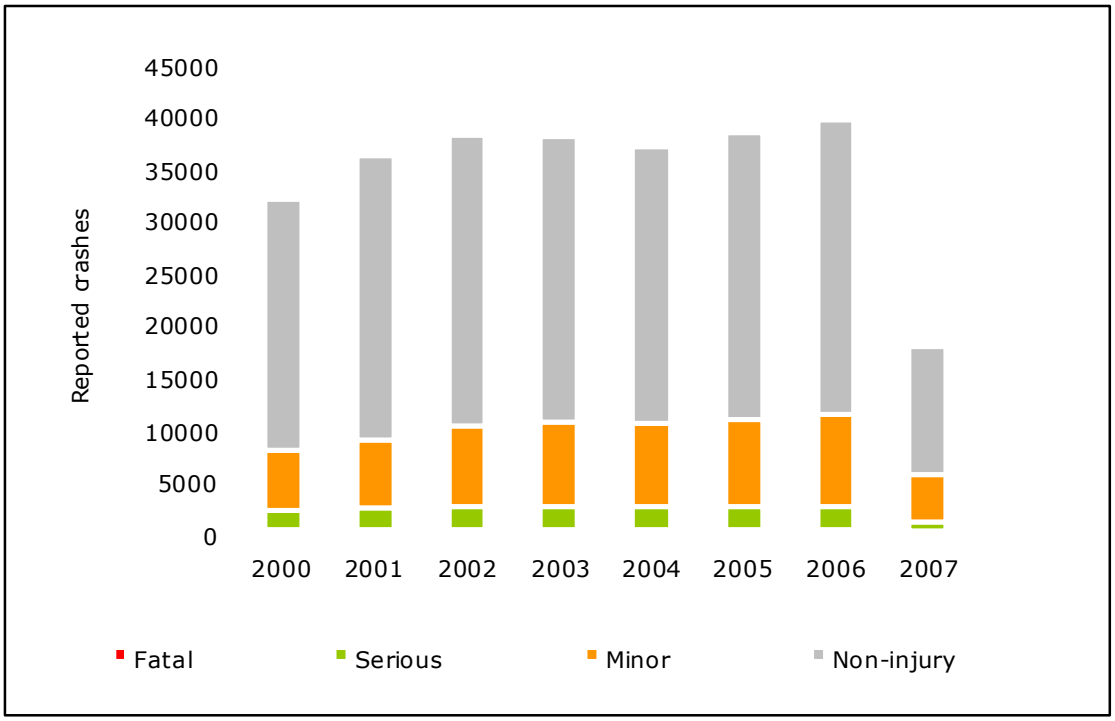
Land Transport New Zealand
Crash Analysis System Data

Introduction:

Land Transport NZ is responsible for maintaining a record of traffic crashes in New Zealand. The organisation uses the Crash Analysis System (CAS) to record and analyse crash statistics. CAS was introduced to the Roadmarking Industry Association of Australia Conference in 2000. This presentation will show how this system has become an important tool in New Zealand's efforts to reduce our road toll and will demonstrate how the system can be used to identify locations on our roading network where new or improved road marking products have the potential to reduce crashes further.

Crash Reporting

Crash reporting is carried out by the New Zealand Police who then forward a copy of the information to Land Transport NZ for processing. Since the year 2000 almost 280,000 crash reports have been added to the CAS database. Over 76,000 of these were injury crashes where 106,787 people were injured.



Crash Report Processing

When the report is received by Land Transport NZ the essential information is checked to ensure it is complete. The description and factors relating to the crash are then coded using a standard set of movement and factor codes.

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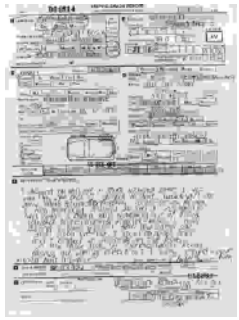
This allows the crash to be recorded in the database, where it can be statistically analysed and manipulated to generate a large number of reports, listings, tables, maps, graphs etc.



