Knowledge Share
Galliford Try Infrastructure

GallifordTry

Ref No.	KS2510
Project Name:	Species Rich Grassland (SRG)
Location:	A47 North Tuddenham to Easton
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Knowledge/Case Study Type:	Quality, Efficiency & Improvement ☐ Environment, Sustainability & Carbon ☒ Innovation & Digital Technology ☐ Engineering & Design ☐
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Description -

The A47 North Tuddenham to Easton scheme in Norfolk is a critical infrastructure project designed to enhance connectivity and support economic growth in the Norwich region. The project involves upgrading the existing single carriageway to a dual carriageway between Norwich and Dereham, including the addition of two new junctions at Berry's Lane/Wood Lane and Blind Lane/Norwich Road. Alongside this, the Blofield section of the A47 between Blofield and Acle will be improved with a two-lane dual carriageway, a compact grade separated junction for the B1140, and a new link road connecting Blofield to the B1140 via North Burlingham.

A core environmental requirement of the project is the establishment of Species Rich Grassland (SRG) to meet biodiversity targets. SRG is typically reliant on low nutrient soils, but the scheme is located in an area of rural Norfolk with nutrient-rich soils. This presented a major technical uncertainty, as there was no established industry methodology for successfully establishing SRG in such conditions without large-scale soil replacement—an environmentally and commercially unfeasible solution.

Action -

The project team recognised the challenge and initiated a structured research and development process. The steps undertaken included:

Design Review & Option Scoping: A comprehensive design review was conducted, resulting in a paper that set out potential approaches. Options such as removing and replacing the topsoil, extending the scheme footprint, exporting topsoil offsite, or downgrading to amenity grassland were all considered but rejected due to environmental, commercial, or technical impracticality.

Market Engagement: The team engaged with the supply chain to explore innovative approaches and assess the availability of suitable materials and expertise.

Internal Collaboration: Cross-discipline discussions were held to ensure the challenge was fully understood across the project team and to generate collective input into potential solutions.

Inspection and Test Planning: Inspection and Test Plans (ITPs) were developed to ensure trials could be monitored, evaluated, and refined systematically.

Test Panels & Program Development: Specific trial plots were agreed and established on site, allowing real-world testing of different seed mixes and soil preparation techniques. A programme of works was created to track progress and align the trials with the overall project timeline.

Scientific Trials: A second technical paper was developed to guide the ongoing physical research. This involved testing seed mixes, soil preparation methods, and maintenance regimes under the actual conditions of nutrient-rich soil to identify which approach best supports SRG establishment. Alternative solutions such as topsoil replacement or footprint expansion were ruled out due to cost, environmental disruption, and land acquisition constraints. The research focus shifted toward in-situ solutions: adapting soil preparation techniques and seed mix selection to work with, rather than against, the nutrient profile of the existing soils.
Result -
The ongoing trials have already generated significant advancements in technical knowledge. The team successfully developed methods to: Identify soil nutrient characteristics through chemical evaluation. Match specific seed mixes to soil types and nutrient levels to maximise the likelihood of SRG establishment. Establish effective maintenance programmes tailored to sustain the grassland once initial growth occurs. While full results will only be confirmed upon project completion in 2026, early findings provide strong evidence that SRG can be established on nutrient-rich soils without the need for costly and environmentally damaging soil replacement. This represents a step change in how biodiversity requirements can be met on large infrastructure schemes.
Transfer –
The technical knowledge generated through this project is directly applicable to future infrastructure schemes across the UK. The new ability to chemically evaluate soils and select compatible seed mixes provides a replicable, evidence-based methodology for establishing SRG in conditions previously considered unsuitable. This knowledge can be transferred to: Future Projects Nationwide: Many infrastructure schemes face similar biodiversity requirements in areas with nutrient-rich soils. The A47 trials provide a proven platform for approaching these challenges. Industry Standards: As no standard approach previously existed, the findings from this R&D work have the potential to inform future best practice and contribute to new guidance on SRG establishment. Further Research: The platform created through these trials allows for additional experimentation where soil types differ, further expanding industry understanding of SRG establishment. In summary, the A47 North Tuddenham project has advanced industry knowledge by addressing a technical uncertainty that had no readily deducible solution. Through structured research, collaboration, and field trials, the team has developed innovative methods to meet biodiversity targets in a commercially and environmentally sustainable way, creating a legacy of transferable knowledge for future projects.