

UNLOCKING VALUE BY CONNECTING UP OUR ROADWORKS

A Staffordshire demonstration project highlights the significant benefits – economic and human – of joint street works, says Future Cities Catapult

Although street works management initiatives exist in the UK, take-up is patchy and there are barriers to their use. The Staffordshire Connected Roadworks programme sets out to support the expanded implementation of joint street works by teaming technology and processes in meaningful new ways.

Funded by Innovate UK over an 18-month cycle, the £650,000 project collects, maps, and analyses forward planning utilities' data to boost the number of joint street works, to improve coordination, and to cut the cost of disruption arising from street works.

It does this in a holistic way by:

- Developing an interactive mapping tool and a central data hub
- Promoting fruitful collaboration between utilities and local authority
- Identifying joint street works opportunities and regulatory barriers to their adoption
- Making the evidence-based business case for joint street work

With an operational focus on Streethay among other areas of Stafford, the programme brings together multiple partners including Amey (project lead – data and communications), CSC (mapping platform), Staffordshire County Council (highways management), Future Cities Catapult (research plus business case in partnership with Staffordshire University), and Tenshi Consulting (digital outreach, including challenge-based engagement with local SMEs).

STAFFORDSHIRE CONNECTED ROADWORKS

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CURRENT PRACTICE COUNTING THE COST OF SILO THINKING

Although enablers for collaboration exist, effective street works management is too often undermined by silo thinking and proprietary self-interest, with largely uncoordinated works subject in addition to a wide range of by-laws and regulations. This synergy deficit costs us all dear.

Department for Transport estimates put the cost to the UK economy of traffic disruption associated with street works at some £4.3bn each year. The social costs of utility works, meanwhile, are put at £5.5bn annually, with street works giving rise to more pollution and accidents, less reliable journeys, and reduced resident satisfaction. And London tops a world list for driver hours wasted annually and for fuel consumed per vehicle while idling in roadwork congestion.

Central to the success of the Staffordshire Connected Roadworks project has been the quality of the conversation between local authority operations team and contractors, encouraging stakeholders to share or pool data in a spirit of open innovation and mutual respect.

Says Finlay Kelly, Project & City Finance Lead at Future Cities Catapult: 'The real story here is about commercial players collaborating with local government and academia to build a shared data platform – one that solves a real-world problem and unlocks value. Ensuring stakeholders are comfortable with making data available requires vision, leadership and robust procedures. That's what we see here.'

QUANTIFYING THE BENEFITS OF JOINT WORKS FOCUS ON STREETHAY

Designed around major interventions by Severn Trent Water and Miller Homes, the Streethay scheme enabled 10 separate works by multiple contractors to be delivered jointly around a single road closure, resulting in a 25-week reduction in combined works duration. Key benefits of the collaboration include:

- Cumulative road user gains from reduced disruption put at £3.5m
- Reduced carbon emissions from vehicles estimated at 3,500 tonnes

Additionally, savings to contractors through reduced materials and management costs at Streethay are put at £184,000, with further road maintenance savings estimated at £7,000.

MAPPING POTENTIAL HOW THE PROGRAMME BREAKS NEW GROUND

As well as gathering mid-term (1-5 year) planning data from a wide range of utilities, developers and contractors, Connected Roadworks breaks new ground by prototyping and developing an interactive portal for mapping the potential for joint street works in target areas, including Streethay. It also:

- Measures the operational, financial and social impact of prospective street works from the viewpoint of residents, contractors and council.
- Engages (using open calls) with local communities and businesses with the aim of improving communications relating to street works.

Assesses the current regulatory landscape in order to make policy recommendations

Among the important outcomes is an economic impact assessment 'white paper' prepared by Future Cities Catapult and Staffordshire University. As well as exploring the effect of roadworks on economic activity – identifying, for example, up to £4.6m in travel time savings per annum to the local economy through reduced congestion and £1.3m of efficiency savings to industry – the paper analyses the UK-wide marketplace in order to baseline data and to evidence findings. It also surveys a substantial cohort of contractors, utilities, businesses and citizens in order to balance quantitative with qualitative data. Behind every street works operation are the human stories.

ALIGNING COMMERCIAL OPPORTUNITY WITH THE PUBLIC INTEREST

The Staffordshire Connected Roadworks programme showcases a new approach to streamlining the way information is shared and communicated in order to generate quantifiable economies of scale for a wide range of sector players. Network reliability improvements demonstrated by the project point to a reduction in travel costs plus quality of life gains across social and environmental indices.

The success of Connected Roadworks paves the way for a nationwide roll out of methodologies and tools – not least the innovative planning portal around which the programme is built. Says Finlay Kelly at Future Cities Catapult: 'By aligning public with commercial interests we can confront a major urban challenge, and do it in a way that is scalable and replicable. As a real-world application deploying real data and partners in a live scenario, the project points the way forward with credibility and authority.'