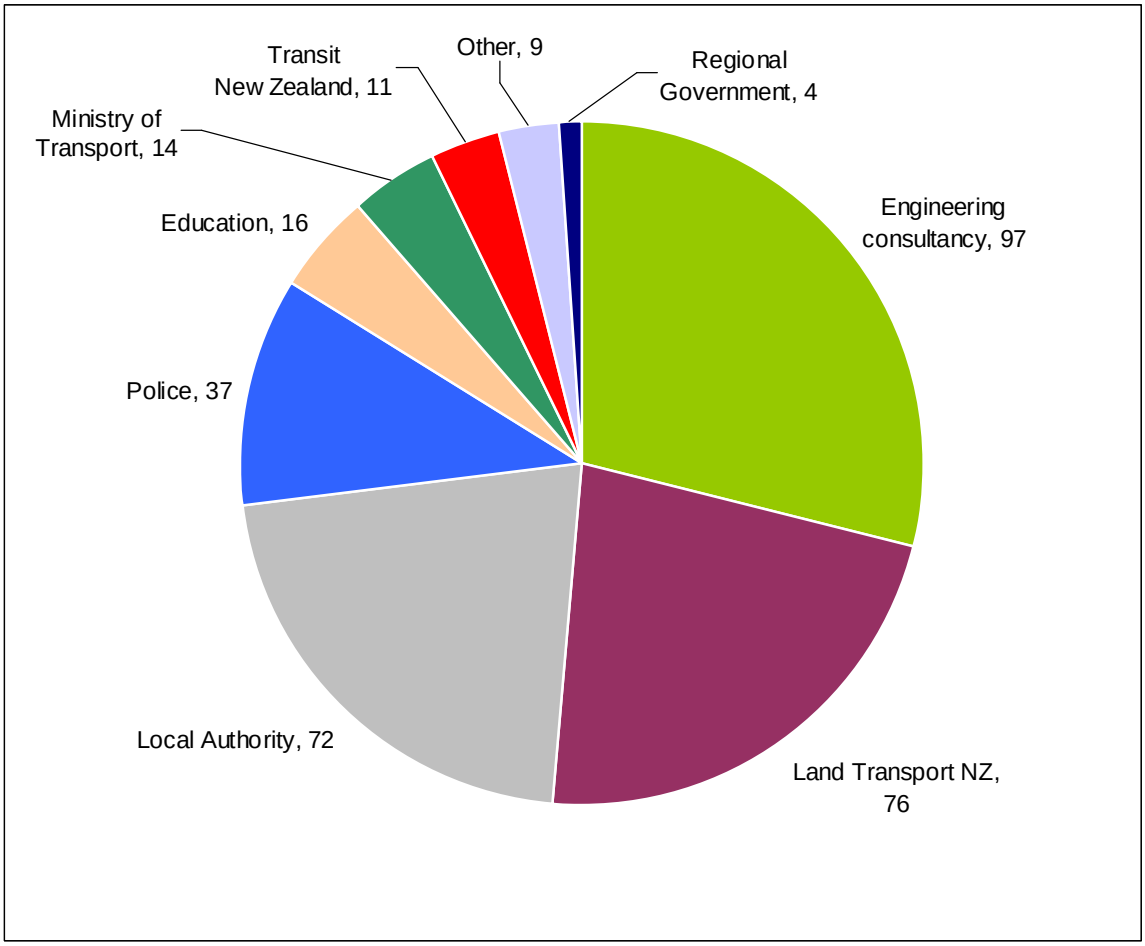
NZ Traffic crash report

When the crash is entered into the database there are a large number of data entry checks carried out before it is saved. Once saved it is then geocoded. This is a process where the geographic location of the crash is calculated. Other automatic processes occur at this time.

Once entered into the database the crash report is scanned for future reference.

