



Association of Directors of
Environment, Economy, Planning & Transport

ADEPT President's Awards 2022

Entry form

Award category:	Digital Innovation/ Technology
Title:	Toneway Microsimulation and Traffic Management Modelling.
Entrant:	Somerset County Council
Main contact name:	Mike O'Dowd-Jones.
Email address:	modowdjones@somerset.gov.uk
Partner/s (if applicable):	City Science. WSP.
Headline summary (150 characters, c. 20-25 words) New digital technology for low-cost repurposing of strategic traffic models, visualising data to inform operational traffic management decisions.	

Please note we need **at least one supporting image** per award submission.
Supporting images should be attached separately as jpg or png files.

Please paste links to any supporting video evidence here

Link 1	https://www.youtube.com/watch?v=sU8hzm71Hcc
Link 2	



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500-word project outline (please ensure you do not exceed the word count and address all the judges' criteria – for more info see [here](#))

As part of the design of the Taunton Toneway Corridor Improvement and construction contract clauses; Somerset County Council used groundbreaking traffic modelling techniques to visualise and assess the likely congestion impacts of various traffic management options, and decide which layouts (such as road and lane closures) should be used during construction.

The junction is a major pinchpoint on the Taunton network that can cause disruption during peak times. Construction of the improvement works could have caused unacceptable impacts on wider traffic in Taunton during the works, and it was feared traffic gridlock was a potential outcome. An evidenced understanding of the likely impact during construction was key to moving the scheme forward and informing the best contract specifications for traffic management.

New technology was developed by City Science to quickly reconfigure and repurpose Somerset's existing strategic traffic model, creating a 'micro-simulation' model which could be used for this specific task, converting strategic transport models (SATURN) into microsimulation models (SUMO), cutting out many months of costly and time-consuming model development and delivering a vastly improved interactive experience.

City Science and WSP prepared the tools to enable the Council to visualise traffic flowing around the whole Taunton network, enabling us to see where traffic queues were likely to build up to unacceptable levels under various scenarios, and compare and discuss the options using information and insights that have not been available before. This is one of the first uses of this new technology in the UK.

This imaginative concept enabled traffic management decision makers to simulate the study area in detail and identify wider impacts not usually identified by a microsimulation model alone.

The model was used across several workshops with council officers to assess three different traffic management strategies to mitigate the impact of the



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works. In each case the model allowed stakeholders to interactively visualise the severity and extent of queuing from different interventions.

The work enabled the Council to confidently determine and communicate that the closure of a key road in the network to facilitate the works would not create the level of disruption that had been feared, and that alternative approaches which would have required a much longer (and potentially more costly) timescale for construction were not necessary. The work also identified that the closure could place pressure on parts of the network which had not been previously identified as a potential issue, enabling the timing of other works on the wider network to be managed to avoid creating problems for road users at those pressure points.

Now that the scheme is nearing completion and the most potentially impactful stages have finished, it is clear that the choices made through use of these innovative tools have proven to be effective. The scheme has been constructed with much less delay to the travelling public than most stakeholders had feared would be the case, and complaints have been minimal. This technique will be extremely useful in future for informing difficult traffic management choices in urban areas.