecology Chapter 6 and Terrestrial Ecology Chapter 7 of the PEI Report for the Project). The aim will be to enhance and create habitats for BNG in ways that provide year-round resources for species of local ecological value, such as species listed in LNRS and/or Local Biodiversity Action Plans.

A.3.12 Designing the enhancement and creation of habitats for BNG, and producing a HMMP for BNG habitats, will be undertaken based on sound ecological principles. This will include consideration of soil types, the size of habitat parcels to sustain ecological functionality, and the suitability of environmental conditions.

Landscape, townscape and visual amenity

A.3.13 The design of BNG will be integrated into the townscape and visual mitigation requirements for the Project (see PEI Report Chapter 9: Townscape and Visual) where practicable and appropriate. This would include species compositions for UKHab habitat types that score medium and above distinctiveness in the Biodiversity Metric calculation, as well as habitat management to meet criteria for a target of medium and/or good condition scores in accordance with the habitat condition assessments sheets (Defra, 2024h). If not sufficient to achieve a minimum 10% BNG, local off-site habitat enhancement and creation for BNG will be sought where appropriate and practicable to do so.

Climate resilience

A.3.14 Climate resilience measures will be integrated into the BNG design and the HMMP for BNG, where practicable.

Communities

A.3.15 Feedback from the Project's community engagement regarding amenity/recreational space will be considered for the BNG design, for example where the provision of BNG can increase public access to nature. This is with the aim of providing habitats for BNG, together with continued public use of amenity/recreational spaces during operation of the Project, where practicable. Initial outputs from the community engagement undertaken so far can be found in Chapter 15 of the PEI Report for the Project, with further outputs to be reported in the Environmental Statement for the Project.

A.3.16 The Project's outreach activities with local educational facilities will be supported as part of the Project's commitment to achieve BNG.

Local Nature Recovery Strategies

A.3.17 The relevant LNRS will be reviewed and considered, once published, with the aim for the Project's BNG to support its delivery where practicable and appropriate.

A.3.18 Whilst the LNRS is being finalised, collaboration with stakeholders will be sought to identify how the Project's BNG design could support the LNRS. In addition, the following documents will be consulted, as these contain priorities for protecting and enhancing biodiversity within the local planning authority areas that the Project lies within, and the documents are expected to feed into development of the LNRS:

a. Hounslow Biodiversity Action Plan (Hounslow Biodiversity Action Plan Partnership, 2011)

b. Kingston Biodiversity Action Plan (Kingston Biodiversity Partnership, 2023)

c. London Borough of Hounslow Nature Recovery Action Plan (LUC & London Borough of Hounslow, 2024))

d. London Borough of Richmond upon Thames Biodiversity Action Plan (Richmond Biodiversity Partnership, 2019)

A.3.19 In accordance with the Biodiversity Metric User Guide, post-development habitats will be assigned 'high' strategic significance in the Biodiversity Metric calculation when located within an area where a potential measure has been proposed by the LNRS and where the habitat intervention for BNG is consistent with the proposed potential measure. All other post-development habitats will be assigned 'low' strategic significance.

Stakeholder engagement

A.3.20 The Local Planning Authorities of the London Borough of Hounslow, the London Borough of Richmond upon Thames and the Royal Borough of Kingston upon Thames, have and will continue to be engaged and consulted on the assessment and design of BNG.

A.3.21 Stakeholders, such as Natural England and Defra, will continue to be engaged and consulted on the assessment and design of BNG as required throughout the Development Consent Order (DCO) process.

Biodiversity Metric calculations

A.3.22 Habitats created and/or enhanced for the Project's mitigation and/or compensation requirements will count towards the Project's BNG, up to a maximum of 'no net loss' of habitat units.

A.3.23 Additional habitat enhancement and creation, aimed at achieving the 10% BNG commitment, will be subject to a HMMP and secured for at least 30 years.

A.3.24 The Project will seek to achieve 'no net loss' of habitat units per Local Planning Authority that the Project lies within, with the 10% increase in 'habitat units' for

BNG to be strategically located where practicable, for example to support the LNRS.

A.3.25 The 'advance' and 'delay' functions in the Biodiversity Metric calculation are temporal risk multipliers that account for the time between the loss of a habitat parcel for development, and the start of habitat creation for BNG. The 'advance' function is the number of years that new habitat is created in advance of habitat clearance. The 'delay' function is the number of years that new habitat is created after habitat clearance. These functions will be used, where appropriate, based on the construction programme in the Project's EIA.

