Dave Cope

Associate Transport Modeller

Bio

Dave is an Associate at Ridge and Partners, based in Oxford, with over 11 years of experience in transport planning and modelling. He began his career at WYG (now Tetra Tech) as a Graduate Transport Planner, where he was introduced to VISSIM within his first year, thanks to a colleague's guidance. This early exposure led to Dave assisting with existing models and soon developing his own, including a model of KAUST University in Saudi Arabia. This experience sparked a deep and ongoing interest in microsimulation.

Following WYG, Dave joined SYSTRA, where he gained valuable experience in strategic modelling. Prior to joining Ridge, he worked at PBA (now Stantec), where he collaborated with other modellers to enhance the firm's VISSIM capabilities.

Dave's recent project work, amongst other modelling and GIS projects, includes the development of an operational VisWalk and a VISSIM highway model for Oxford United Football Club, both used to assess the impact on the highway for the new stadium.

Presentation

Utilising Attribute Modifications for the assessment of a temporary route diversion for Oxford United's new football stadium.

This presentation outlines the development of a VISSIM model created to assess the traffic impacts of OUFC's new stadium proposals. Although a base network model already existed, the nature of stadium events required the modelling of extended time periods—specifically a five-hour window for both a weekday evening (18:00–23:00) and a Saturday midday (14:00–19:00).

A key modelling requirement was the ability to simulate temporary road closures and diversions occurring partway through the simulation period. To manage this, fixed routing was used alongside attribute modifications, enabling predefined diversionary routes to be switched on or

off at set times. This approach was preferred over dynamic assignment due to the specific routing controls needed.

The updated base model included cars, LGVs, HGVs, and PSVs using fixed routing and attribute modifications. Validation involved assessing link and turn volumes, queue lengths, and journey times—including bus journey times, which required data from operators provided in various formats.

One of the primary challenges was the tight timescale: the base model, Reference Case, and a Forecast model scenario all needed to be completed within six months to meet internal deadlines and support the submission of the planning application before the end of 2024. This deadline was successfully met.

Additional challenges included:

- Aligning validation data with slightly different time periods due to changes in the modelling scope.
- Converting and validating public transport data from inconsistent formats.
- Implementing diversion coding, which required duplicating fixed routes and assigning specific IDs linked via attribute modifications to precise times. The complexity and volume of data made validation particularly challenging.

- Balancing feedback and requirements from multiple stakeholders, including Oxfordshire County Council and National Highways, each with distinct concerns about the modelled network.

Through close collaboration with internal teams, external stakeholders, and support from PTV, these challenges were successfully navigated. The final model provided a robust evidence base, demonstrating the impact of road closures and diversions on traffic operations—before and after matches—and offering insight into effects on both private and public transport networks.