LNER
LONDON NORTH EASTERN RAILWAY

NetworkRail

DeterCam

## DeterCam Case Study

# Little Bytham, United Kingdom

**Target Animals: Deer Detection and Deterrence Along Railway Infrastructure**

# Project Overview

Following the successful Stoke Junction trial, during which no deer strikes were reported within the protected section, Network Rail and London North Eastern Railway (LNER) approached Innovation Factory to expand DeterCam deployment to Little Bytham.

More than **1,000 DeterCam units were installed to protect 4.5 miles of railway, covering approaches from both sides across seven separate sections. The installation was completed in three days**, despite challenging winter conditions, muddy terrain and access requirements involving neighbouring farmland.

## Challenge

Little Bytham experienced substantial deer activity, with animals approaching the railway through agricultural land and open boundary sections. One particularly exposed stretch had approximately **400 metres without fencing**, allowing animals easy access to the track.

Winter weather and muddy ground complicated access and installation. Working across neighbouring farmland also required permission from individual landowners and coordination of installation activities.

Nearby residential properties required careful management of deterrent sound levels. The deployment also needed to accommodate **badger setts within an area of approximately 700 m²**, distinguishing normal movement around the setts from animals approaching the railway.

## Solution / Deployment

The site was divided into seven sections, with DeterCam units positioned to cover both sides of the railway. Installation focused on open boundaries, frequently used animal routes and areas with limited physical protection.

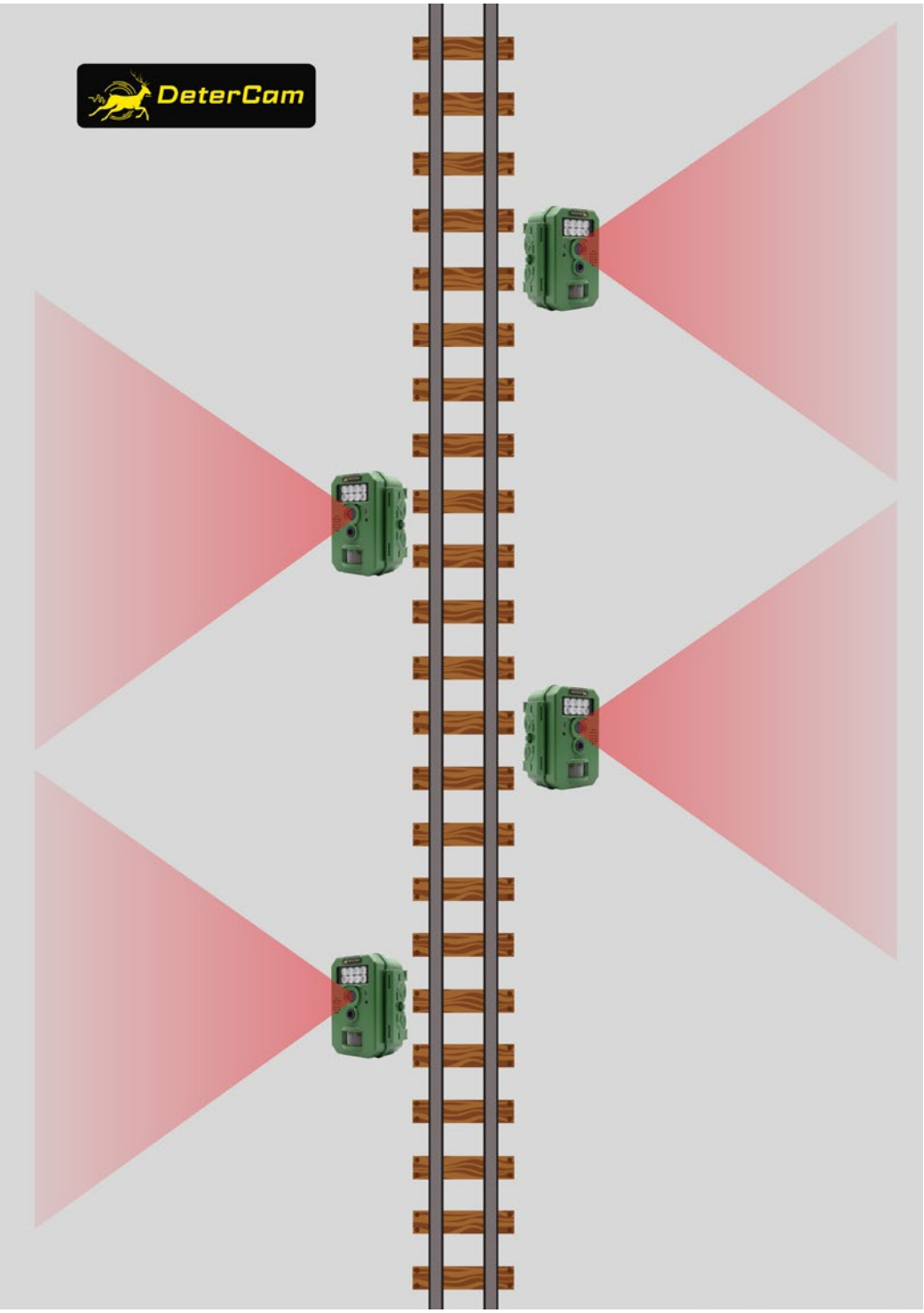
DeterCam's lightweight design allowed each installer to carry **up to 30 units, reducing repeated trips across difficult terrain. Each unit required approximately two minutes to install and two minutes to test**, helping a small team complete the deployment within three days.

