



User Group 2009

2009 North American User Group Meeting, 7th October, Milwaukee, WI

Venue

Milwaukee Ambassador, 2301 W Wisconsin Ave, Milwaukee, WI 53233

Agenda

- 09.45 – 10.00 Registration
- 10.00 – 10.15 Introduction
- 10.15 – 11.00 *Using Paramics to Evaluate Complex Roadway Design Alternatives*
Strand Associates
- 11.00 – 11.15 Coffee
- 11.15 – 12.00 *Paramics & Large Network MOT Modeling: I-15 CORE*
HNTB
- 12.00 – 13.00 *Update from Paramics*
- 13.00 – 14.00 Lunch
- 14.00 – 14.25 *Development of Microsimulation Guidelines at the Wisconsin DOT*
WisDOT
- 14.25 – 15.10 *OD Matrices and External Tools Development for Medium Size Models*
WisDOT
- 15.10 – 15.25 Coffee
- 15.25 – 16.35 *Pushing the Boundaries: Achieving Reality in Complex Paramics Networks*
Halcrow
- 16.35 – 16.50 Closing remarks

Presentations and Presenters

We've listed below the confirmed presentations for this User Group Meeting, this was correct at the time of publication.

Using Paramics to Evaluate Complex Roadway Design Alternatives

Kyle Henderson, Strand Associates
Madison, WI

The presentation will discuss the use of Paramics to assist in the evaluation of complex roadway alternatives. Microsimulation can effectively evaluate the interaction between intersections and within ramp interaction areas on freeways. The modeling has revealed several unique operational features including: queuing at roundabout controlled interchange off-ramps, interaction of closely spaced roundabouts and traffic signals, impacts of u-turns, and the possible benefits of gap creation at roundabouts.

Paramics & Large Network MOT Modeling: I-15 CORE

How the I-15 CORE team utilized Paramics to model at a meso-scopic level to assess MOT impacts for the design-build project.

Rob Beuthing, HNTB
Madison, WI

The presentation will cover the development of a 40-mile interstate corridor and the issues with converting a calibrated mode to include local networks of several adjacent municipalities along I-15

and the methodology to evaluate each of the three design-build team's proposals and score the results.

Update from Quadstone Paramics

Ewan Speirs, Quadstone Paramics

New product news including details of some key features in the soon to be released Paramics 6.7 and UAF 1.2. In addition, development roadmap information for the next major version (v7.0) and details of the newly formed Product Steering Group which allows visionary users of the Paramics tools to shape future development plans at the earliest stages of the development process.

Development of Microsimulation Guidelines at the Wisconsin DOT

John Shaw, WisDOT
Milwaukee, WI

This presentation will discuss the status of our effort to develop guidelines on model calibration, O/D matrix development, and related issues.

OD Matrices and External Tools Development for Medium Size Models

Ertan Ornek, WisDOT
Milwaukee, WI

Wisconsin Department of Transportation (WisDOT) is currently working on the Zoo Interchange Study which includes development of design alternatives and operational assessment of these alternatives through Paramics and other analysis tools. UW-Madison-TOPS Laboratory has been supporting WisDOT in auditing of the models and development of OD matrices for the alternatives. During the project, several MS Excel based auditing, estimation, and data extraction tools were developed. This presentation will provide a closer look at the efforts and tools used to come up with useful peak OD matrices and explain the principles behind them.

Pushing the Boundaries: Achieving Reality in Complex Paramics Networks

Chris Wilson, Simon Kinnear, Halcrow
Australia

After almost 10 years experience in the application of Paramics, the presenters will outline their experiences in the development of some of the more unusual and complex models built during those years. In doing so, the presenters will highlight some of the techniques developed to model complex traffic conditions including data preparation, network build, matrix estimation, and the judicious use of plug-ins. Case examples to be discussed follow.

Downtown Sydney Model

Halcrow have developed a Paramics model that covers the downtown district of Sydney, Australia and includes an area of approximately 2sq miles between the Sydney Harbour Bridge, The Opera House and Central Station to the south. This district contributes about 7% to the economy of Australia and the effect of congestion here causes the greatest impact to the Australian economy which is why the state government utilises Paramics to quantify impacts of network or land use changes in the downtown district.

The State Roads Authority (RTA) has developed its own successful signal control system that is required to be reflected in the models accurately. This is why the 130 signalized intersections are connected to the adaptive signal control logic using SCATSIM making it the largest application of this technology in the world.

As well as accurately reflecting the adaptive signal timings, pedestrian crossing delays to vehicles and bus stopping activity on over 150 bus routes. There is also an accurate representation of the 35,000 vehicle trips that either pass through the area or access the 120 downtown parking stations.

The primary difficulties in modelling adaptive signal control technology to grid networks is the alternative routing that can exist on a network and this is largely determined by the granularity of the matrix together with the disaggregation of the zoning system adopted.

Downtown Sydney UAF Model

Using the downtown Sydney model as the basis for coding 4 discrete areas of pedestrian activity in the Urban Analytics Framework (UAF) it was possible to examine the effects of pedestrian flow as part of Metro rail planning exercise. These pedestrian volumes were determined from surveys undertaken during the busiest weekday periods with a combined volume of almost 150,000 pedestrians being considered.

Sydney Harbour Bridge Lane Control Model

A third element to the development of Paramics models for Sydney was the need to accurately reflect the influence that the Sydney Harbour Bridge crossing has on the feed of traffic into the downtown area.

Approximately 250,000 vehicles per day cross the harbour and because of limited lane capacity, involves the use of reversal lanes to manage rush hour traffic demand.

Due to continuing growth in traffic demand, a Paramics model was required to optimize the lane management. This in turn would have a significant influence on the movement of traffic into and out of the downtown which needed to be quantified.

Reversal lanes are not easy to model in Paramics and hence the modelling process involved the development of plugins to successfully replicate the process.