

**MINUTES SNUG Conference
Rutherford Hotel, Nelson
12-13 November 2009**

Ross Thomson opened the 2009 SNUG conference by welcoming all participants and thanking sponsors for gifts, morning tea, lunch, dinner and drinks. He extended a special welcome to visitors from overseas.

MATTERS ARISING FROM PREVIOUS MINUTES:

TMU Traffic Signal Design Document: On website and available for users.

Red Light Running: On the agenda for today's conference.

Flashing Yellow Arrow Trial: Trial was intended for Auckland North Shore but did not proceed due to legal and other issues.

LTNZ – Left-turn versus U-turn conflict: Bob Gibson has not had time to investigate further.

Safety Audit Update: Ian Appleton to speak further to this item but could not be present;

RTS14: Revised version has not been finalized.

Signalised Roundabouts: Barbara Chard will talk further to this item during the conference.

Guard Rails: Trial took place at Brookfield. There were issues with obstruction of vision so that every second bar of the rail had to be removed.

NZTA Updates, TCD Rules, etc: Bob Gibson was to provide update but has had to present his apologies for this conference.

GTEP Part 7: Part 7 is still in use but can no longer be purchased. Replaced by a new series of guides. Web based. Advised to check ARRB and Austroads websites.

Road User Rule – Use of Cell Phones: Legislation banning the use of hand-held cell phones during driving has been passed and implemented.

Cyclist Boxes: these are dealt with in the TCD rules.

Give Way Rules: The proposal to change Give Way Rules has been widely discussed and researched by various authorities and indications are that changes will be implemented next year.

Manual – NZTA/MOTSAM: These two organizations will operate under one name. A Steering Group has been established to see this initiative through. Much work has been put into this project including a review of the manual and work is still in progress.

Colour of Traffic Signal Poles: There seems to be no standard practice and in some centres poles appear to be painted in whatever colour is fashionable although there is a legal requirement for them to be either yellow or grey.

Portected RT's at Signalised Intersections: Preliminary studies based on numbers of RTs versus pedestrians. Results not yet finalized.

Maximum green time for Right Turn phases with predominant HCV's: Further to Ann Fosberry's presentation at the last conference during which she raised her concerns, the problems have now been addressed.

Median Pole Treatment:

Collapsible traffic signal poles: There are situations where these poles are a distinct advantage, for example the traffic management of V8 in Hamilton where signals need to be taken down or put up during the event and the process then reversed after the event. Guidelines to be placed on SNUG website on how to pull out these poles and re-install them in minimum time. (Ross Thomson/Shawn Peterson)

Auckland Motorway Ramp Signalling Update: On the agenda for this conference.

Staggered Pedestrian Crosswalks at Signalised Cross Intersections: Some trials revealed that there was a higher level of service in one direction but not the other. Centre-of-the-road waiting area is not considered safe; also unpleasant in bad weather conditions.

However, staggered signalised intersections are up and running in Auckland and Albany and feedback from these is positive. Christchurch has implemented two and Invercargill one and these are working well.

There were no questions relating to the previous minutes. The minutes were confirmed.

DAY 1:

SCATS PRODUCT AND LICENSING ISSUES; Steven Shaw, RTA

Steven Shaw spoke to the following topics:

- SMUG Conference in Australia;
- SCATS and ancillary software licensing issues;
- SCATS generations 6.7.1 and 6.8.1

- Recent SMUG conference in Australia: only one attendee from New Zealand. Steven Shaw stressed the importance of SCATS users attending these conferences in order to remain informed of all matters relating to SCATS.

- Licensing issues: Since the introduction of SCATS, its commercialisation and worldwide distribution major licensing issues have emerged relating to both SCATS

and other PC based SCATS software. In many ways the commercialisation has caused RTA a number of unforeseen problems. One of these is that users have passed SCATS software on to consultants and other commercial companies contracted to work with them. ATC has distribution rights for SCATS and initially sold to end users only. But the distribution has gone beyond end users. RTA is concerned that other parties might be using the software for the wrong reasons. The Internet Protocol of RTA has to be protected. In order to streamline licensing procedures including the use of SCATS software by third parties, RTA have asked their lawyers to revise all licensing documentation and to draft new documents so that proper licensing systems can be put in place covering all aspects of end user, dual licensing and third party licensing agreements. This overview will also include licensing agreements for controller manufacturers. The intention is to streamline distribution and access of SCATS and ancillary software so that all parties will benefit and have a clear understanding of rights and obligations. This work is currently in progress.

- New versions of SCATS: There will be major changes to the database; this means upgrades must happen in the correct sequence. Users who experience problems with the installation of the new generations should contact RTA. The long term objective is to have just one version of SCATS operational.

