ITS Innovations in NSW

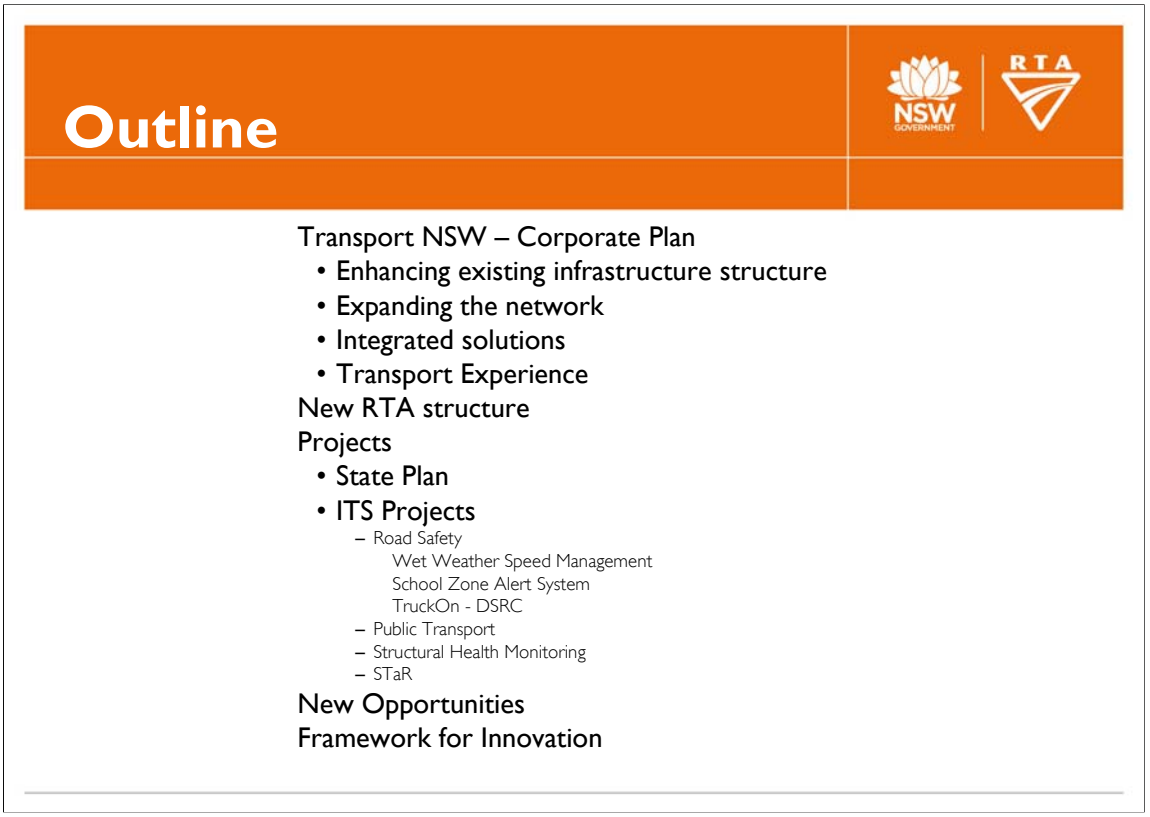
Prepared **27/08/10**

Please consider cost and environment when printing handouts.

Black and white handouts are preferable.

Delete this box when starting your template by clicking on box and pressing delete.

Version H NICTA_RTAAug10L.ppt



The bigpicture for transport is to provide a transport system that maximises benefits for the community and for the economy.

I will be talking about ITS or Intelligent Transport Systems and how these technologies contribute towards achieving this vision for transport in NSW.

ITS technologies include commuters, communications services, traffic sensors such as CCTV and magnetic induction loops – are tools of all the stakeholders using the transport system. Public transport passengers can use their mobile phone or internet services to get the latest timetables., motorists being informed about traffic conditions using Variable Message signs or flashing lights at school zones – these are all examples of ITS. While ITS has been around since 1932 in Sydney – when the first set of traffic lights were installed I will focus on the innovations of ITS and explore of the opportunities for industry here.

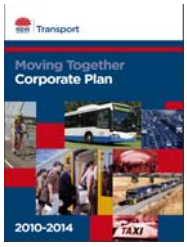
So far is the business plan to achieve this? I will introduce this as the Corporate Plan for TransportNSW and identify some of the business opportunities for industry.

This corporate has only just been released.

