GREATER MANCHESTER

DOING THINGS DIFFERENTLY FOR THE ENVIRONMENT

Testing the Biodiversity Net Gain Metric

Greater Manchester Case Studies

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Introduction

Biodiversity Net Gain is an approach to development that aims to leave nature in a measurably better state than beforehand. This is measured using Defra's biodiversity metric. The system of 'biodiversity units' used to measure biodiversity before and after site development is a quantitative assessment of habitats, demonstrating the change in biodiversity in a robust, consistent and transparent way.

In 2019, the Greater Manchester Natural Capital Group worked with developers to test the metric retrospectively on a number of development schemes to begin to understand the implications for development and the natural environment in the city region. This leaflet provides a summary of the project findings.

The four case studies below show that it is advisable to consider Biodiversity Net Gain from the outset and incorporate it into the design of a scheme to understand the viability of opportunities for its delivery.

More detailed case studies will be developed based on current and future planning applications and decisions, where Biodiversity Net Gain has been considered throughout the development process.

The following case studies were initial pilots undertaken in 2018-19, and were examples lead and submitted by developers. The Local Planning Authorities do not endorse the findings of this work but are happy for this work to be shared.

Case Study 1

Burgess Farm, Salford (Peel L&P)

Burgess Farm is a development of approximately 350 family homes on an 18-ha site of private grazing land in the urban fringe between Worsley, Walkden and Tyldesley in Salford. The development proposals included two nature parks as mitigation on adjacent land for impacts on great crested newt and loss of terrestrial habitat.

The housing development itself resulted in the loss of a mixture of relatively low-value habitats including rough grassland and marshy areas. The retrospective assessment, using the Defra Metric, looked at how these losses could have been avoided, mitigated, or as a last resort, compensated for.

As part of the retrospective assessment, many different landscape scenarios were explored, such as the type and extent of habitats, wildflower meadows, and additional green infrastructure, such as green roofs, to help contribute towards Biodiversity Net Gain.

It was concluded that, in theory, these scenarios could provide some increases in biodiversity, but not to the extent of achieving a net gain for the housing development on its own.

Furthermore, the alterations were not deemed practical at this site. For example, to achieve net gain, all amenity grassland would need to be managed as wildflower meadow, whereas residents desire recreational areas in family housing developments.

The retrospective analysis showed that it would not have been possible to achieve Biodiversity Net Gain within the housing area alone, with the loss of 6.4 biodiversity units from a total of 26.2 units. However, by counting the biodiversity value of the two nature parks, a net gain of 6.1 biodiversity units was achieved showing a 10% net gain. However, it is not typical to see residential development schemes that include nature parks like those provided at Burgess Farm, which were provided as mitigation for a particular ecological impact; the provision of much less green space is usually the norm.

Figure 1 – Plan of Indicative Development Layout for Burgess Farm.

Figure 2 – Burgess Farm Site Pre-development.

Figure 3 – Burgess Farm Housing Development.

Case Study 2

HIMOR Conceptual Masterplan for Carrington 2019 (Tyler Grange)

Carrington is a large, mixed green and brownfield site in Trafford. It includes a former petrochemicals site, arable farmland, woodland and scrub habitat. Three non-statutory designated sites, Shell Pools Site of Biological Importance (SBI), Birch Moss Covert SBI and Broad Oak Wood SBI also lie within the boundary of the site. The site proposals include both employment and residential developments, as well as new link roads and associated infrastructure and open space. The development will mostly impact low-value habitats such as developed land and arable fields but impacts to priority habitat and woodland of higher value are also likely.

The biodiversity assessment was carried out by Tyler Grange, who analysed the baseline in relation to a proposed future development of the 544-ha site, owned by HIMOR Ltd. Following Defra guidance, irreplaceable habitats within the red-line boundary were identified and excluded from biodiversity unit calculations.

The assessment found that it would likely be possible to improve the condition of retained priority habitats through future planning obligations and it was agreed that all priority habitats will be replaced with the same habitat type or like for like.