Questions:

Any indication on pricing structure for the licences?	Not yet
Will licenses be sold in blocks smaller than 16 for smaller countries :	Will be looked at as part of the revision on licensing .

Licenses for New Zealand organisations are all up-to-date with the exception of two. A new SCATS website is in the process of being designed. Due to go live in a few weeks. It will contain all information on SCATS; it will have links to distributors and controller manufacturers’ websites. This site will have a range of features, for example: SCATS Help:

Will act as a HelpDesk for all SCATS and TRAFF related issues. (Will only be available to users with a valid maintenance contract).

VIEWSUITE

RTA own IP. Are developing new software.

SCATS Optimisation

Stage II of the website design will provide for on-line technical support so that users will no longer have to go through the SCATS HelpDesk. There will also be forums as well as on-line training courses.

RTA would appreciate feedback on the site once it is live.

Release dates of new SCATS versions:

- 6.7.1: July 2009
- 6.8.1; June 2010 Changes to all ancillary applications and software
- 6.9.1; June 2011

Steven Shaw reiterated the importance of installing new generations in the correct sequence.

Questions:

Licensing: consultants and other commercial companies are contracted by local authorities help them with work involving SCATS. They therefore need access. Dual licensing requirements will create problems.	These are the kind of issues RTA need to know for further consideration.
Possible solutions: On-line use versus off-line use? Licensing registered by PC ? Validate laptop ?	

SCATS 6.7. AND 6.8 FEATURES: Andrew Mehaffey; Traffic Systems Applications, RTA

Andrew Mehaffey commenced his presentation by asking how many organisations have converted to SCATS version 6.7 and what were the problems encountered.

Brendon Tong, Whangarei DC: conversion was relatively easy although they had some installation problems with the dongle. Also some technical issues with installation on Windows 2003 server.

ACTION: Brendon to send Bill guidelines on how these issues can be overcome.

Andrew went on to outline the new features of version 6.7. Some of the points made are summarised as follows:

- New ITS message for subsystems;
- Area names in ITS messages;
- Security patches;
- Bug fixes re access levels and reconnections;
- New ITS message for subsystem states;
- Security patch for central manager;
- Primary change subsystem rotation fix. Now subsystem option called SR. Improves short green time operation. Recommend SR and SO options to be used.
- Also introduced FN (forced no skip) site and region option.
- New dongle driver for Vista (Windows 7);
- PD option added to VR34;
- No longer NS + FS;
- Review VR34 after 6.7 installation;
- Unused phase time no longer added to Greentime Store unless the phase was allowed to gap;
- VAX limits are increased;
- same as no VAX
- Extra items are hidden from VAX

Bug fixes were also undertaken.

Further new features:

- SR subsystem rotation;
- SO site option;
- Locks and dwells dialogue;
- ITS names dialogue;
- PD option;
- VR34

SCATS version 6.8 has 50 new features and functions; some of these are:

- Increased use of Central Manager database;
- New region configuration;
- SCATS data;
- TRAFF VC6 changes;
- SM + VS data;
- SM and VS data still being supported.

New Security Levels

- Additional security levels on top of the SCATS privilege level:
- Level 1: full access;
- Level 2: limited access;
- Level 3: not yet in use;
- Level 0: no access.

- Secure route pre-emption plans;
- Central Manager can now have a “System” name – displayed on title bar;
- Optional fault printer and event printer;
- Records are written to a file;
- Data changes now log the old data;
- Sites can be allocated to a zone;
- User access can be defined on a zone basis.

New locks:

- SIGNX – string;
- Commands read from file;
- User commands from an ITS application;
- Special facility alarms now log which flag caused the alarm;
- Variation routines are now objects;
- Each routine has its own “special flag”;
- If a routine has been deleted, that can now be ‘undone’;
- International language support;
- Allows creation of multiple items;
- Action List Editor tests for errors in syntax;
- Up to 64 control zones;
- Allocation of a site or subsystem to a zone;
- Dynamic variation routine display;
- Ability to remove all locks/trims of the same type on region.
- A system name can be displayed in CM window;

Strategic input editor dialogue;
Time/Distance diagram;
TRAFF changes V6

New features:
Ensure TRAFF utilises capabilities of existing TSC;

Changes:
VC=6
VOLS=48 from 24 to 48 detectors (input)
From 24 to 32 signal group;
SCATS graphics also altered.

Questions:

Can region scheduler be altered to fit the full Window screen ?	Yes, work has been done on re-sizing Windows. Window data will also be printable.
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SCATS COMMUNICATIONS; Andrew Mehaffey, RTA

Andrew Mehaffey spoke to:

- SCATS PAPL network replacement project;
- PTIPS;
- TRANSIS;

SCATS PAPL network replacement project:

Andrew followed up from last year's conference during which it was reported that Telstra would cease to provide the current PAPL service. Since then RTA have initiated a SCATS PAPL Network Replacement Project to identify a suitable replacement technology and to deploy this solution as a replacement for all 2,600 sites. The new arrangement is very complex and already behind schedule so that negotiations are currently underway with Telstra to extend the deadline.