I will then walkthrough what the structure of the RTA is and who in the RTA uses ITS tools.

I will also show how recently completed ITS projects deliver outcomes that meet objectives already of the new corporate plan of TransportNSW. I will also point out some of the strengths and weakness of these projects.

Director General's Message



Les Wielinga
Director General

Better ***integration and coordination***, working effectively at all levels across transport entities, to achieve transport goals and results

Improving our customers 'transport experience' across all transport modes, and actively seeking customer feedback

The recent truck incident on the F3 – in April this year illustrates the some of problems in our transport system. Commuters travelling on the F3 where delayed for hours and the they did not know what was happening or how long they would be waiting. The recently release Moroney report recommended that the RTA improve its customer services and get the community's feedback.

Technologies like ITS can streamline contraflow on our motorways and this is one fo the options being examined.

This is driving the change within NSW government together with a better focus on integrating and coordinating services. Services were well integrated during the Sydney Olympics and the lessons learnt there will be revisited.

AN example of existing coordinated services are the Transport Integration Group in the Transport Management Centre just across the road. During peak hours a team whose members consists of all the public transport agencies and the police get the latest picture of Sydney roads and can make immediate adjustments to their schedules.

Giving priority to buses is another example of coordinate services where the RTA and bus operators work together. The result is an integrated service where the passenger is better off and gets priority on the roads if the bus is late.

Transport NSW a glance

28,000 employees
Population growth: now to 2036
- NSW: Two million extra to nine million
- Sydney growth: Six million

70% journeys: private vehicles
4.7 million drivers
5.3 million vehicles
185,000 KM of roads
Transport infoLine:
- 11 million contacts/yr

Freight:
5.5 billion KM/yr
50,000 trips/day
25 million tonnes of freight through Port Botany/yr
Double freight from 2006 to 2020

TransportNSW is big – ever by world standards and this illustrates the size of the transport System in NSW. There will be an increased demand for transport and not only from a growing populations but also from a doubling of freight by 2020. ICT or Information and Communications technologies are already being used by the public – look at the yearly figure of 11million calls per year to Transport Info for public transport services.

Enhance & maintain infrastructure

Getting most out of existing infrastructure
- Prioritise investment of ongoing works
- Maintain the condition & value

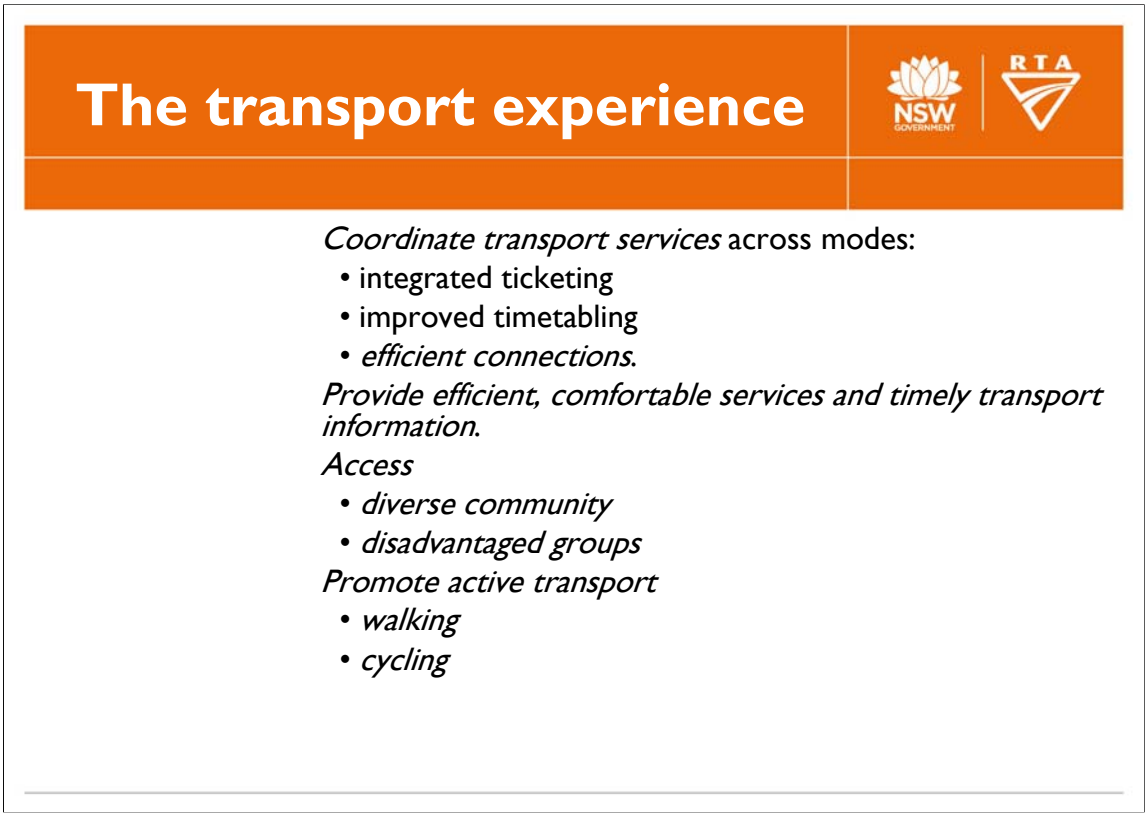
Enhance existing network
- Delivering infrastructure
- Improve connections esp at interchanges