These proposals led to an overall gain in biodiversity units of 48.7 to a total of 1635.8 units, showing a post-development marginal increase of 3%. The assessment found that a further increase of 30 biodiversity units would be needed to achieve a 10% gain, in line with proposals in the Environment Bill.

The overall project outcome was calculated using conservative assumptions as the assessment was undertaken in the early stages of the development process and the development plan may be subject to change, and therefore may not accurately reflect the final Biodiversity Net Gain result. Undertaking the assessment at this early stage allowed the design to be informed by results and lead to an improved outcome for biodiversity.

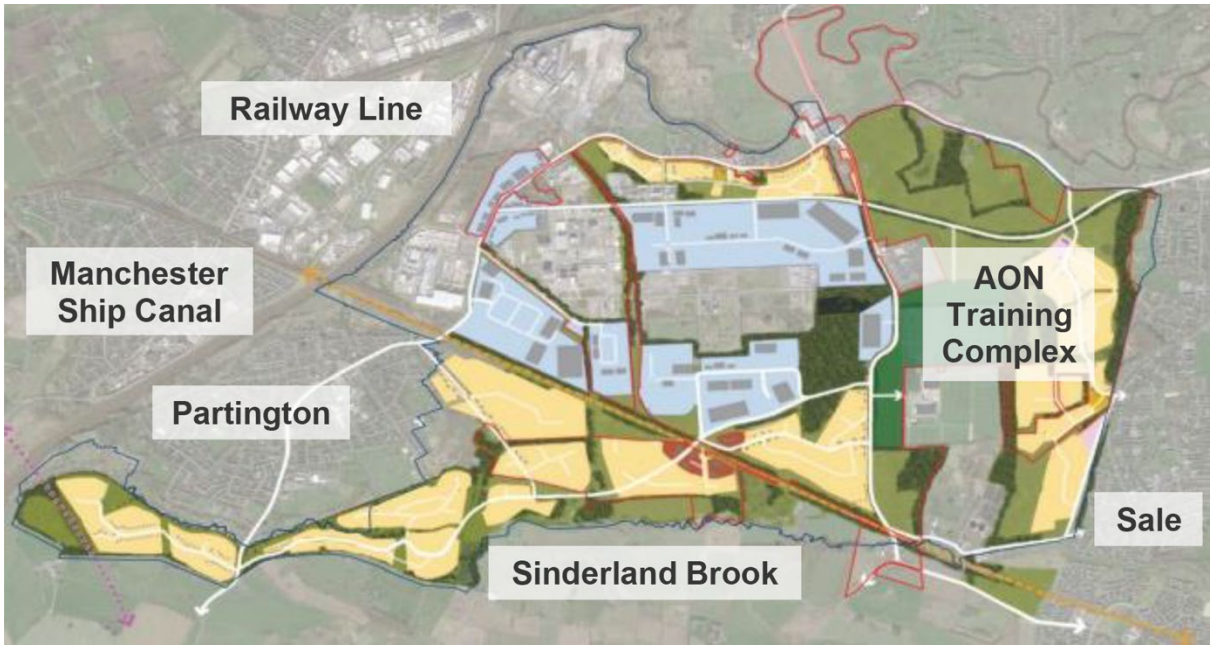

Figure 4 – Plan of Carrington Housing Development.

Case Study 3

Counthill School Development, Oldham: (Redrow)

Counthill is a development of 56 new homes on a 3.4-ha former school, brownfield site, on the north-eastern fringe of Oldham. The development is due to be completed by November 2020. The proposals also include gardens, roads, a balancing pond, public open spaces and play areas.

The retrospective assessment looked at how Biodiversity Net Gain could have been achieved within this development to help the business build its approach to enhancing nature. It highlighted opportunities for improvements that could be achieved on site. These included the enhancement of existing woodland, the management of new woodland, changes to the new balancing pond to better support wildlife, additional hedge boundaries to increase connectivity for wildlife, and more native species within the planting scheme.