Physical equipments issues;

RTA have identified several possible solutions for the way forward:

MicroConnect;
ADSL (Asymmetric Digital Subscriber Line);
IP Remote

It was noted that New Zealand organisations may face the same problem in the future with Telecom. Alternative technologies were muted, one of them was radio wireless.

SCATS Products:

PTIPS (Public Transport Information Priority System)

Andrew gave an update on expansion, enhancements and recent activities in connection with PTIPS. He elaborated on the functionality, software features and capabilities in terms of data input and output.

PTIPS offered benefits to the public in terms of timetabling information, and to authorities and bus companies in terms of route performance, bus history, time distance and tracking against timetable.

Question:

<p>What are the costs, including set up costs of PTIPS.</p>	<p>No clear answer. One of the major costs lies in obtaining clean data from bus companies and authorities. The data management side is cost intensive. The product is not yet for sale. Waiting for it to be fully operational. However, RTA are open for discussion.</p>
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TRANSIS - Transport Information Server

This software provides clients with real time information on traffic and transportation. It picks up data from SCATS, TIRF and other ITS systems; Andrew gave an overview of the data that was currently available through TRANSIS.

SCATS COMMUNICATIONS; Ken Lee Jones; North Shore City Council; Michael Daley; Signal Consulting Ltd

Ken Le Jones’ presentation focussed on research and trial of alternative solutions in the event that Telecom decides to ‘grandfather’ analogue lines. Early research would help make an informed decision when the time came.

Alternative solutions were assessed in terms of the following solution requirements:

- Equipment removal;
- Maintaining SCATS performance;
- Speed;
- Latency
- Network availability;
- Cost;
- Support maintenance;
- Scalable future growth.

Of the various options considered the preferred option is:

WAN generic managed ADSL (Asymmetric Digital Subscriber Line)

Main benefit: security of service, economies of scale

Mathew Boyle gave an overview of the ADSL managed service.

Another alternative technology solution that was considered is Fusion.

New SCATS server at ATTOMS;

Run in parallel with NSCC;

Prepare signal boxes;

Two trial sites in parallel;

- Telecom – Gen-I;

- Fusion

Big cost differences between the two
Showed results of testing on Fusion schematic

Ongoing work to do:
Cut over and monitoring of 70 signals;
Complete by June 2010;
Trial camera video feed;
Cost comparison;
Product comparison;
Reliability;
Decommissioning NSCC server;
Relinquishing Telecom based analogue lines.

Mathew concluded by stating that the trials undertaken by North Shore City Council will be of interest to all SCATS users in New Zealand in the event that Telecom cancels LDC's.

Questions:

Were there coordinated sites ?	One
Was a remote site used ?	Yes, in Warkworth

In all instances and whatever technology is finally being decided on, the advice is to monitor the transition very carefully.

SAMOA SWITCH: Changing from RHS to LHS Driving; Ross Thomson; UTD

On 7 September 2009 Samoa switched from RHS to LHS driving. Ross Thomson was involved in the preparation and switch over. He outlined the planning phase, the switch over and the post switch over phase. Some of the points mentioned were:

10 traffic signal sites were involved;
New road markings were necessary as well as an upgrade of all TS hardware;
Materials were hard to obtain and had to be shipped over from NZ;
Ross showed video footage of sample intersections before and after switch over;
Not much pedestrian protection; some improvements were made in conjunction with the switch over;
Storm water drains are located in the middle of lanes;
Pedestrian protection which was virtually non-existent and low priority;
Very high road curbs (necessary during storms with heavy rain);
Diamond phasing not suitable – simplest solution was the preferred option.
Fall back plan of split-side road phasing; preference was for split-side phasing over combined phasing;
Government ran a publicity campaign in preparation for switch over;
No alcohol was sold 2 days prior;
2 day public holiday was declared;
In the first week 3 policeman were present at each intersection;
Practice facility was available by sports stadium;

Bus exit doors had to be changed to the other side of the bus before they were allowed back on the road

All in all a very interesting project and well planned by the local authorities.

Questions:

How was the simultaneous switch-over coordinated ?	One coordinator was present at each site.
How was the switch-over project funded ?	Asian Development Bank

AUCKLAND RED LIGHT CAMERA TRIAL: Sarah Stephen – Ron Philips; Police Calibration Services, Wellington

This project is being trialled in Auckland. Government is currently considering whether to proceed with the installation of red light cameras. The cost is approx \$100,000 per site.