Besides new projects to enhance the existing roads network – we need to get the most from our existing assets there. For new transport infrastructure a higher priority will go to funding transport interchanges and intermodal works – esp those that encourage the public to use public transport.

We need to maintain these assets and know they condition – we can not wait until they collapse. Assets in the total Transport System to the value of *$110 Billion* need to be monitored and maintained. Road assets are $75Billion. ICT will play its role here in helping use know early the health condition of assets. The assets include: 20,000 kms of roads with 18,000 Kms of State roads, 5,00 bridges and 3,600 traffic signals. The annual budget for road maintenance is $900 Million.

We also need to get the most out of the existing network by best optimising the control systems that regulate traffic on the arterial and motorway networks. ITS will be expected to play its role in measuring traffic and selecting the best control strategies for maximum thruput of people and freight. In the past we only focused on optimising the thruput for vehicles.

At the moment we have separate systems for controlling traffic on the arterial road network and on motorways. SCATS or Sydney Coordinated Traffic System controls traffic in urban streets and major roads but CMCS monitors and can provide control on motorways. We will look at strategies to integrate the two approaches.



In order to make public transport easier to use the NSW Gov will deliver the integrated ticking project together with further improving to timetable scheduling and measurement.

Travelling by public transport should be a real choice – it should allow the community to travel comfortably and fell secure. Access should be available to all members of the community and the transport system needs to cater for those with disabilities. Extending choice to include walking or cycling options even if only for a part of the trips should be available to the community.

ITS technology can deliver travellers information to make that choice – services such as telematics, internet and wireless services will be extended and the government will form partnerships with industry to do this. The government will examine best practice overseas to see what can be done here to deliver better customer services by extending information sources. These will include Highway Advisory Radio, using the broadcasting services of cooperate ITS technologies such as cooperative ITS using DSRC (Dedicated Short Range Communications), 3G and SMS technologies.