The development resulted in the loss of mainly low-value habitats such as modified grassland, introduced shrub and mixed scrub, but there was broadleaved woodland on site, which is a habitat of medium value. The baseline assessment calculated a score of 8.3 biodiversity units on site. The development proposed to keep 1.4 biodiversity units by retaining a proportion of the woodland and create a further 4.84 biodiversity units comprising a mixture of low, medium, and high-value habitats.

Overall, this amounted to a loss of 2 biodiversity units for the project. However, if all the woodland had been retained and enhanced, rather than removing some and then creating new woodland, the project would have achieved a 3.6-unit gain.

Since this assessment, Redrow has been training its teams in Biodiversity Net Gain and is working alongside The Wildlife Trusts to develop a strategy that includes net gain as well as wider issues such as connectivity, locally important species and habitats, and other factors such as local people's connection with nature.

Figure 5 - Aerial View of the Counthill School Development Site.

Case Study 4

Stockport Interchange (Stockport Council)

This scheme in the centre of Stockport involves the demolition, construction and operation of a new covered bus interchange, a multi-storey residential block, external green areas, a formal public park, commercial units/offices and the construction of a pedestrian link bridge from the interchange to the rail station.

From the outset, the Council aspired to achieve a net gain for biodiversity through the landscape design process. As an urban brownfield site, existing biodiversity was limited. The development resulted in the loss of mainly low-value habitats such as amenity grassland and street trees, but also some bramble scrub, which is a habitat of medium value. The future use of the site means that opportunities to increase biodiversity are also limited.

Biodiversity will be enhanced on the site by creating habitats such as a sedum green roof, the planting of a mix of broadleaved and coniferous tree species, and shrubs and perennials contributed to the quantitative net gain of biodiversity units. The baseline assessment showed a loss of 1.28 biodiversity units for the site and a post development gain through created habitat of 1.41 biodiversity units. However, although the project will achieve a quantitative gain of 10%, overall Biodiversity Net Gain was not initially possible as the existing scrub habitat was not replaced like-for-like or better. The delivery of like-for-likes or better habitats for wildlife is central to the UK Good Practice Principles.

To address this, the area of scrub planting along the riverfront is proposed to be changed within the landscape plan from a non-native species to a native species mix, meeting the principle of like for like or better. As a result, with a minor change to the landscape plan a 10% net gain will be achieved on this site.

Figure 6 - Conceptual Image of Stockport Interchange.

Lessons Learned

All projects concluded that Biodiversity Net Gain would be more readily achievable if assessed and considered at the outset and within the design of the scheme rather than looking at it retrospectively. This helps to inform the avoidance of impacts on important ecological features as well as identifying areas that could be retained and enhanced. It also provides an early understanding of the area and habitat type of any compensation that would be required. Clear communications and collaborative working between the ecologists, landscape architects and planners and the rest of the design team is essential.

Engaging with an ecological consultant at an early stage can allow developers to provide realistic advice on the delivery of Biodiversity Net Gain for a site, balancing an understanding of the commercial aspects of development against other site constraints. Ecologists will be able to undertake provisional calculations and assess whether on-site Biodiversity Net Gain will be possible based on initial designs and, if not, to quantify the potential cost implications of providing off-site compensation to inform decision-making processes.

Delivering green infrastructure and building natural capital

Areas of habitat can support better air and water quality, soil stability, flood management and adaptation to climate change. The benefits provided by local natural capital are vital for local communities. Delivering Biodiversity Net Gain can build natural capital – the stocks and benefits we get from the natural environment. Biodiversity Net Gain should be targeted so that it meets existing requirements for wildlife and contributes to local green infrastructure, providing the benefits most needed by the local community. This could include ensuring the areas delivering Biodiversity Net Gain are also providing areas for flood water storage or accessible green space as well as capturing carbon and decreasing fire risk.