Ron Philips made the following points as part of his presentation:

- 10 sites are being trialled based on crash history;
- All sites had to be upgraded in preparation for the trial;
- The police test all equipment to specifications;
- The following factors had to be taken into consideration at each site in assessing the viability of the project:
 - Traffic interruptions;
 - Trees obstructing camera vision field;
 - Limit lines;
 - Traffic lights had to be on normal phasing;
 - Light emitting Diode types; sun brightness factors impacting on strength of signal;
 - No bus stops allowed near camera;
 - Poles had to be at 2.5m height;
 - Camera must be lowered not tilted;
 - Poles not permitted under shop verandas;
 - Must have clear picture of T-lights;
 - No more than 4 lanes;
 - Clear view overall;

Site Layout Design:

- What to survey and measure:
 - Number of lanes;
 - Kind of lanes;
 - Width of lane;
 - Width of footpath;
 - Location of signal pole;
 - Trees that may obstruct camera view;

The positioning of the red light cameras was important to prevent light from blinding drivers;

No front view shots for privacy reasons;

Sarah Steven presented screen shot of base drawing and explained details of installation and procedure in photo sequence. The camera only ignites when traffic light is on red. On the trial site at Symonds Street/Grafton Road the cameras showed an infringement within 2 minutes of being activated.

The following work had to be done before approval of the trial could be obtained:

Police Calibrations Services had to design and build all test equipment;

They set up Auckland airport test site for 2 red light camera intersections;

Temporary traffic lights and camera poles had to be especially manufactured for this site; all had to be removed after the test;

Laboratory test equipment had to be designed;

The cost of this operation amounted to \$200,000.

Questions:

Were cameras placed to observe central medians as well ?	Yes
Could fines be used to help with the funding ?	This is a policy matter.
Was the duration of the trials long enough to obtain reasonable statistics ?	Yes, statistics indicated that red light cameras are effective.

AUCKLAND RAMP SIGNALLING UPDATE: Leon Wee; Garry Lee; NZTA

Leon Wee updated the meeting on progress regarding the Ramp signalling project which began 5 years ago. After funding was secured work began on the southern motorway taking 2 years to complete. The project is now focussing on the northern motorway. Ramp signalling will eventually be applied along the length of the whole motorway network.

The project was awarded “Project of the Year” for 2008 by the Project Management Institute.

Leon outlined some of the key outcomes:

More predictably consistent and faster travel times once on the motorway;

Reduction in peak times and increase in minimum travel speed;

Increase in motorway throughput by an average of 15%;

Reduction in rear-end crashes;

International statistics show a crash reduction of 24%; more data is required for a fuller evaluation of the trend in New Zealand;

Environmental benefits in terms of lower petrol usage and greenhouse gas emissions.

Garry Lee then reported on the case study conducted on the southern motorway, ie Ellerslie/Panmure Hwy/south; eastern Hwy/ Mt Wellington Hwy. He presented statistical results and diagrams with particular reference to:

Ramp algorithm managing total flow;

Bottleneck traffic conditions before and after comparisons;

How efficiencies were achieved;
 Mainline and ramp flow during peak hours before and after signal operation;
 Higher recovery at end of peak periods;
 Reduction in peak hour congestion times;

In terms of goals and targets:
 On ramp throughput has improved;
 Increased motorway throughput by 15%;
 No adverse effects on arterials;
 Compliance at ramp signals is better than at intersection signals;
 Savings of 23,688lt of petrol per day.

Question:

Does ramp signalling encourage red light running ?	In general compliance is better than at normal intersections
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TIMARU BARNES DANCE TRIAL – TEMUKA TRUCK ROLL OVER; Brian Ward, FivePower Systems

Brian Ward reported on the Timaru Barne Dance trial, Stafford Street, Church Street intersection which covered a period of 12 months.

NZFB was consulted about setting up the trial;
 Publicity stickers were distributed and displayed to advise the public;
 Configuration: Ped phase 19 seconds, vehicle phases 15-20 seconds.

Outcome:
 Jay walking was reduced;
 Good traffic flow;
 Effective at intersections with shared lanes, turning vehicles;
 No complaints were received from either pedestrians or drivers about long waiting times although there was congestion at times;
 Successful outcome rests in the red phases

Question:

Did trends develop whereby drivers began to avoid the intersection ?	Not noticeably. Traffic volumes did not change during or after the trial
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Temuka Truck Roll Over

Brian Ward explained the reason for the reference to Temuka:
 - A small township in the central South Island;
 - One of the main through roads has an S-bend at the top end of the road;
 This bend became a concern when truck roll overs started happening;
 An advisory team was set up to look into this issue.