Safety and compliance

Improve road safety

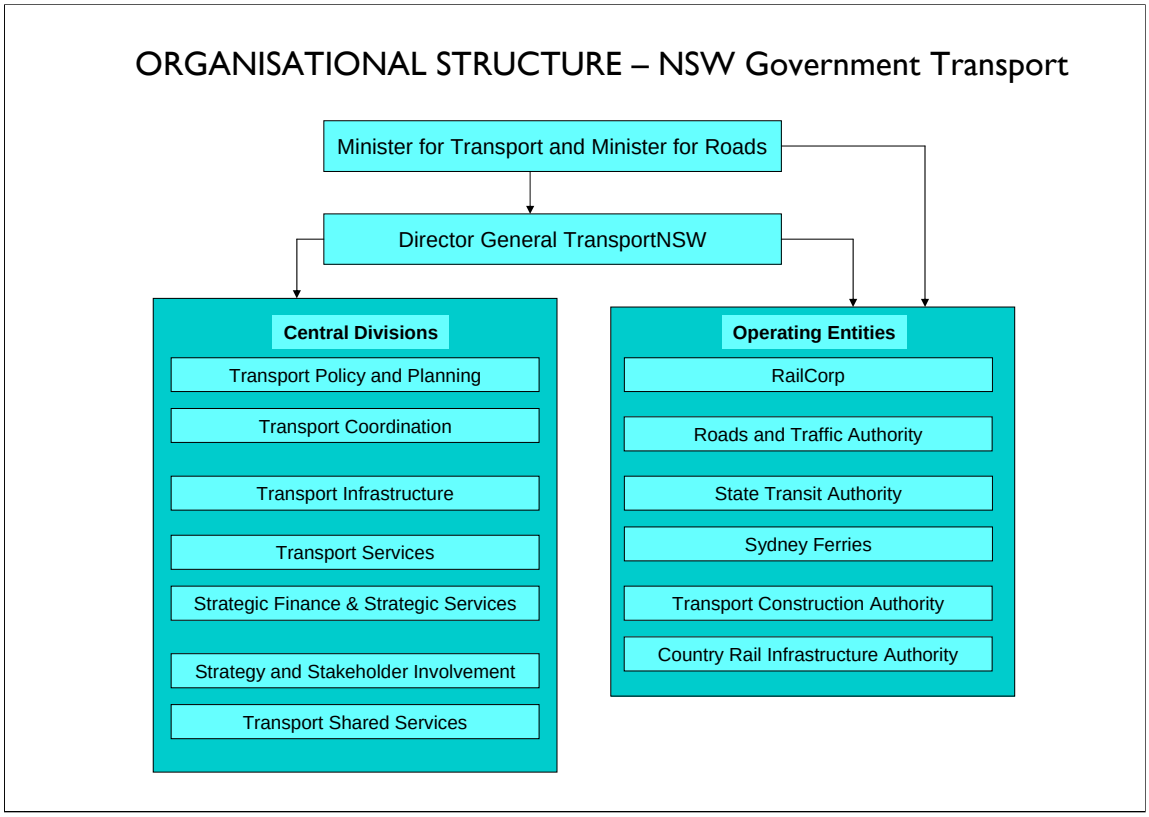
Keep passengers safe

- public transport by providing safe infrastructure and
- secure journeys.

Manage compliance and enforcement

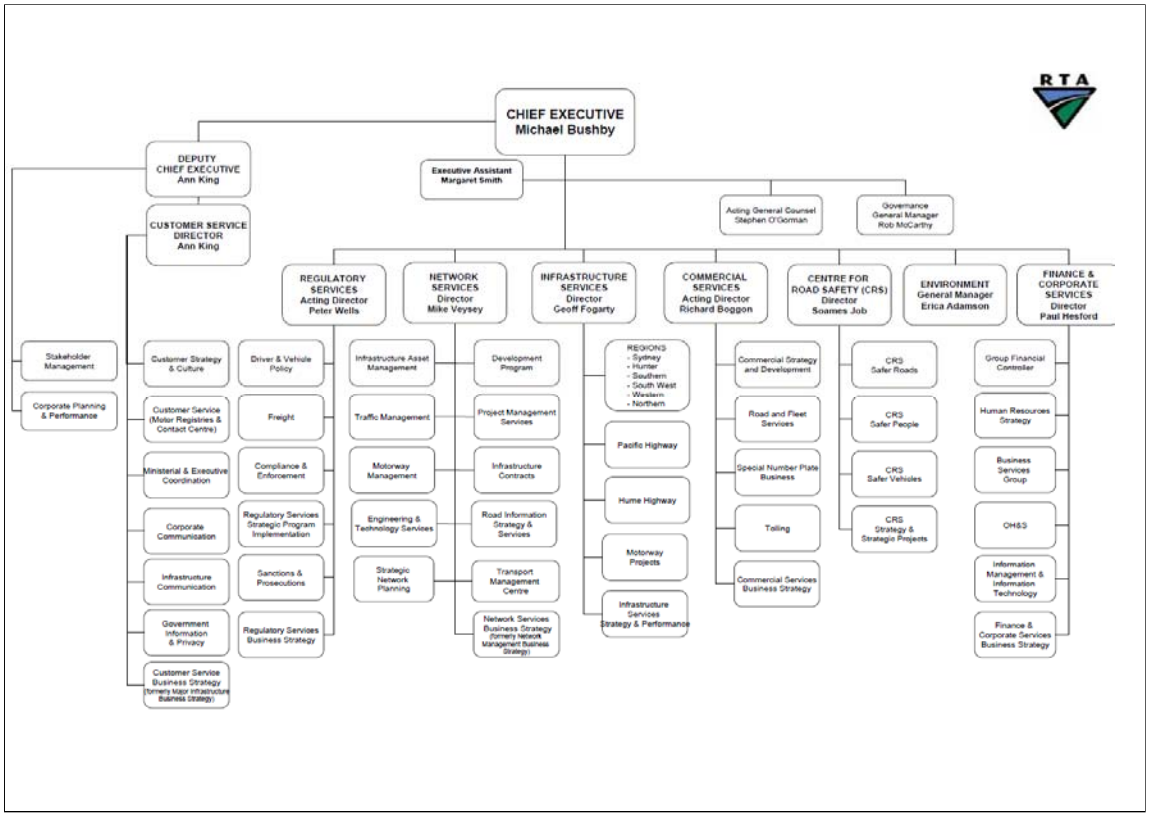
- transport systems - safe
- asset - protected
- environment impact
- deterred illegal behaviour

