WESSEX CAPACITY ALLIANCE (WCA)
WESSEX REGION – RAILWAY INFRASTRUCTURE (WATERLOO THROUGH WOKING)
NETWORK RAIL, SKANSKA, COLAS RAIL, AECOM, MOTT MCDONALD

BIG Biodiversity Challenge Award Category: Client

Project overview

Wessex Capacity Alliance (WCA) is a £450 million infrastructure enhancement programme to increase capacity along the Wessex route into London Waterloo. The project's work focuses on Waterloo station, Vauxhall Station, and Power Upgrade works to facilitate the running of modern, longer, and faster trains.

What were the biodiversity conditions on site, prior to the enhancement?

There were two broad categories of site for biodiversity improvement works; "project compound" (London Stone Business Estate), and "track access" (comprising of 5 separate sites).

Project compound: When the project took possession of the compound, it had been used for decades by a multitude of railway contractors with no consistent or planned management. As a result the limited habitat present comprised of 650m² of poor condition "scattered scrub".

Track Access: The 5 power upgrade sites were in countryside and suburban residential settings. They comprised of poor to moderate condition "semi-improved acid grassland", "semi natural broadleaved woodland", and "spoil" totalling 440m².

What were the reasons behind this project?

Wessex is one of the busiest railways in Europe with infrastructure struggling to keep up with projected passenger growth. Capacity upgrade is necessary for the economy, better passenger experience, and safety. Through our work, WCA are addressing these issues; at Waterloo by bringing the old Eurostar terminal back into operation and extending platforms 1-4, and throughout the route by constructing stairs, lifts, and subways, and upgrading the track power. This will deliver: 25% increase in on-train capacity, longer more spacious trains, over 10,000 additional seats in the morning peak, congestion relief on platforms and concourses, and safe cable management systems significantly reducing the need for staff to go on live track.

Three bridged hibernacula installed at London Stone Business Estate (1) & communication & information sheet posted to residents (included gift of seed) (2).

What were the biodiversity measures taken?

When planning biodiversity enhancements for the Alliance it was soon established that the opportunity for habitat creation on the project was limited, due to the limitations of the work scope. Planning enhancements therefore required a creative and strategic approach. All sites that we had the ability to influence were defined, and an Alliance wide plan was generated. This plan followed the mitigation hierarchy, maximising retained habitat through design, and focusing on improves to condition of habitats as opposed to costly and risky habitat creation. Reseeding of grassland, scrub, and woodland understory flora was carefully aligned to species reference in local Biodiversity Action plans. This approach ensured that our small scale intervention would mutually support the wider landscape scale ecology.

Headline achievements for the project include:

- No Net Loss for the hedgerow replacement.
- Biodiversity net gain of 19%, beating the 10% stretch KPI target.
- 1090m² of habitat enhanced (ranging from scrub, acid grassland, neutral grassland, and broad leaved semi-natural Woodland).
- Over 100 households engaged, gifting seeds with an information pack, leading to a potential additional 500m² of localised wildflower habitat (not included in No Net Loss calculation).
- Over 1000 staff engaged on matters of biodiversity.
- Comparing biodiversity tools, and submitting the results to academia and DEFRA to contribute to the future of the net gain approach.
- Redirecting 2 tonnes of material (timber, soil, sacks, bricks, concrete, bottles, and plastic) from landfill through recycling them on site, in the construction of 4 hibernacula.
- Installing 2 bird boxes and 2 hedgehog domes (limitations due to safety critical structures on site reducing suitable bird box locations).
- Contribution to Network Rail IP commitment of net gain.

There was engagement with the Wessex Route and Infrastructure Southern environmental managers, landowners, and local communities to ensure that the created enhancements would be managed into the future. To avoid accidental damage, network rail put the measures on the asset register to flag them to other contractors during their works plans. To back this up further, information boards were installed identifying clearly the enhanced features, and educating people as to their purpose – whilst also engaging peoples' plant species identification skills with a picture board and species reference list.

Communication boards left at site to educate and identify enhancement measures, plus bird boxes and hedgehog domes in situ.

Further information

Biodiversity units were calculated using a combination of GIS and site based surveys. This enabled the desktop process to proceed more quickly, and gave engineering teams a clearer idea of what they were delivering. The desktop exercise was backed up with site visits by a qualified ecologist, defining the habitat, distinctiveness, and the condition, and recommending measures to improve the condition of the habitats. Legacy was established through the engagement of the community, and although they were not allowed onto the sites, engagement through the gifting of the same seed being planted in the compounds increased the enhancement footprint, and gave a great platform to discuss biodiversity concerns with stakeholders.

To guarantee perpetuity of the features such as the hibernacula, their locations were selected to reduce conflict with any future works undertaken by contractors using the site after handover by WCA. Combined with signage and inclusion of the hibernacula, hedgehog domes, and bird boxes in their asset register, these measures inserted these features firmly into all future works planning processes.

The teams benefitted greatly from the experience, personally and professionally. With a specialist ecologist coaching and advising on the days of the works, the operatives were able to learn about why biodiversity is important, how simple measures can provide resources for nature, and how similar measures can be taken and applied at home and on future jobs. Additionally, staff working on the enhancements were leaving the project the following week having worked with each other for 6 years, this project gave them a positive activity on which to finish their time together as a team.

Total biodiversity gain above baseline was 0.12 units, costing £6,500. This included labour costs and materials, most of the cost was labour (£4000), but we utilised staff on a week of low activity, therefore this cost was already a committed expenditure effectively costing the project no more money.

Project Team

WCA consists of Network Rail, Skanska, Colas Rail, AECOM, Mott McDonald.

What was the motivation for carrying out the enhancement?

WCA have a commitment to deliver a lasting positive legacy. Part of this legacy encompasses biodiversity enhancements. Recognising that biodiversity underpins ecosystem services, WCA set a voluntary stretch KPI target of 10% biodiversity net gain, this created widespread support for the works across disciplines and departments. The intervention also fits into WCA's wider sustainability and waste strategies by creating positive community interactions (seed gifting) and by recycling waste materials on site (hibernacula). The project also wanted the opportunity to test and compare Biodiversity Net Gain tools based on the DEFRA metric, and upskill our workforce to integrate net gain methodology in the wider rail industry.

The proud Vauxhall team after the construction of bridged hibernacula at London Stone Business Estate compound.