Recommendation:
 Installation of 2 rectangular detector loops;

Sign would go on under certain conditions;
Message: "TRUCKS SLOW DOWN"
Features:
VMS sign powered by streetlight circuit to battery;

Outcome:
No truck roll overs since the installation.

Shaun Peterson, Hamilton City Council, has a 40-50 page document on Vehicle Activated Signs. Anybody interested in this document can contact him.

TRAFFIC SIGNAL ASSET MANAGEMENT; Tim Elliot;

Tim Elliott thanked the Whangarei District Council for providing information and data on their traffic signal asset management module. He described the system referring in particular to the traffic signal tables and the database management:

- covers 22 sites;
- number of controllers;
- asset condition and age;
- individual asset hours;
- individual components and their value;
- able to value all assets including, for example, cabling;
- the data is used for financial modelling, forecasting, testing, renewals and upgrades;
- Indication of how many new controllers per year need to be planned for based on data input;
- Asset replacement costs have been calculated individually with an itemised calculation allowing for cabling, ducting etc;

There was general discussion on RAMM:

- which RCAs used RAMM ?
- whether the traffic signal table in RAMM was used:
- how were the traffic signals valued ?
- at the controller level or
- down to the individual asset level (poles, detectors, cords, cables).

DISCUSSION ON CAPITAL WORKS HAND OVER; Mark Walker, NZTA

This presentation focussed on the contracts used for capital projects and the protocol for subsequent hand over to the maintenance contractors.

Generally NZS3910 is used for project delivery;
It covers such aspects as construction and completion, defects liability and details of maintenance contractor.

A range of issues were identified by the conference group in relation to maintenance hand over after completion of project:

It is not always easy to find out who the maintenance contractor actually is;

When should hand over occur ?

Maintenance defects liability and warranty liability are two different matters;

What are the conditions and guidelines for a successful hand over to the maintenance contractor?

How far does the warranty period extend ?

Traffic signal maintenance contracts tend to be quite expensive;

Traffic controller manufacturers often end up maintaining or repairing equipment beyond the contract period;

Contracts can differ widely, that adds complexity to the issue.

TMU are in the process of drafting hand over documents and Mark will take the points raised at this conference into account.

Ross Thomson closed Day 1 at 5.15 pm by thanking GHD for sponsoring the lunch; he also thanked all those who gave presentations.

A G E N D A D A Y 2:

Ross Thomson opened Day 2 by thanking TSL/ATC and CSL Traffic for sponsoring the previous evening's pre-drinks and wine on the tables.

There were some slight changes to the sequence of items for the agenda on Day 2.

LinSig – NEW FEATURES AND COMPARISON WITH TRANSYT; **Barbara Chard; LinSig**

Barbara Chard opened her presentation by giving a brief description of LinSig software. It is a software tool for optimisation modelling and models traffic signals and their effect on traffic capacities and queuing. It also optimises signal timings to reduce delays or increase capacity at junctions or groups of interlinked junctions.

The LinSig software is almost identical to TRANSYT (Traffic Network Study Tool). She has worked for both companies.

Barbara outlined the features of the latest version of LinSig, (LinSig 3) and showed screen shots of typical junctions in the United Kingdom where LinSig optimisation modelling had been applied. Some of the version 3 features she described in connection with the screen shots were:

Traffic flow matrices; junctions can be built separately and then merged; new configurations can be added and merged;

Multiple controllers: LinSig 3 has the ability to model multiple controllers within a network;

Pedestrian modelling: modelling pedestrian delays and linking through each junction;
 LinSig Paramics: a new toolkit in the design of junctions; it allows the junction to be filled with a visual and also records what it is doing;
 Network Modelling: allows for lane-by-lane modelling; can also increase size of network to be modelled;
 Signalised roundabouts: LinSig 3 offers further streamlining in the design process;
 Many similarities between LinSig and TRANSYT

Barbara went on to show screen shots of junctions in New Zealand where LinSig optimisation modelling has been applied:

Welcome Bay roundabout

Brookfield;

Maungatapu roundabout;

- Connected to SCATS but not controlled; SCATS gives remote monitoring;
- New Zealand traffic controllers are phase based not Stage based.

Ross spoke further to his involvement with the LinSig project in New Zealand and explained how some of the problems experienced were solved (eg FlexiLink).

Questions:

How often do changes to the plan need to be made ?	This is movement based. Tauranga, for example, will most likely have to be upgraded to a new plan after 3 years.
Why are controllers from different manufacturers used ?	All use different specs which can suit different purposes.

SIGNAL OPTIMISATION MODELLING; Susan McMillan; NZTA

Susan McMillan spoke about signal optimisation modelling with reference to the following points:

Transit and LinSig modelling;

Optimisation process;

Optimisation measures;

Evaluation of data before and after;

Auckland traffic sites where signal optimisation modelling has been applied;

The role of SCATS in optimisation;

A project in Hamilton showed good results for restricting side road phases.

