

Sustainability Best Practice Case Study

Delivering net gain outcomes for biodiversity



The Network Rail Thameslink Programme was the first Network Rail Infrastructure Project to achieve 'net gain' outcomes for biodiversity. Its approach to deliver biodiversity net gain was named as a demonstration project by Defra and received wide acclaim, including from the Institute of Environmental Management and Assessment and from Natural England. The Thameslink Programme's approach to deliver biodiversity net gain has been rolled out to Network Rail Infrastructure Projects.

This case study sets out how the Thameslink Programme achieved biodiversity net gain through the application of good practice.

A sustainable Thameslink Programme

The Network Rail (NR) Thameslink Programme (TLP) will transform travel north to south through London. When Thameslink completes in 2018, journeys and connections will be improved giving customers better travel options to more destinations than ever before. Its modern track and trains will make journeys more reliable.

Sustainability is at the heart of the TLP's vision, which is to **'deliver transport benefits to budget that represents value for money and creates an overall positive impact on the community and the environment'**. To do this the TLP aimed to ensure that not only does it achieve the highest standards in sustainability, but it upholds this principle on all fronts.

As part of its sustainability drive, the TLP committed to **"enhance our habitat footprint to achieve a net biodiversity gain via the mitigation hierarchy"**. This recognised the importance of habitats along the railway corridor for nature conservation and was founded on the TLP's commitment to create an overall positive effect on the environment.

The TLP recognised that its works require clearing vegetation along its lineside to accommodate the TLP infrastructure, as part of the overall programme to deliver longer more frequent trains. The TLP is governed by planning and wildlife legislation as part of its Transport and Works Act Order, and had been successfully delivering on its legal requirements regarding biodiversity since works commenced in 2006. However, in 2012 the TLP recognised that to deliver its sustainable development vision for biodiversity, going above legal compliance was the right thing to do. The TLP was also aware that the current legal system was not delivering 'no net loss' of biodiversity, let alone a net gain. So in 2012, the TLP committed to deliver 'no net loss' of biodiversity and subsequently revised this to 'net gain' in 2014 when it published its policy and procedure on Delivering Biodiversity Benefits. The policy and procedure were cascaded through its supply chain, and accompanied by a series of training events for both TLP staff and TLP's supply chain.

The TLP commitment to biodiversity supports the NR Sustainable Development Strategy (2013-2024) and the NR Infrastructure Projects (IP) Control period 5 business plan objectives and Sustainability Charter.

Biodiversity net gain

Biodiversity refers to all forms of life including wildlife and habitat. Biodiversity on railway land can be important for the local environment, particularly in urban locations where natural habitats are limited and fragmented.

Simply put, biodiversity net gain means that an infrastructure project delivers benefits for biodiversity. Key aspects of delivering biodiversity net gain are:

- ✓ **The mitigation hierarchy** – following the mitigation hierarchy to first avoid losses of biodiversity, then minimise the losses and lastly compensate for any unavoidable losses. Only as a last resort, compensation can be on-site or through offsetting where losses of biodiversity on-site are replaced by gains elsewhere.
- ✓ **Metrics** – using metrics to quantify biodiversity before a project starts (the baseline) in order to measure change in biodiversity on completion of the project. Metrics provide a proxy for biodiversity. Their use can support decision-making when combined with qualitative assessments that capture the wider aspects of biodiversity such as connectivity and ecological functionality.
- ✓ **Good practice** – there are a series of international standards and principles on good practice relating to biodiversity net gain, and on use of biodiversity offsetting. It is essential that infrastructure projects such as the TLP rigorously apply good practice and are transparent in how they do so, throughout the project (i.e. not just at the end).

The Thameslink Programme's commitment to good practice

The TLP continuously strove to apply good practice to deliver biodiversity net gain. However, when the TLP began its net gain work, there were no UK standards or guidelines on good practice regarding biodiversity net gain so it adopted international good practice produced by the Business and Biodiversity Offset Programme (BBOP). It also adopted the biodiversity unit metric issued by the Department of Environment, Food and Rural Affairs (Defra), as well as the biodiversity offsetting framework that was launched by Defra as part of a government biodiversity offsetting pilot in 2012. This approach complemented the government's Natural Environment White Paper which defined biodiversity offsetting as "conservation activities designed to deliver biodiversity benefits in compensation for losses in a measureable way".