Crash Database

The CAS database was made available to road controlling authorities, traffic engineering consultants, New Zealand Police and other road safety partners in 2003 and a series of training workshops were held throughout the country. CAS is supplied by a secure internet connection and has 336 current user licences.



Current CAS users

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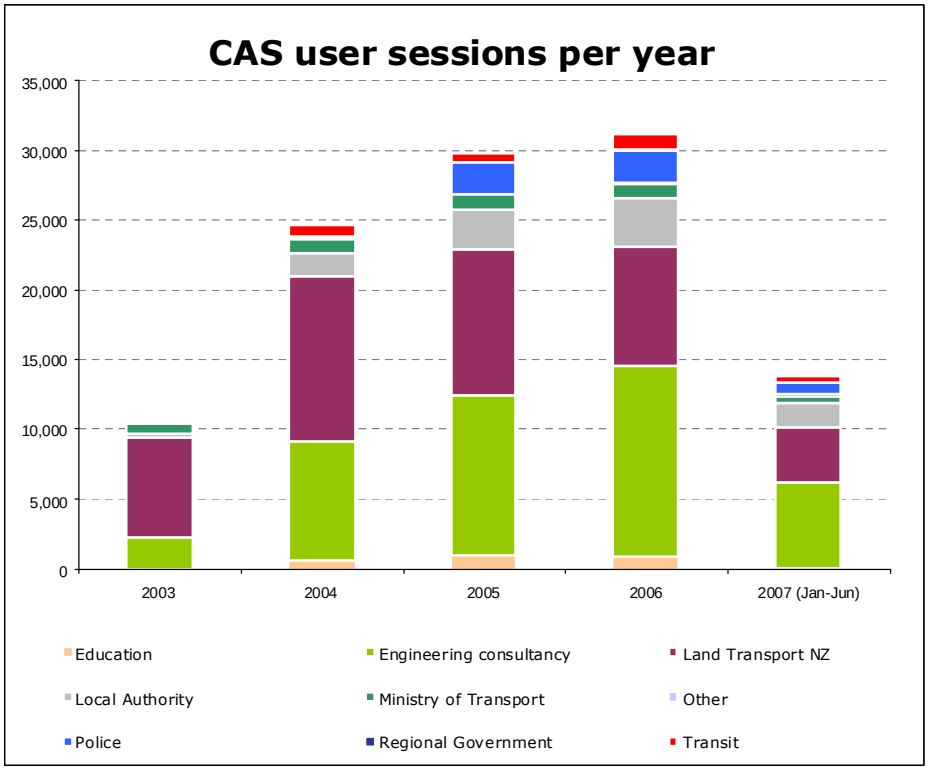
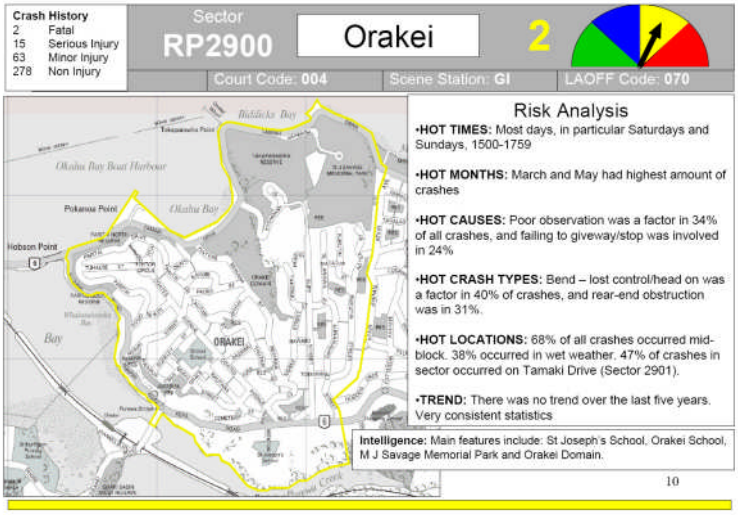
It has been very pleasing to see that the use of CAS has been steadily growing in New Zealand. Engineering consultancy firms are the biggest users, accessing CAS 13,600 times in 2006.



