

Everyone knows that travel times are impacted by routine congestion – but most navigation, route guidance, and scheduling applications don't take this into account!

Typically, speeds from posted limits or even arbitrary values by road class have been used to calculate travel time. This approach cannot be relied upon to yield a sensible time of arrival during busy periods, nor will they adjust route advice where longer but typically less congested alternatives routes exist.

SUNA PREDICTIVE provides an incredibly powerful database of historic speed profiles for roads across Australia that can provide the 'local knowledge' previously hidden from navigation calculations. This means:-

- more accurate time of arrival estimation
- commonsense travel time estimates at all times of day
- greatly improved route selection

SUNA PREDICTIVE is produced by Intelematics Australia from the fusion of hundreds of millions of speed records generated by probe vehicles and fixed sensors.

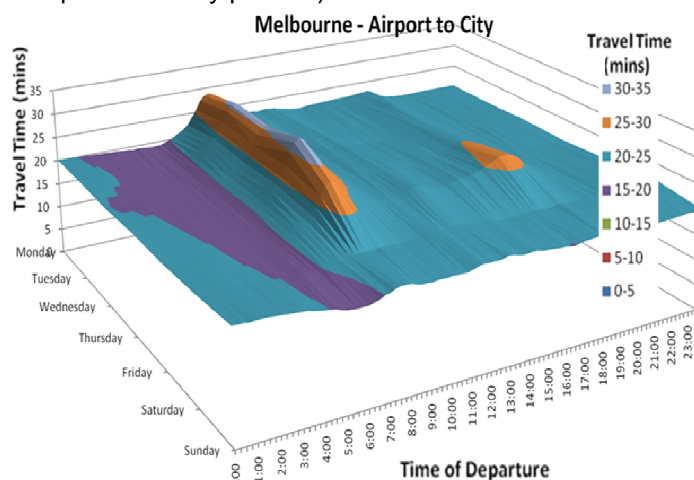
SUNA PREDICTIVE is an ideal complement to the live SUNA digital traffic information services, in particular our flagship SUNA RDS-TMC broadcast.

What is SUNA Predictive?

Suna Predictive is a database of statistically normalised travel speeds for main roads that supports the prediction of future speeds or travel times based on historical averages.

SUNA predictive provides an excellent measure of the impact on travel times of *routine congestion* that occurs as a result of excess demand.

The data is averaged by 15 minute periods for each individual road segment, for each day of week. The 7 basic profiles can be further compressed (eg weekday, Saturday, Sunday), or expanded (to differentiate school and public holiday periods).



Intended Use

SUNA Predictive data was created to address the automotive and consumer electronics industries' need to provide motorists improved routing & travel time advice in advanced navigation applications.

In addition to GPS navigation, route planning, web-based mapping, and travel time calculators, the database has significant potential to aid applications such as logistics/dispatch, traffic planning, and road network management.

Coverage

temporal – the standard format provides 24 hour speed profiles at 15 minute intervals for seven day types, Monday to Sunday. Other options can be supported:

- compressed (to 3 or 5 day types)
- expanded (separate weekday profiles for school holiday periods)

geographic – the standard product covers all mainland state capitals and their extended hinterland areas (including nearby regional centres such as Newcastle, Wollongong, Geelong, Gold Coast, Sunshine Coast), and Canberra. This coverage represents the vast majority of Australian main roads that are subject to routine congestion.

Within each coverage area, speed profiles are available for the vast majority of freeways, tollways, and main roads. Additional urban or rural coverage can be generated on request.

Location Referencing- the standard format supports location referencing using the relevant international standard ISO 14819-3 (Location Referencing for Alert-C). This permits simple integration with digital maps and applications supporting the Australian Standard location table. The product supports all referenced links.

Version 1 (SPQ1-10) is referenced against the following Australian TMC Location Table versions:

Sydney	2.3	Perth	1.1
Melbourne	1.3	Adelaide	1.1
Brisbane	1.0	Canberra	1.0

How is SUNA Predictive generated?