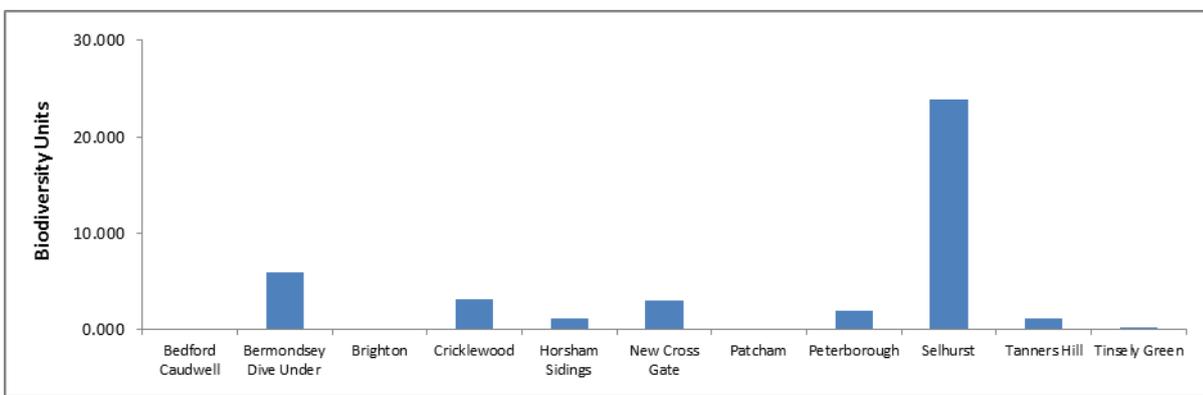
How Thameslink achieved biodiversity net gain

Quantifying biodiversity losses and gains

The TLP undertook a programme-wide study to quantify its biodiversity losses and gains through use of the metric issued by Defra. This metric measures biodiversity in 'biodiversity units' as a proxy indicator of biodiversity, and comprises the distinctiveness, condition and area of a habitat. This showed that, after following legal compliance, the TLP resulted in the unavoidable loss of 42 biodiversity units.

The TLP also re-assessed its correct application of the biodiversity mitigation hierarchy of avoid, mitigate and then compensate biodiversity loss. During this study it became evident that to compensate for the 42 units of biodiversity loss on TLP, it would not be possible to enhance biodiversity on-site along NR's lineside because of space constraints and the strict planting requirements required to meet NR's safety and operational performance standards.

From using the biodiversity unit metric, the TLP was able to measure delivery of its biodiversity net gain target in a robust and transparent way. It also enabled a better understanding (than traditional ecological assessments) of how much biodiversity was lost, where the loss occurred and how much biodiversity was needed to achieve net gain.



Using biodiversity metrics appropriately

The TLP recognised that biodiversity cannot be reduced to a single number, and that the biodiversity unit metric was a proxy for key aspects of its habitats on site, but there were ecological aspects that the metric was not designed to capture. These included ecological connectivity and functionality, as well as presence (or likely presence) of wildlife. So the TLP used the biodiversity unit metric in combination with qualitative ecological assessments – in practice this meant that it used the biodiversity unit metric to help identify how much biodiversity was needed to achieve net gain, and the qualitative assessments to identify the wider ecological aspects that its net gain was to deliver, such as connectivity and functionality. The aim was to avoid a ‘numbers-focused’ approach where losses of biodiversity are simply outweighed by gains, but rather an approach where delivery of biodiversity net gain is based on a combination of quantitative and qualitative information.

Engaging senior managers

The biodiversity unit metric enabled the TLP Environmental Manager to communicate and engage the TLP leadership team on biodiversity risks and opportunities to the business, securing their support for the TLP to deliver biodiversity net gain.

Training TLP staff and its supply chain

The TLP cascaded its policy and procedure on Delivering Biodiversity Benefits to its staff and supply chain. It did so with accompanying training, which involved training for TLP’s environment and sustainability team to be able to quality assure biodiversity unit metrics received by its consultants. This equipped the team with the skills and knowledge to actively engage themselves, and their supply chain, in the delivery of biodiversity net gain.