The New Zealand Police have been using CAS since 2005 to assist in the development of risk targeted patrol plans and for creating crash books and beat sheets. Crash books identify high risk crash areas and provide details of common crash types, factors and times.



Information on CAS is available on our web site at:
http://www.landtransport.govt.nz/research/cas/index.html

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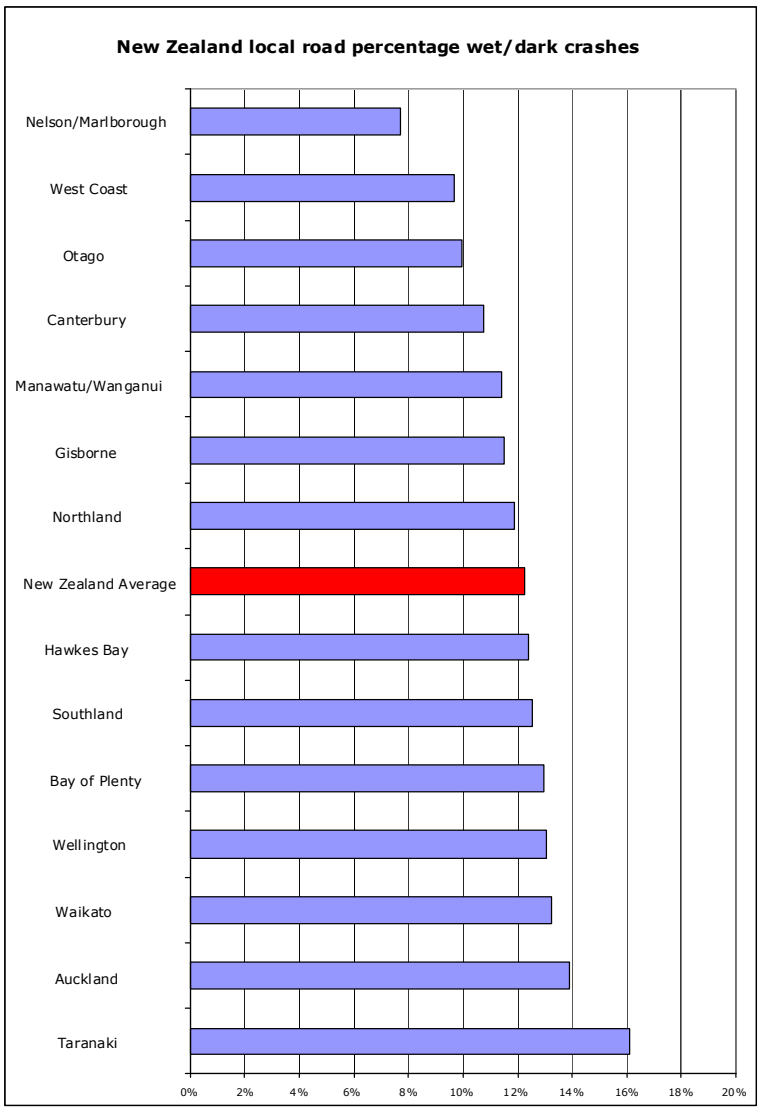
Using crash data to target new products
CAS Demonstration

There is considerable potential for the CAS database to be used to identify areas or sites where safety may be improved by the introduction of new and innovative road marking materials or methods.

Products have been specially developed to address specific problems. A good example of this is profiled edgelines, which can be used to reduce loss of control crashes in wet and dark conditions. CAS can be used to identify potential treatment areas from a national to a micro level.

National level

A national search of local road crashes where the speed limit is open road can be analysed to rank regions by the percentage of crashes occurring in the wet or dark.