In order to make the transport system safe the government is using ITS technologies to ensure compliance with the road rules and other government regulations. Speed cameras, Safe-T-CAM, Heavy vehicle checking stations, weight-in-motion, bus lane cameras, flashing lights and even traffic signals are all technologies where safety is the key focus.

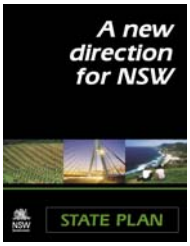


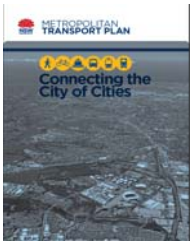
Transport NSW is governed by an Executive – it includes the DG of TransportNSW and heads of operating entities list on the right and Deputy DGs of the central divisions – list on the left. RTA being responsible for road transport planning is one of the operating entities. Some parts of the RTA will either move into the Central Division or mirror the planning structures in the central divisions. There will be a single Transport budget and coordinating of how this budget is spent.

For example the Transport Coordination Group will move from the TMC into become one of the central groups in TransportNSW.



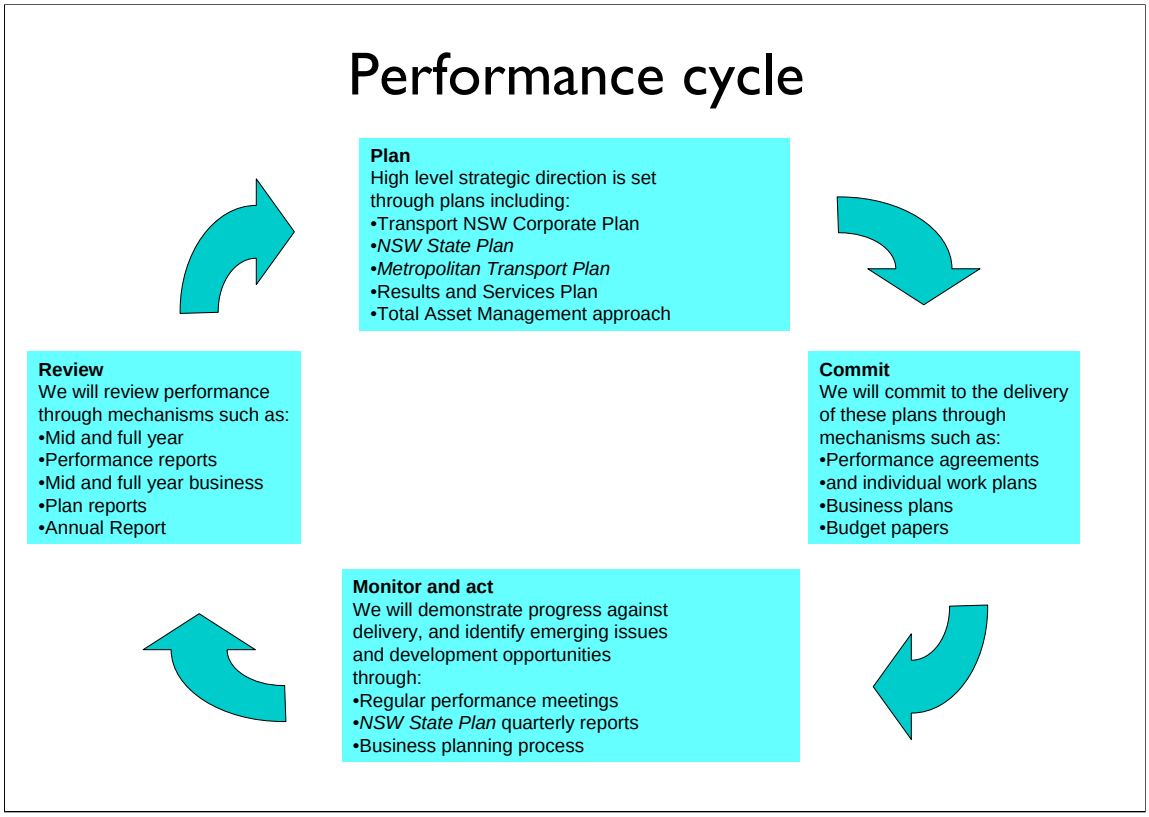
The Moroney report has had a big impact in re-organising the RTA. There has been a response to providing better customer services and the new customer services directorate now has a high profile with its head, Ann King as deputy CEO. Ann reports to Mike Busby who is the CEO.