Engaging local, grassroots wildlife groups

The TLP required biodiversity offsetting because compensating for its unavoidable loss of 42 biodiversity units on railway land was not possible due to space and operational constraints. The TLP recognised the challenges with offsetting losses of biodiversity, so sought to rigorously apply good practice. A key tenet of TLP’s approach was to engage local, grassroots wildlife groups for these groups to propose, design and deliver TLP’s biodiversity offsets. This was on the basis that these groups, who are actively working in biodiversity conservation, know where the real opportunities are for TLP’s biodiversity net gain to generate genuine and long-term benefits.

The TLP partnered with the London Wildlife Trust to achieve biodiversity net gain at key nature sites across London; these were Streatham Common, Brockwell Park and Ten Acre Wood (see below). The offsets were officially launched in 2013 by the Secretary of State for Environment and were named by Defra as a demonstration project for NR TLP’s application of the Defra biodiversity offset framework.

Wildlife groups as biodiversity offset partners had many benefits. For the TLP these included: channelling funds directly into previously underfunded conservation projects; developing partnerships with local stakeholders; engaging the group’s networks to help deliver net gain (e.g. by engaging volunteers) and working with an experienced delivery partner thus reducing delivery risk and cost.

Achieving biodiversity net gain

The TLP’s biodiversity offsets at Streatham Common, Brockwell Park and Ten Acre Wood generated a total of 72 biodiversity units. As the TLP resulted in a loss of 42 biodiversity units, the TLP achieved a net gain of 30 biodiversity units. The offsets were:

Streatham Common:

Streatham Common, located in the south of the London Borough of Lambeth, is a typical urban common that has been managed as a municipal open space since it was protected from development. Whilst it retains features from more formal management of the past, less intensive regimes over recent decades on parts of the Common have led to its biodiversity interest increasing. The Common at 26.12 hectares has been designated a Site of Borough Importance for Nature Conservation, and awarded a level of protection within Lambeth Council's Unitary Development Plan. The upper eastern elements were designated as a statutory Local Nature Reserve (LNR), primarily for the acid grassland and woodland characteristics – a testimony to both its underlying geology (river gravels) and recent under-management. The whole Common is also designated as Metropolitan Open Land. Most of the Common outside the LNR is typically urban amenity grassland of low species diversity, dotted with mature trees, principally London plane, ash and common lime. The TLP biodiversity offset involved increasing species diversity by planting trees and shrubs to complement the existing tree line and to create clusters of more wooded areas around the common. It also involved enhancing diversity in grassland areas through plug-planting and stripping and seeding with more diverse neutral grassland mix.

Brockwell Park:

Brockwell Park is a 50.8 hectare park located between Brixton, Herne Hill and Tulse Hill. Brockwell Park provides a range of community resources including a café and community greenhouses, as well as football pitches, tennis courts, lawns for informal recreation. It also hosts events including the Lambeth Country Show. The Park is a Site of Borough (Grade I) Importance for Nature Conservation; this reflects its large size (for an inner London borough), and habitats such as grassland, woodland, scrub, and wetland. The wetland areas contain one of the few open sections of the River Effra (one of London's 'lost rivers'); the rest of the water course has largely been channelled underground. Most of the woodland forms small patches around the perimeter, although there are many mature trees including oak and silver birch. The Park provides a popular wildlife resource for local communities within an area of dense residential development. The TLP biodiversity offset involved increasing the connectivity and diversity of habitats by tree and shrub planting along the Park borders, and creating a woodland edge habitat in pockets around the Park.

Ten Acre Wood:

Ten Acre Wood is part of a much larger Site of Metropolitan Importance (SMI) for Nature Conservation - Site M51 Yeading Brook Fields - along the Yeading valley. The total SMI site covers 170 hectares and lies mostly in Hillingdon, with around 30 hectares in the London Borough of Ealing. The main proportion of the site is grassland with various notable species including sneezewort, great burnet and pepper-saxifrage. The grassland is divided by hedgerows and a number of larger blocks of woodland. There are also meadows, marshes and ponds. The TLP biodiversity offset involved a series of enhancement activities including: managing shrub layers of glades to encourage woodland regeneration; selective thinning to encourage a diversity of ground flora to re-establish; removing non-native trees to prevent the spread of invasive trees and to create openings within the canopy; and coppicing within hazel woodland.