The system uses on-device AI to identify animals and activate species-specific deterrents, while recording events for review. Settings were adapted to local conditions:

- **Residential areas:** Lower-volume deterrent sounds were selected to limit disturbance to nearby homes.

• **Open railway boundaries:** Units were positioned to intercept animals approaching through unfenced sections.

• **Badger sett area:** The system was configured to ignore badgers entering their setts, with flashing lights disabled in this area. A separate audible response was configured for detected movements towards a railway crossing.
These settings were designed to target railway access while avoiding unnecessary activation around normal badger activity.




**Installation Layout**

## Objective

The project aims to reduce deer–train collisions by detecting and deterring animals before they enter the track, helping protect wildlife and reduce train damage and service disruption.

It also evaluates how a large deployment can accommodate farmland access, nearby residents and different wildlife species through flexible installation and location-specific deterrence settings.

## Key Findings / Observations

- **100% Collision Reduction:** Zero deer strikes have been reported within the protected areas during their monitored deployments since 7th Feb 2024.
- **High-Volume Deterrence:** Over 13,000+ This figure till (11th October 2026) **deer deterrence** events have been recorded across the program to date.
- **Behavioral Insights:** The system tested over 20,000 unique deterrence combinations (visual lights, audible sounds, and ultrasonic frequencies), automatically labeling which alarm profiles were most effective for specific deer species.