State Plans

- Transport NSW Corporate Plan
- *NSW State Plan*
- *Metropolitan Transport Plan*
- Results and Services Plan
- Total Asset Management approach
- *Blueprint: RTA Corporate Plan 2008-2012*



From the state plans projects are proposed and each includes a business plan. Projects that include ITS solutions have to complete and priority is only allocated to proejcts that align with the goals of the state plan.

Projects are tracked and monitored for progress – this is generally done on an annual cycle.

Projects & Initiatives: Buses

New bus priority - 43 strategic bus corridors

- *use of state-of-the-art technologies.*

1,000 new buses, allowing for an

- increased number of services and
- reduced journey times,

Construct the Inner West Busway

New technologies –

- **running on time**
- **enhance the connections between bus, train and ferry services.**

Develop a simple route identification system

- bus network easier to understand

Identify new corridors

- between new housing centres and
- employment development areas.

NSW's Road Network 1

Transport Coordination Group

- manage each peak period in Sydney with a coordinated approach
- major event management
- using state-of-the-art technology

The Pinch Point strategy

- target and relieve bottlenecks
- improving traffic flows at key congestion points
- enhancing the existing capacity and getting the most out of the network.

Public Transport Information and Priority System (PTIPS)

- technological solution
- give late running buses priority at signalised intersections
- get them back on time

PTIPS Metrics

Intersections enabled:	791
Buses installed:	2160
July uptime:	92.8% uptime!
Bus time saved last week:	4123 minutes

Covers all STA buses in Sydney. BusWays to follow.

Good acceptance by bus operators.

Trials interstate – WA and Adelaide

& overseas – China – as an ITS product should have an demand global demand similar to SCATS.

Comment from Lee:

No there is no target. It depends very much on what happens with the traffic in general as priority will not be given during congestion situation. Please note the following facts:

the "bus time saved" is an approximation based on "what if" priority has not been given and the bus was stopped at the traffic light waiting for the next green phase. The approximation of "time saved" is the time difference between the original SCATS green phase, and the PTIPS request to advance the green phase to allow the bus to go pass. This KPI does not take into account when PTIPS extends the current green phase to let the bus go pass, so it is on the conservative side.

Priority is only activated when the bus is running 5 minutes later than timetable. As performance target for STA is 95% of buses running on time, signal priority only benefit a small proportion of running buses.

Priority is currently given only for very simple phase A-B intersections (791 simple TCS on STA bus routes out of a total of more than 1600 TCS). Net Ops from the TMC will not allow priority to be enabled at more complex intersections or those in CBD or congested areas. We are under negotiation with Net Ops to allow "conditional priority" at some complex intersections, either by time of day or by certain phase movements only.

Usefulness of priority is therefore limited as priority is not given when it is needed most: in congested areas and at complex intersections. Priority is normally given only on straight simple routes. Buses normally runs late when they reach the CBD but are not given priority in these areas.

For the above facts, it is not possible to set a target for time saving.

Another thing worth noting is the fact that the priority processing algorithm in PTIPS is very complex and full of inherent uncertainties:

PTIPS receives bus coordinates every few hundred meters (a variable, depending on the geography of each route, bus stop locations, TCS locations etc.). The latency of this information, which could take from a fraction of a second, to dozens of seconds to get to PTIPS, adds a great deal to the uncertainty of current location (this is in addition to any GPS errors that can come from a variety of sources, including signal reflections, tunnel, RF interferences, etc.). From this, PTIPS must estimate, based on the current speed and historical data at the same location on a range of previous days/weeks/months, the time the bus would likely to arrive at the intersection. PTIPS then accesses SCATS to obtain the absolute time of the green phase (there is time synchronisation problem between the various systems involved) and its duration. PTIPS then makes the decision to ask SCATS either to extend the current green phase or to move the next green phase forward, or to abandon trying to give priority altogether. Note that when PTIPS accesses SCATS for information, it also receives the degree of traffic congestion at the TCS and will not request priority of SCATS if the congestion exceeds a given threshold.