Habitat Management and Monitoring Plan

A.3.26 The HMMP, where appropriate and required, will commence at the end of construction for on-site BNG, and after the initial habitat enhancement/creation works for off-site BNG. The HMMP will be produced in a format considered appropriate for the Project and may draw on examples such as the Natural England HMMP template (Defra, 2024e).

A.4 Integrating climate resilience

A.4.1 The aims of integrating climate resilience with BNG will be to buffer the severity of climate change impacts so BNG habitats can thrive, and to include resilience measures for BNG habitats to help strengthen resilience of the local area to the impacts of climate change.

A.4.2 A climate baseline and projection for the Project area has been described in the Climate Change chapter (see Climate Change, Chapter 18 Section 18.7 of the PEI Report for the Project).

A.4.3 In summary, for the 25km grid square within which the Project is located (centred on E 512500, N 162500), climate change is expected to increase temperatures year-round, with a greater frequency of hotter, drier summers and warmer, wetter, winters. Climate change is also expected to lead to sea level rise, which could affect tide levels and associated flood risk within the tidal section of the River Thames as far west as Teddington Weir.

A.4.4 The climate data set out within the Climate Change chapter (see Climate Change, Chapter 18 Section 18.7 of the PEI Report for the Project) will be used to assess climate risks to proposed BNG habitats. This is with the aim to identify resilience measures to buffer the severity of climate change impacts upon BNG habitats, for these habitats to establish and thrive.

A.4.5 Climate resilience measures for habitats being enhanced and created for BNG will be included in the design of BNG, and in the HMMP

A.4.6 Whilst a climate change resilience assessment will be detailed within the Climate Change chapter of the ES, integration of climate resilience measures for BNG habitats is part of the BNG design and HMMP.

A.4.7 Potential climate risks to BNG habitats have been identified and are summarised in In-Combination Climate Impacts, Appendix 18.1 of the PEI Report for the Project.

A.4.8 Risks that habitats being enhanced and created for BNG could pose to Project infrastructure under climate change will also be assessed, in order to identify any resilience measures to mitigate such risks.

Securing BNG for at least 30 years

A.4.9 Habitats being enhanced and created as mitigation or compensation for the Project will count in the Biodiversity Metric up to 'no net loss' of habitat units. Additional habitat enhancement and creation to achieve the 10% will be secured for at least 30 years.

A.5 Biodiversity Net Gain as a foundation for Environmental Net Gain

A.5.1 Defra has defined Environmental Net Gain (ENG) as, "Achieving Environmental Net Gain means achieving Biodiversity Net Gain first, and going further to achieve increases in the capacity of affected natural capital to deliver ecosystem services and make a scheme's wider impacts on natural capital positive." (Defra, 2018).

A.5.2 The NPS for Water Resources Infrastructure sets out the policies for developing water resources infrastructure in England. These include for ENG, with Paragraph 3.4.1 stating that "*projects should consider and seek to incorporate improvements in natural capital, ecosystem services and the benefits they deliver when planning how to deliver Biodiversity Net Gain*". These policies are meant to ensure that development aims to leave the natural environment in a measurably better state than beforehand.

A.5.3 ENG is an approach that aims to leave the environment in a better state than it was before the development. The NPS provides examples of Environmental Net Gains that are relevant to the local area and to national policy priorities, such as reductions in greenhouse gas emissions, reduced flood risk, improvements to air or water quality, or increased access to natural greenspace.

A.5.4 The approach to ENG for the Project is rooted in achieving a measurable improvement in biodiversity and environmental metrics, in order to leave the environment in a better state post-development. ENG builds upon the integrated design approach for BNG and will use available guidance and tools, including Defra's guidance on Enabling a Natural Capital Approach (Defra, 2025), to measure the environmental benefits delivered by the Project. An ENG statement will be produced demonstrating how opportunities for delivering Environmental Net Gains have been considered, and where appropriate, incorporated into the design of the Project.

A.5.5 The Project will, where practicable, look to incorporate sustainable landscape practices, supporting ecosystem services such as carbon sequestration and

natural hazard regulation. The design will also aim to respect and enhance the local landscape and cultural heritage, with the aim for the Project to provide long-term environmental benefits while meeting the broader sustainability goals set out in the Project's Design Principles (see Chapter 1, Section 1.2 of the PEI Report for the Project).

A.6 References

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