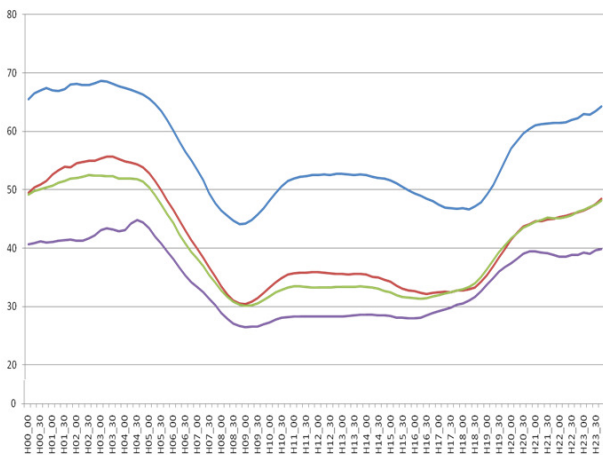
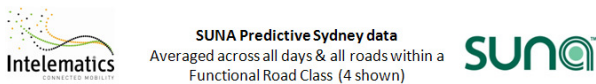
The primary data source for SUNA Predictive is hundreds of millions actual vehicle speed measurements ('probe vehicle observations'). The tendency of probe vehicle readings to concentrate on major roads during peak times ensures that predictive power is strongest where it matters most.

Using GPS speed observations as the primary data source also ensures that significant error rates are not introduced through map-matching inaccuracies (as would arise through use of less precise data such as cell-phone records). In particular, the resolution and accuracy of SUNA Predictive is maintained in dense urban areas.

Predictive Power

In major Australian cities, some 20% of the variation in peak travel times is inherently unpredictable, and of course some of these delays will be extreme. On routes operating near capacity, volatility in travel times is much higher than the metropolitan average, especially at the shoulders of peak periods.

So for real-time applications, SUNA Predictive is best used in conjunction with one of the 'live' SUNA traffic information feeds, such as SUNA Congestion Monitor or SUNA RDS-TMC.



Update Cycle

SUNA Predictive draws its inferences primarily from road network performance in the 12-14 months prior to release. As the data ages, predictive reliability will decline due to:-

- the overall trend in Australian cities toward increasing congestion
- the localised impact of road construction & other traffic management initiatives

SUNA Predictive is offered with two major releases each year, with interim releases as required. Releases will be in Q1 & Q3 of each year. For specific release dates contact SUNA.

Data structure

The product is distributed as a compressed comma-delimited text file, with content as follows:

TMC code data as CTTDLLLL where:-
 C is the hexadecimal country code
 TT is the zero-padded decimal location table number
 D is + or - offset
 LLLLL is the zero-padded decimal location code

TMC	H00_00	H00_15	H00_30	H23_15	H23_30	H23_45
301-00585	29.3	29.4	29.7	29.1	29.1	29.1
301+00587	27.1	27.2	27.2	27	27	27
301-00587	26.6	26.7	26.8	26.5	26.5	26.5
301+00589	26.8	26.8	26.8	26.8	26.8	26.7
301-00589	23.6	23.6	23.6	23.4	23.4	23.4
301+00590	23.6	23.5	23.6	23.3	23.3	23.3
301-00590	59.5	59.6	60	59.4	59.3	59.1
301+00600	24.9	24.9	24.8	22.8	23.1	23.6
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Time in 15 min increments Average speed over 15 min interval

File name would indicate Day Type, TMC Country Code (indicating Australian State) and Location Table Number.

Licensing

A range of licensing options are available, contact Intelomatics for full details.

Related SUNA Products:

- SUNA RDS-TMC – A standards-based broadcast service that broadcasts digitally encoded TMC traffic data using FM radio digital subcarrier (RDS).
- SUNA XML-TMC – Internet feed that delivers TMC encoded traffic data for use in web & wireless apps.
- SUNA Congestion Monitor – Internet feed providing live, detailed road-by-road congestion levels across capital cities.
- SUNA Congestion Monitor (probe) – similar to standard Congestion Monitor, but eliminating data derived from public infrastructure (fixed sensors).
- SUNA Reporter – text based simpler traffic feed using XY for location for use in web and mobile applications

For other information relating to SUNA Predictive, please contact us at enquiry@sunatrafic.com.au or by telephone 03 8415 9000