One of the advantages of modelling is that the phases can be changed.

There was general discussion on optimisation modelling with particular reference to:

- on-site observation;
- adaptation of SCATS.

TRAFFIC SIGNAL DESIGN GUIDELINES; Dan Marsh, NZTA; Andrew Metge, GHD Limited

The procedures and standards in the Guidelines aim to create consistency, efficiency safety and high standards for the installation and maintenance of controllers at

intersections. The Guidelines can be accessed through the SNUG website. The last call for revision of the Traffic Signal Design Guidelines was in October 2007 and the time has come for a further update to ensure the guidelines are up-to-date and contain all information required by the users.

Dan Marsh and Andrew Metge opened discussion by asking attendees for feedback on:
 What information should be included in the Guide;
 Topics to consider for the revision process:
 Hardware (cabling/ducting, lanterns, detectors);
 Cyclist facilities;
 Pole positions;
 Loops facilities;
 L-T arrows;
 R-T filtering
 Staggered crossings and intersection;
 Software capabilities;
 Signalised roundabouts;

The following questions were raised / comments made in this respect:

How does the document related to the decisions making process. for example on whether to purchase LinSig or another optimisation software package ?	The purpose of the document is to offer guidelines; it makes no recommendations on the purchase of particular software or hardware.
How does Austroads Part 7 interact with the larger guidelines?	For the purposes of cross referencing. The intent is for the various documents to cross references rather than create duplication.
Guidelines of testing software ?	These will be treated separately. Guidelines on how to write software are already included.

Guidelines on Asset Management need to be extended and completed;
 The RAMM database needs to capture all information on traffic signals;
 For example:
 Number of controllers;
 Asset condition and age;
 Asset renewals (controller has a lifespan of approx 15 years);
 Indication of how many new controllers per year needed to be planned for based on data;
 Asset renewals (renewal rate 15 years);
 Asset replacement costs calculated individually with an allowance for cabling and ducting etc;

Discussion can then take place with RCAs to determine level and expense.

Participants were asked to provide any further comments or suggestions through the SNUG website:www.ipenz.org.nz/snug/tsignal07.htm.

THE FUTURE OF TRAFFIC SIGNAL CONTROLLERS; **Bruce Kassir; NZTA**

Bruce Kasir's PowerPoint presentation covered:

Definition of the traffic controller;
History of traffic signals and their development from mechanical to electronic;
The TSC4 Controller was developed by RTA in 1999;
The 3 manufacturers of the TSC4 are:
Aldridge Traffic Control;
QTC;
Tyco Traffic
Specifications of the TSC4:
Functionality provided by TRAFF software;
Deficiencies:
No traffic performance data;
Closed system; does not allow for modifications by users;
No additional functionality to control external devices.

In terms of future requirements, some of the points put forward were:
New technology is moving fast;
How does new technology affect current traffic control algorithms ?
Continued use of same personality requires highly skilled staff;
Need of new automated testing systems;
TSC4 does not adapt easily to new hardware components of the Telecom network;

Bruce outlined specifications for future controllers:
Fast communication with input and output devices (fibre, Ethernet, wireless);
Extra low voltage;
Access to controller operational data via the web;
Ability to download personality;
Stand-by power supply;
Phased-based controller;
Doubled number of phases;
Speed detection;
GPS for locating emergency vehicles;
Vehicle classification;
Changeable speed sign near schools;
Using new algorithms for control of isolated controller (Mova etc)

The project for the new specifications was completed in 2007 and it will take until 2018 for the new controller to be designed and manufactured..

Questions:

Are staged-based controllers faster?	SCATS operates on stage-based.
Will the new controller be low-voltage?	Work is being done on solar-powered supply.
How secure is the Internet protocol?	Security is an issue and must be addressed.

OVERVIEW OF SCATS DISTRIBUTION IN THE REST OF THE WORLD; Jim Griffin, Sales & Marketing Manager, Aldridge Traffic

Jim Griffin gave an account of his new job which takes him to many interesting countries in the world although the travel schedule can get very hectic. He showed a series of screen shots of the countries visited and elaborated on the enormous cultural differences, ways of conducting business, currency issues, language barriers and the state of urban traffic management in some of the countries visited. Although urban traffic management was not always as highly developed as in Australia or New Zealand, he was nevertheless surprised at how well known the SCATS system was.

NATIONAL TRAFFIC SIGNAL SPECIFICATIONS including: Controllers, LED maintenance, Mast Arm failures, Ped buttons, etc; Feedback from users;

The National Traffic Signal Specification was last updated in 2005 and has remained largely unaltered or updated since then. The aim is to have one unified specification nationwide. This was an appropriate forum for reviewing the specs, raising any concerns, making recommendations, suggesting deletions etc.

