Thursday, March 5, 2026

# ADEPT President's Awards 2026

Entry form

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| **Phone Number** | (07771) 960110 |
| **Award category** | Deploying Innovation and Technology |
| **Project Title** | Beyond Lighting: A Digital Blueprint for Safer, Lower-Carbon Infrastructure |
| **Local authority** | East Riding of Yorkshire Council |
| **Partner/s if applicable** | East Riding of Yorkshire Council (Lead Authority) Hull City Council Lancashire County Council Oxfordshire County Council Westminster City Council Cambridgeshire County Council Derbyshire County Council Aberdeenshire County Council Pembrokeshire Council Welsh Government National Highways and Transportation Network NHT Institute for Transport Studies, Leeds University University of Sheffield Local Transport Projects Meon UK Clearview TRT Lighting Transoft Solutions Urbis |

## Headline summary (150 characters max.)

Digital forecasting and24/7 AI road safety tools cutting 50% carbon and 80% cost, transforming streetlighting for communities at a national scale.

**Please note we need at least one supporting image per award submission. Upload your image/s below.**

## Deploying Innovation and Technology: How has this project used digital innovation and/or the imaginative use of new or existing technology? (150 words max.)

The UK has 7.2 million streetlights, costing over £1 billion annually. Yet investment decisions have historically been driven by asset age and engineering convention rather than evidence of need.
Part of the £30 million national DfT/ADEPT Live Labs 2 programme, East Riding of Yorkshire Council has transformed this model through two integrated digital systems: a Strategic Carbon and Cost Forecasting Tool and a world-first AI-powered thermal road safety monitoring system. Across eleven partner authorities, the programme represents 10% of UK streetlighting stock, providing nationally significant scale.
The Carbon/Cost Decision Support Tool is not a reporting sheet; it is a forecasting tool for decision-makers. It models future carbon and cost over a 40-year appraisal period, enabling comparison of



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conventional lighting with alternative visibility solutions. For the first time enabling clear, combined, whole life financial and carbon return on investment assessment.
This replaces assumption-led renewal with data-led optioneering embedded directly into governance.

### Deploying Innovation and Technology: How has this project shown evidence of improved outcomes for users and communities? (150 words max.)

The digital approach has delivered measurable environmental, financial and safety outcomes.
Whole-life carbon and cost forecasting demonstrates reductions exceeding 50% in carbon and 69–80% in lifecycle cost when alternative visual environments replace conventional lighting. This provides a robust invest-to-save business case, proving that decarbonisation can reduce long-term revenue dependency.
The world first 24/7 AI road safety monitoring system delivers 24/7 behavioural analytics in complete darkness, measuring vehicle trajectories, conflict heat maps and near-miss indicators such as Road Space Encroachment Time. Safety data shows no increase in collisions attributable to lighting reduction and indicates calmer speeds and improved vehicle spacing at conflict points.
By replacing reliance on historic collision information with proactive digital risk detection, the council provides continuous safety assurance while improving financial resilience and environmental performance.
The scale of partnership delivery ensures these outcomes are nationally relevant, not isolated pilots.

### Deploying Innovation and Technology: How has this project shown evidence of the transformation of a service/department/organisation by changing behaviours, delivering savings or improving ways of working? (150 words max.)

This project has transformed how investment decisions are made.
Street lighting traditionally functions as a constant dynamic carbon and financial liability, consuming energy daily. The Strategic Carbon and Cost Forecasting Tool reframes this by comparing dynamic assets with fixed-carbon alternatives, allowing officers and Members to make evidence-led decisions at network and programme level.
The tool supports scenario testing, option appraisal and network-scale forecasting for capital planning. It enables informed decision-making by presenting carbon and cost implications transparently at the point of approval.
Carbon, cost and AI-derived safety dashboards are now reviewed concurrently by highways, risk management and legal teams. This has replaced siloed engineering judgement with structured, cross-disciplinary digital governance.
The result is a permanent behavioural shift from age-based replacement cycles to digitally validated, transformational forward-looking investment.

### Deploying Innovation and Technology: How can the innovation/technology in this project be applied in multiple sectors/areas? (150 words max.)

The digital architecture extends beyond street lighting.
The carbon and cost forecasting framework can be applied to drainage, structures, carriageway treatments and other infrastructure assets requiring whole-life appraisal. It provides decision-makers with scenario modelling and investment comparison tools applicable across capital programmes.
The AI behavioural monitoring system is equally transferable. It can be deployed at junctions, school zones, temporary traffic management sites and active travel corridors, delivering live safety intelligence without extensive physical infrastructure.
Developed through the Live Labs 2 partnership, representing 10% of national streetlighting stock, the tool is designed for scalability. Potential cloud hosting through the NHT Network would allow anonymised aggregation of carbon and cost data, supporting national reporting and benchmarking.
This positions the innovation as scalable digital infrastructure rather than a single project solution.

### Deploying Innovation and Technology: How does this project demonstrate scalability and resilience - the ability to use technology in a wider scope and in a way that encourages longevity of use? (150 words max.)

Scalability and resilience were embedded from inception.
The Decision Support Tool includes strategic and expert user routes, enabling adoption by authorities with differing levels of data maturity. Its 40-year forecasting framework incorporates asset lifecycles, grid decarbonisation trajectories and financial modelling, ensuring robust long-term planning.



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By enabling comparison between energy-intensive dynamic assets and lower-maintenance fixed-carbon alternatives, the approach reduces exposure to volatile energy pricing and long-term operational liability. Through the 11 partnering highways authorities, representing approximately 10% of UK streetlighting stock, the model is tested at scale. As a result East Riding is now preparing to roll out the methodology across its entire streetlighting asset.
Together, these two digital systems provide a scalable resilient risk management and decision making model ready for scaling and national rollout top support all council's in achieving safe, Net Zero future highways services.

### All categories: please add anything else that supports your award entry

Supporting Evidence Pack

https://eryc-my.sharepoint.com/:w:/g/personal/julie_clarke_eastriding_gov_uk/IQDApMyQAGu4S6AQ8yE0AtUzAYAaibY0Pqw1BArhtqoP-EU?e=4%3AXCWSYF&at=9&CID=EE93DAE0-BF7E-4720-A4B4-2C4386FE70C2&wdLOR=c942D54F3-2AEE-4433-AD95-58910276C4E6



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