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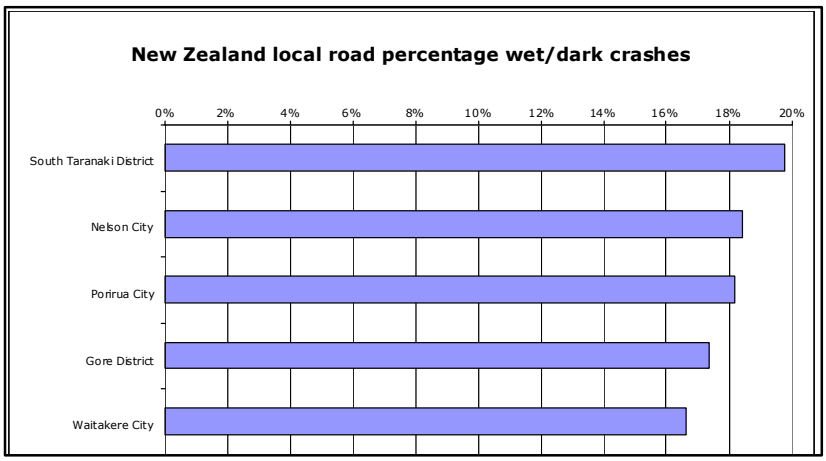
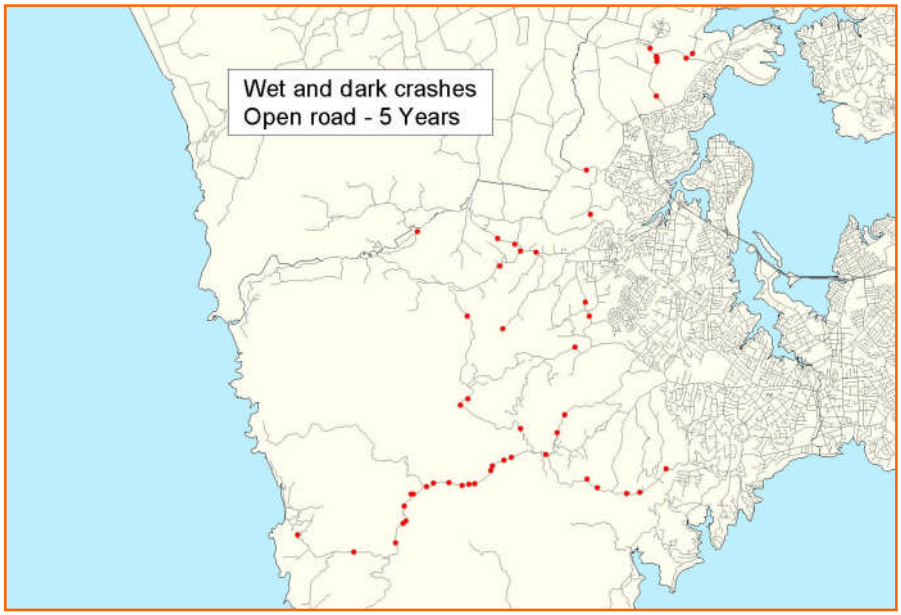
The same analysis can be done at a local body level so that individual local authorities can be identified:

Note: Caution is needed if numbers are small



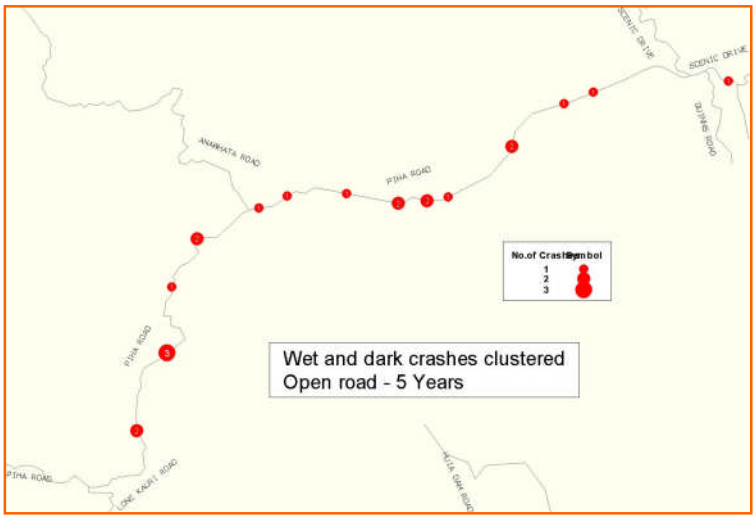
Local Authority level



By selecting and mapping open road crashes in wet or dark conditions it becomes very easy to identify routes that could be considered for mass action treatment.

Route Level

Crashes can be grouped together to identify clusters of crashes, details such as road names can be displayed at this level:



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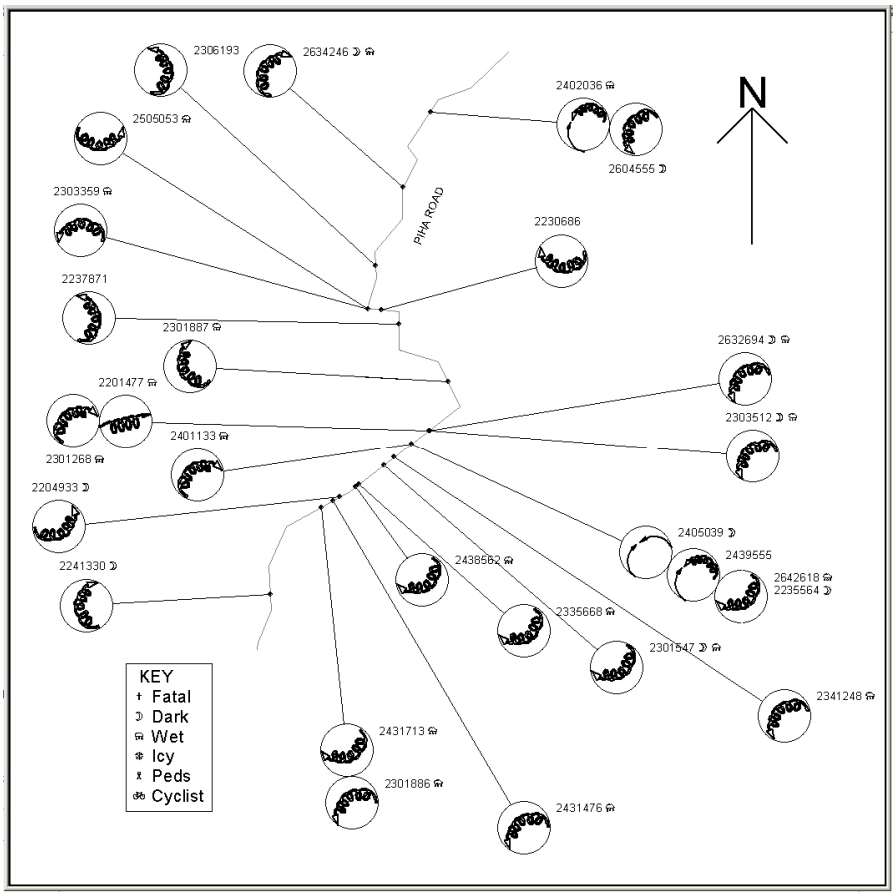
For more detail CAS can produce a collision diagram which illustrates the location and crash type of individual crashes.



This is useful if it is planned to treat specific locations on a route.

Other examples will be demonstrated at the conference and if possible a live demonstration of CAS will be presented.

Conclusion

Land Transport NZ is justifiably proud of the Crash Analysis System and is very pleased with it's uptake by our road safety partners since 2003. We remain committed to continually developing and improving the database to meet our own needs and the needs of New Zealand's road safety community.

We have learnt early on that making the information contained in this database easily available to our road safety partners and providing appropriate training in its use helps make the best use of this valuable resource and improves road safety in New Zealand.

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