Developing a Biodiversity Offset Management Plan

The TLP worked with the London Wildlife Trust to produce a Biodiversity Offset Management Plan (BOMP) that covered all three offsets. The BOMP set out the roles and responsibilities of each party, key works to be undertaken at each offset, and the long-term management of the offsets.

Undertaking lessons learnt

Throughout its delivery of biodiversity net gain, the TLP reviewed its lessons learnt to share these with industry, government and the NGO sector. The TLP also undertook a comprehensive 'lessons learnt' review, which was documented within an internal report for NR. From this review, the key lessons learnt were:

Delivery of net gain biodiversity target on major infrastructure projects is possible, however clear targets need to be agreed early within the programme and senior leaders need to be engaged to provide the support required to achieve the target.

The role of the Environment Manager is pivotal to engaging leadership and wider programme teams on the business case for biodiversity net gain and to provide overall guidance and direction for successful delivery.

Application of the Defra biodiversity metric was key to;

- TLP being able to measure the delivery of its biodiversity net gain target in a robust and transparent

way.

- Providing an important understanding of how much biodiversity was lost, where the loss occurred and how much biodiversity was needed to achieve net gain
- Communicating and engaging the leadership team on biodiversity risks and opportunities to the business.

Users of the metric need to be experienced and competent to be able to undertake a robust assessment and apply it appropriately to a railway environment. As the metric was issued by Defra as a pilot tool, users should refrain from altering the parameters of the metric to prevent introducing error into the calculations and therefore incorrect budget estimates.

Budgets and resources are required to undertake the Defra metric and to engage local wildlife groups to meet the net gain target. As this approach was relatively new, costs to deliver biodiversity offset are only indicative at this stage therefore contingency should be built into budget estimates.

Clear policies, procedures and training are vital to successfully deliver a biodiversity net gain target. NR should set clear requirements internally and across its supply chain based on good practice.

Biodiversity net gain should be embedded early into contracts to prevent costly variations and/or budgeting constraints later.

Working with local wildlife groups has many benefits, as described above. However, at the time biodiversity offsetting was new and untested in the UK, and the TLP recognised that wildlife groups were unlikely to have a proven track record in delivering such projects. For future partnerships with local groups, NR should ensure that clear contracts and project management is in place that cover factors such as appropriate timescales, costs and risks to delivery. NR should also ensure that local groups have the necessary capacity, experience, skills and resources to deliver the offset; that local stakeholders are clearly identified and engaged early (for example, the local Friends Of group) and that a Biodiversity Offsetting Management Plan is agreed early and delivered on throughout the works.

Stakeholders should be engaged early to gain their support and trust. Local conservation/friends of groups should also be engaged as they will play an active role in the design and delivery of the biodiversity offsets on site.

Short term and long term management and monitoring arrangements of biodiversity offsets should be fully considered at the outset of the project and defined in the Biodiversity Offsetting Management Plan. For example, NR IP have short delivery timescales as opposed to biodiversity offsets that need to be managed for approximately 25 years, therefore the long term responsibilities and funding for biodiversity offsets needs to be discussed and agreed early between all parties.

Biodiversity net gain provides a number of wider benefits that positively affects the NR's ability to deliver its biodiversity commitments and its reputation with the local communities and stakeholders. For local wildlife groups, biodiversity offsets can help attract further funding although they must identify projects that align with good practice.

Further Information

For further information on the Thameslink programme please see below;

Thameslink Programme <http://www.thameslinkprogramme.co.uk/>

Thameslink Sustainable Development Policy <http://www.thameslinkprogramme.co.uk/approach>

Network Rail Sustainable Development Strategy

<http://www.networkrail.co.uk/browse%20documents/strategicbusinessplan/cp5/supporting%20documents/transforming%20network%20rail/sustainable%20development%20strategy.pdf>

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