Earth Loop Impedance at Traffic Lights

Brendon Tong gave an update on the matter of ensuring effective earthing (Earth Loop impedance at traffic signals – Minutes of the SNUG conference 2008).

Brendon explained how the fault arose. A working party had been established to investigate this fault and to report back. The working party made the following recommendations:

Road Controlling Authorities should consider the following:

- Adding earth fault loop impedance testing to their requirements as part of the commission process for new signals works.
- Undertake a baseline survey of their existing network;
- Develop a remedial work programme based on the baseline survey.
- Undertake an annual compliance survey of their network.

It was recommended that the National Traffic Signal Specifications include the above guidelines.

The meeting discussed this matter at length and various points were raised in connection with the testing, equipment, installation, design, disabling of intersection during testing etc.

How was this matter to be treated in the national specifications ?

- included in national spec as part of commissioning ?
- part of routine maintenance test ?

The meeting voted in favour of adding to the National Specifications the requirement for testing as part of commissioning.

In terms of ongoing maintenance a decision has to be made on the period for verification (5 years ?). This should be specified in the maintenance contract.

Brendon was thanked for all the work done on this project and requested that further work be done to develop a procedure for testing; of particular importance was the question of how the testing could be done without all signals at the intersection having to be turned off.

Participants were advised to contact Brendon for guidelines and advice on new installations.

Certificates of compliance

From discussion on this matter it became evident that there was confusion over whether compliance certificates are issued for equipment as a whole, or parts thereof and if yes, who issued these certificates ?

In New Zealand no independent body issues compliance certificates for signal controllers and/or related equipment.

RTA approve the logic rack but not the whole controller box because parts can actually be manufactured elsewhere. In many cases it is cheaper to add 'local content' to a controller.

If there are issues about standards in New Zealand, then the specifications should be covering this.

Was there a need to be more specific on what is required for compliancy ?

Perhaps the matter should be left to the individual authorities to do their own compliance testing.

There was no clear mandate on this matter in terms of inclusion or otherwise in the specs.

Participants were asked to put further thought into this matter over the next year and come back with some recommendations during the next SNUG conference

Ducting of Poles;

This is a health and safety issue;

There was a request for more detail in the drawing showing how exactly the ducting should be done.

It was agreed to leave the national specs as they were but to include more detail in the capital contracts/maintenance contracts.

LED Maitenance:

The current specs did not give any indication of the period of warranty for LED aspects;

RECOMMENDATION:

Include in the National Specifications that LED aspects shall have a 5 year warranty.

A NEW SAFETY INNOVATION FOR CLOSELY SPACED SIGNALS; Grant Gordon; OPUS

Grant explained his company's involvement: Opus was part of the Auckland Motorway Maintenance Alliance, together with NZTA, BECA and Resolve.

His presentation focussed on the problems associated with closely spaced signals and he demonstrated this by using a segment of the Auckland motorway.

Definition of area:

230 centreline km;

Diamond configuration; he outlined the benefits of diamond intersections;

A stretch of motorway can end up with closely spaced intersections;

Problems;

Red light running, sometimes inadvertently;

Crashes as drivers believed they had green light;

Motorway over and underway passes can sometimes also be the cause;

Remedies considered in order to reduce the potential for crashes:

- Clear vegetation to improve visibility of signals;
- Focus on second set of traffic lights;
- Introduce additional signal phase indication;
- Introduce SmartStuds (RRPMS) traffic lane markers along lines
- Introduce dual colour LEDS (Orange and red)

SmartStuds are also effective at locations lacking signal conspicuousness, weather conditions obstructing visibility, at parallel controlled approaches, at fire stations and ambulance parking areas.

NZTA has given approval for a test trial and a suitable site is currently being selected.

DESIGN GUIDELINES FOR MULTIPLE LANE TURNS; Grant Gordon; OPUS

Grant Gordon spoke to the features of the road network controlling multi lane turns at signalised intersections. He elaborated on the advantages, issues, design aspect and geometry of multi lane turns at signalised intersections. Some of the points mentioned were:

Issues:

Need to be signalised;

Filtering should not be allowed;

Require positive control at all times;

Split diamond phasing;

May need partial split phasing.

Paramics and Saturn models.

Geometry:
Lane width;
Continuity lines;
Separate opposing right turn movements;
Mark outside of opposing turns;
Markings should stand out on wet surface;
Keep constant circular arch through turn;
Complex intersections will require survey control;
Right turn limit lines may need to be staggered;
Multi-lane turns can increase pedestrian and vehicle waiting times

VIDEO DETECTION FOR PEDESTRIAN DETECTION; Nico Verstraete; Traficon

Traficon products are intelligent video detection systems for traffic data acquisition, automatic incident detection and pedestrian/vehicle presence detection.