Data and information

The Biodiversity Net Gain process sits very well within the existing requirements for ecological assessments of development sites. However, some issues were emphasised concerning the information provided to calculate Biodiversity Net Gain; these included the lack of a management plan, condition assessments not being undertaken during site surveys, masterplans of a site being too broad with a lack of detailed habitat information, no information concerning invasive species, uncertainty between classifications of habitat types by different organisations and initial mapping being carried out by hand rather than digitally. These issues and inconsistencies could easily have been prevented had the developer considered Biodiversity Net Gain from the outset, thus securing the correct information in the necessary format.

Combining Biodiversity Net Gain within any ecological assessment, such as an Environmental Impact Assessment, allows Biodiversity Net Gain to be assessed with very little extra effort. The survey work and data required for Biodiversity Net Gain is very similar to the information required for traditional ecological assessments. There is no need for additional survey visits as the habitat data and condition assessments can be gathered as part of the existing survey requirements.

Following the mitigation hierarchy

Enhancement of a habitat is preferable to creation as this means the existing habitats and the associated biodiversity units are not lost. Any enhancement adds to these existing biodiversity units, always creating a gain in biodiversity. This aspect of the metric reinforces the mitigation hierarchy, the principles of avoiding, then minimising and finally compensation for impacts on biodiversity. However, depending on the development scenario, habitat creation may be preferable or even necessary.

Optimising scheme design

It was found that a number of different opportunities for enhancement and creation for Biodiversity Net Gain could have been included in each of the developments, although not all were practical. These comprised sustainable urban drainage (SuDs) for wildlife, green infrastructure, such as green roofs and walls, incorporating bird-bricks into house design, providing enhancement of existing biodiversity habitats, developing alternative pond designs, improving connectivity for wildlife by planting hedges rather than erecting fences, the planting of native scrub species for wildlife instead of ornamental shrubs and better definition of management for wildlife through a long-term plan.

Habitat enhancement and creation

The area of habitat enhancement or creation required is reduced where the proposals deliver benefits for strategic spatial priorities. Advance off-sets or habitat banks could also reduce the required area of habitat enhancement or creation by removing risks to delivery of the habitats taken into account within the metric. Enhancements could include the provision of protected areas, tree planting, creation of hedge-banks or dry-stone walls, installation of artificial roosting and nesting sites, planting to support pollinators, birds, bats or other species, habitat management to support biodiversity and targeted species, creation of reptile hibernacula or basking banks and the creation of wildflower areas. Requirements for protected species can also be taken into account within the Biodiversity Net Gain assessment.

Woodlands and street trees

Due to the time taken for trees to mature, the biodiversity units gained from them are lower than from other habitat types. This may disincentivise tree planting from a developer perspective and will encourage other habitat choices with lower risk scores. However, the like-for-like principle (replacing habitats that are lost with the same type of habitat) means that, in practice, loss of trees will be compensated for by tree planting.

Site size

The assessment is not a significant exercise but will be an additional burden for smaller developments. It is expected that larger sites will tend to have more scope to deliver Biodiversity Net Gain due to the larger area involved, whereas smaller, urban sites would need to be creative with green infrastructure on-site. However, as long as the mitigation hierarchy is followed, off-site compensation could be more viable for smaller sites.

The Government has indicated further work is required to develop suitable approaches for small developments

Clarity of requirements

The current lack of any legal requirement for net gain means that the application of the principle has been disparate across the country, resulting in an uneven playing field for developers. The inclusion of a Biodiversity Net Gain legal requirement in the Environment Bill will give greater clarity to developers, planning practitioners and decision makers on what is required. Equally, the development of the Defra Metric 2.0 is a standard assessment method for use throughout England. This provides further clarity and certainty.

The Defra Metric

The use of the Defra 2.0 Metric for these projects the tool. As a result of these projects, these changes highlighted the need to include urban habitats such as gardens, street trees, green walls and roofs have now been incorporated into the latest version of the Defra Metric.