## DeterCam Milestones

**0**
**Deer Strikes**

**13,000+**
**Deer Deterred**

** Figures from 7th Feb 2024 to October 11, 2026**

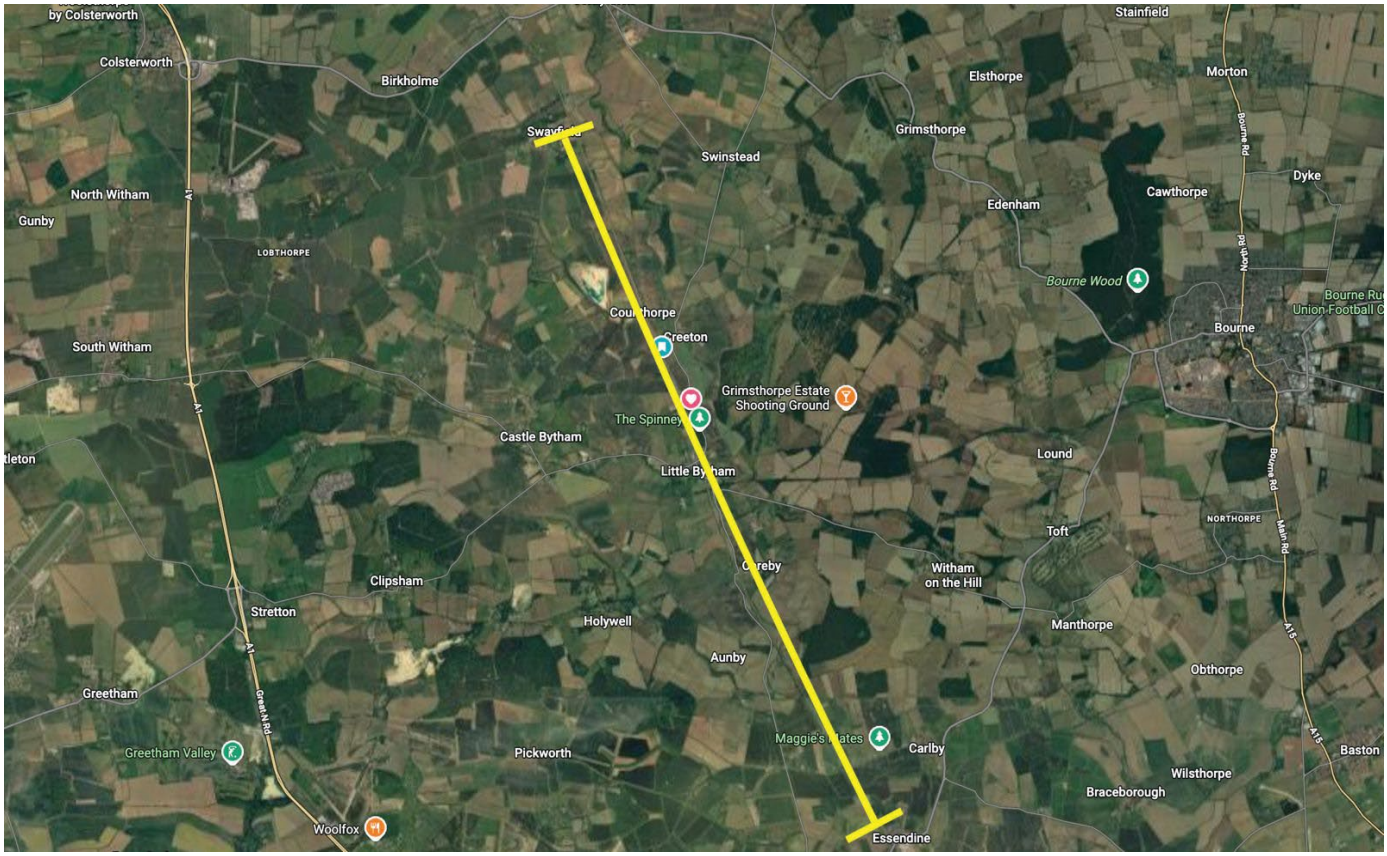
## Going Forward

Continued monitoring will assess animal responses, identify changes in crossing patterns and guide adjustments to unit positioning and deterrence settings.

Particular attention will be given to the unfenced section, sound levels near residential properties and the effectiveness of the configuration around badger setts. Reviewing recorded events alongside railway collision records will help assess longer-term performance and inform future deployment at similarly complex sites.