In terms of pedestrian detection Nico Verstraete presented two camera systems:

C-Walk - monovision

Safewalk - stereovision

By showing video images he explained the principles, technology and applications of both systems.

In response to relevant questions, Nico indicated that the software does not provide for data analysis.

NEARSIDE PEDESTRIAN DETECTION TRIAL IN LOWER HUTT; Bill Sissons; SNUG Committee

In the absence of Wayne King, Bill Sissons went through the presentation covering the Lower Hutt trial and evaluation of the PUFFIN system (Pedestrian User Friendly Intelligent).

The trial was undertaken in Lower Hutt and was to evaluate whether PUFFIN would improve pedestrian compliance with signals.

An overview was given of the equipment used for the trial;

Issues:

Adjustment of location of pole;

Placing of call box in the right direction;

Method:

Cameras captured images of pedestrian behaviour at regular crossings and PUFFIN activated crossings;

Before and after data was collected for both crossings and then compared

The sample site monitored crossings of 500

Results:

The results showed a 6.6% improvement on pedestrian compliance at PUFFIN crossings

The official results of the trial will be evaluated by NZTA.

NATIONAL PEDESTRIAN FACILITIES; Open discussion; Bill Sissons for Tim Hughes

Pedestrian Phase Extension

Email from Tim Hughes

ACTION:

Put draft of specifications on SNUG website and ask for comments and feedback.

To be brought forward to next conference.

Filter Turns

Cycling facilities at traffic signals

Trial results indicate that intersections with cycling facilities at traffic signals show a higher accident record.

A study is currently being conducted by BECA. However, consideration has to be given to the fact that since cyclist facilities have been introduced, the cyclist traffic has increased. A true evaluation of the success or otherwise of cyclist signals could ideally only be done if before and after data was available.

Special vehicle displays for traffic signals (eg bus/cyclist)

There were a number of issues surrounding this matter:

Signals for various purposes for certain groups only, eg bus, cyclist etc; how to get signals to 'talk' to a particular group only and give the instruction so that it is understood correctly ?

OPEN FOR DISCUSSIONS – ANY ISSUES ?

Bill Sissons reported on the presentation he gave at the last SMUG conference in Australia. Some of the items covered were:

Number of SCATS sites around New Zealand (1,527 overall)

Regional Issues;

SCATS Issues;

There was an issue with controllers displaying the date one day ahead of real time;

Servers with no USB support;

Subsequent discussion centred on the licensing issue:

Licensing for a minimum of 16 slots;

Puts the cost of licensing onto a project;

Why charge for licensing through the controller ?

Alternative option of paying an extra \$900 per controller rather than buying a 16 slot license.

Steven Shaw has taken note of the concerns raised and will take them to RTA and provide feedback.

TrafficReporter

Will operate for a few more years in its current form.

SCATS Training

Leon Wee asked if there was any interest from other conference participants for SCATS training. If there was enough interest, then they would organise an in-house training course. Dates to be advised.

Steven Shaw: SCATS training courses provided by RTA were now only for the new generations 6.7 and 6.8

HAMILTON V8 TRAFFIC MANAGEMENT PLANS; Ross Thomson

The City of Hamilton has the contract to run the V8 race. The event has taken place twice with a further 5 events to go.

Ross Thomson presented an area plan describing the route of the race course in the suburb of Franklin adjacent to the CBD. He outlined the number of intersections that were affected by the event and the modifications that had to be made. Some of those on the race circuit itself had to be turned off; intersections outside of the race route had to be modified temporarily for traffic management of visitors driving in for the event. The modifications affected not only signals and hardware equipment but also traffic islands, signs, poles advertising, road surface etc.

A management plan was written covering all aspects of traffic management in preparation for the event, during and after so that every person involved in the traffic management of the event could consult the same document. The document was called Traffic Signals Event Management Plan.

Some of the matters dealt with in the plan were;

Parking;

Bus routes and transportation;

Software for changes in rules and procedures;

Change of split plans;
Installations and the reasons for these;
Uplifting of hardware and equipment and the reasons for these;
Changes during the event were recorded and the reasons for these;

Ross recommended the establishment of a management plan for any authority or organisation involved in a major event that requires traffic redirection and large scale traffic management.

SNUG COMMITTEE

The current SNUG Committee agreed to stand again for 2010:

Ross Thomson
Ann Fosberry
Bill Sissons
Peter Evans
Paul Donegan
Bob Gibson
Hjarne Poulsen

The 2010 SNUG conference will be held in Wellington.

Ross Thomson closed the 2009 SNUG conference at 3.30 pm by thanking all attendees for coming to Nelson. He also thanked all sponsors for the gifts, meals and drinks.