

**THE SOUTHERN STRATEGIC SUPPORT MAIN (SSSM)  
NORTH SOMERSET/SEDGEMOOR  
KIER UTILITIES AND BRISTOL WATER**

**BIG Biodiversity Challenge Award Category: Medium - Large**  
Project overview

The Southern Strategic Support Main is a 31km water pipeline between Barrow and Cheddar reservoirs which will improve the water supply to 280,000 houses and support the growing local population. The pipeline passes through open countryside and towns and villages providing the opportunity for both biodiversity enhancement and community engagement.

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

The EIA surveys undertaken in 2016 found 25 protected areas, 5 priority/BAP habitats, 200 hedges, 400 standard trees (some TPO protected), 18 ponds with great crested newts, 17 badgers setts within 30m, 3 bat roosts, 1 barn owl roost, 1 kingfisher population, 24 locations of dormice, 400 bee orchids, small population of cave spiders, a small population of reptiles and 10 invasive species. The pipeline was designed to avoid as many of these as possible and enhancements focussed on improving conditions where they could not be avoided.

**What were the reasons behind this project ?**

The SSSM is the largest single pipe line scheme ever undertaken by Bristol Water. There was a shared goal by client, contractor and local stake holders (district councils, local conservation groups) to leave a legacy by providing funding and staff time that were outside contract requirements. Local wildlife and habitats were protected as much as possible within the design and environmental management plan. It was our goal to achieve a biodiversity net gain using the biodiversity index calculator generated between Bristol Water and Ecosulis that would be beneficial.



*Stock pile of water pipeline ready to be installed. 31km in total mostly across agricultural land*



*First saplings planted as part of one tree per child*

### What were the biodiversity measures taken?

The main enhancements on SSSM are as follows;

It is nationally agreed that the owl and kestrel populations are in decline from lack of suitable nesting and foraging habitat from agricultural intensification. Kier gave Churchill Academy School and Bridgwater College materials to make barn/tawny/little owl and kestrel boxes for more than every km of the pipeline (totalling 40 boxes). The boxes were installed by the Kier environmental team and the Hawk and Owl Trust in spring 2018 in land owned by 24 landowners affected by SSSM. Kier and volunteers will monitor the boxes with landowners to gather important data and inform habitat management but also to uphold good client/community relations.

'Spawn to be Wild' is a project developed by Avon Wildlife Trust and Bristol Water to inspire young people to care for the natural environment. Through this project pupils learnt about freshwater ecology and how they can ensure the sustainability of a healthy environment specifically in relation to the endangered European eel. The project, delivered with Kier, provided opportunities for five schools along the SSSM route to learn about the natural world by caring for a tank of juvenile eels, learning about their ecology and eventually releasing them into the wild. This will improve the chances of young eels making it to adult stage and increasing the breeding population.

Kier and Bristol Water worked with Bristol City Council to go above and beyond our compulsory replanting plan and plant a small woodland, connecting two fragmented woodlands, adjacent to the pipeline. Children from ten inner city schools came to site and planted approximately 1060 trees whilst being taught about nature. The aim of this project was to both increase the habitat quality for the local dormouse population and allow children deprived of nature interaction to learn and enjoy a greener environment.



*Churchill Academy School pupils with some of the owl boxes they made.*



*One of the inner city schools from Bristol after planting tree saplings in Brinsea*

### Further information

The SSSM pipeline was a unique project with many environmental constraints. It has been challenging to manage these constraints but the Kier team worked alongside nature, moving where possible & protecting ecological features. In addition to the challenges presented, the SSSM team still managed to undertake enhancement & community engagement projects described. Efforts made to improve the environment after SSSM is completed will have a long-lasting effect on wildlife in the local landscape, leaving a legacy of enhanced habitat for species such as dormice, bats, great crested newts, bee orchids & owls. Spawn to be Wild helped show not only growing minds of children but also the SSSM team, who worked through 2 river catchments as part of the project, the importance of working with water environment so humans and wildlife can benefit from good water quality. The Citizen Owl Box scheme will be an ongoing monitoring scheme of Kier & the public working together. All enhancement projects have provided a platform for community engagement & making stronger sustainable relationships with the local community. All of this has been completed whilst still achieving Kier's and Bristol Water's vision & allowing the demonstration of a positive biodiversity net gain using the biodiversity index calculator. Kier & Bristol Water are very proud of this project & can be used as a benchmark of what can be achieved with collaborative thinking & a strong team ethic, creating a long lasting legacy.

### Project Team

- Kier Utilities Environment team: Jamie Edmonds, Grace Burdge and Rozy Gray
- Bristol Water Environmental Manager – Natasha Clarke
- North Somerset Council, Sedgemoor District Council, Bristol City Council
- Churchill Academy School, Bridgwater College, Hawk and Owl Trust, Avon Wildlife Trust, The Woodland Trust and all landowners who accepted the enhancements

### What was the motivation for carrying out the enhancement?

The SSSM project has had a positive impact on the local community and wildlife. It was our goal, as the environment team and residents to the area to make sure the local natural environment was protected and safeguarded for many years after SSSM is complete. Kier also wanted the community to appreciate their natural environment, once we had reinstated better than originally present. Kier want to leave a legacy of enhancements that include valuable habitat and a respect for wildlife within the local community that will be remembered.



*Elvers ready to be released at Blagdon Lake as part of Spawn to be Wild*



*Kier environmental team installing one of the barn owl boxes along SSSM*