## DeterCam Versions

# LNER and Network Rail — UK




**(Little Bytham) total 6 miles**

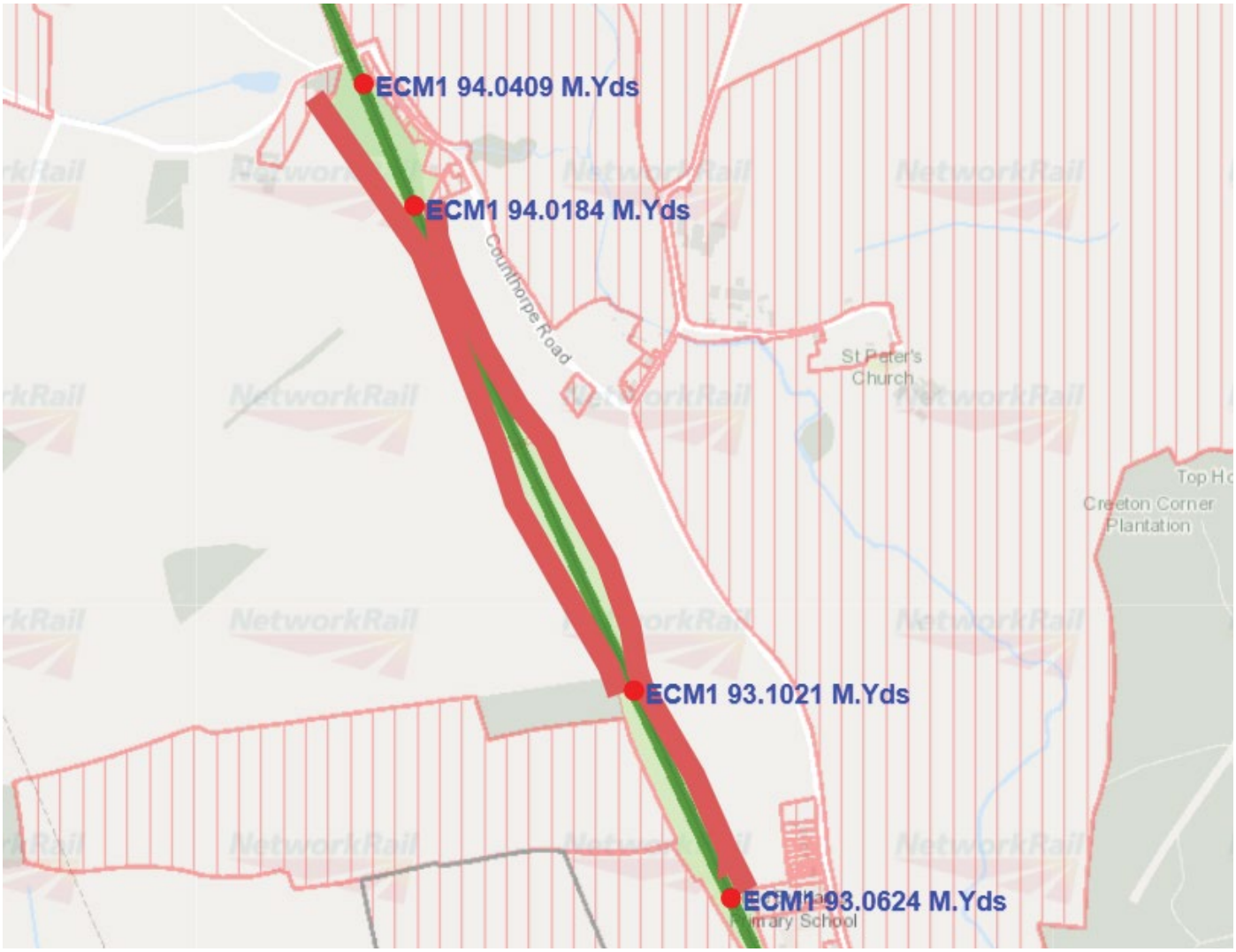
# Little Bytham, United Kingdom

## Damaged / low level fences

# 1000 units installed at Little Bytham

## DeterCam v3 and DeterCamv4

2276


ECM1 94.0409 M.Yds
ECM1 94.0184 M.Yds
Counthorpe Road
St Peter's Church
Creeton Corner Plantation
ECM1 93.1021 M.Yds
ECM1 93.0624 M.Yds

what3words
Map
App
Business
Developer
///sunflower.geologist.idealist
Share
Navigate
Saved
Saved to Little Bytham
Add label
Little Bytham
Nuash Animal Services
The Firs Kennels & Cattery
Temporarily closed
The Spinney
West Glen River
The Cow Shed
Little Bytham Rd
Spineless Design
Revellation IT Limited
Mulberry Motor Company
Avalon Design Lighting
High St
Glebe Cottage
Church Ln
Rasell's Nurseries
Friendly Car People
Bay Tree Originals
Turners of Bytham
B1176

Drone survey for low fence

///ramps.shunning.burglars
Share
Navigate
Save
2 miles and 250m
Castle Bytham
Little Bytham
Creeton
Combridge A J
The Studio
Rectory Farm Annexe
Ski With Ease Ski School Morzine - Les Gets...
Oaktree Home Improvements
Castle Bytham Village Hall
The Castle Inn And Pantry
Bythams Community Shop & Cafe
Hix G C & D a & Son
Stamford Virtual Services
Rosewell Centre
Steel Landscaping Co
Holywell farm barn
The Bythams Cattery
The Cow Shed
The Bythams Primary School
Nolish Animal Services
The Spinney
Mulberry Motor Company
Glebe Cottage
Russell's Nurseries
Hill View
Little Bytham Rd
Glen Rd
Glen Ct
Chestnut Ave
Clipsham Rd
Holywell Rd
Counthorpe Ln
West Glen River

# Deployed by Leading Organisations