Managing & Maintaining NSW's Road Network 2

Reintroduce mobile speed cameras

- awareness of enforcement operations
- influence road user behaviour

Ensure safe road environments

- road safety reviews
  - major highways
  - assisting councils.
- road engineering devices …..reduce
  - chance of crashing
  - impact of crashes

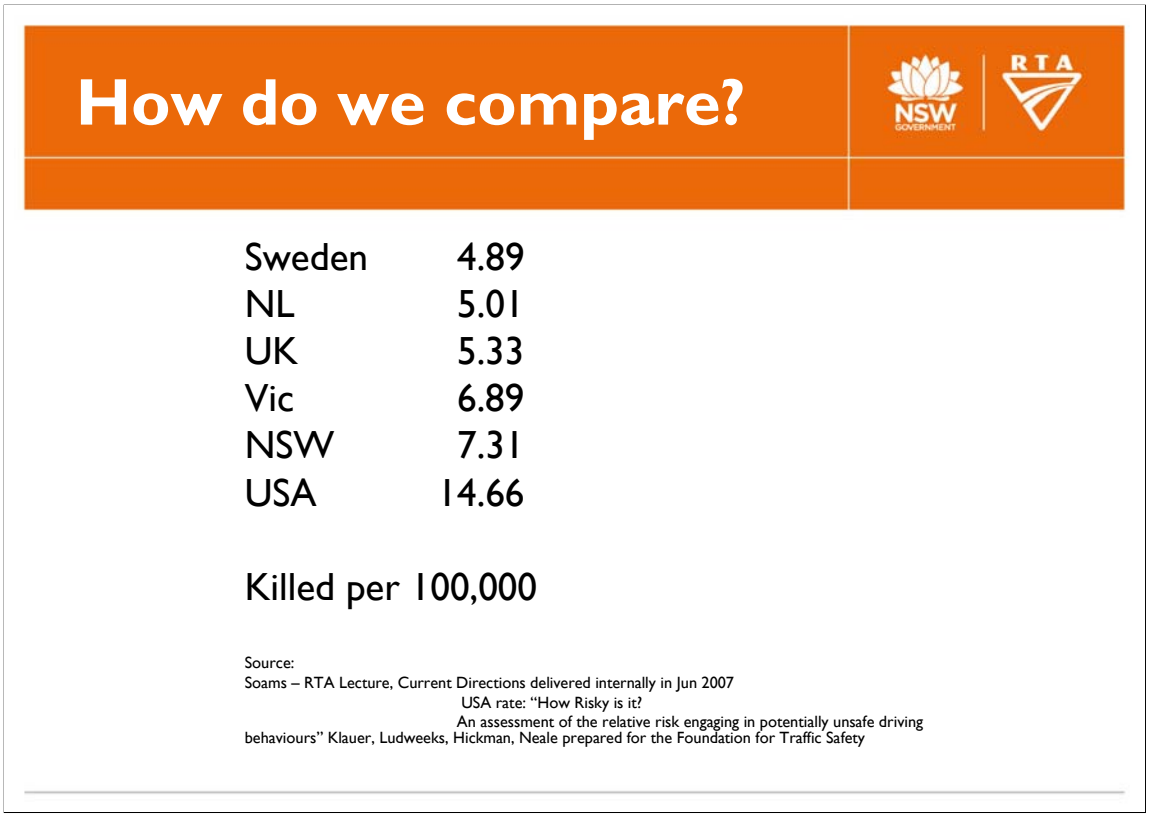
Hunter Expressway

- 4-lane expressway
- F3 & New England Highway
- 40 KM dual carriageway

KPIs

	Performance indicator	Target (2016)
Travel	**Improve the public transport system**	
	■ Increase the share of commute trips made by public transport:	
	■ ■ To and from Sydney CBD during peak hours	80%
	■ ■ To and from Parramatta CBD during peak hours	50%
	■ ■ To and from Newcastle CBD during peak hours	20%
	■ ■ To and from Wollongong CBD during peak hours	15%
	■ ■ To and from Liverpool CBD during peak hours	20%
	■ ■ To and from Penrith CBD during peak hours	25%
	■ Proportion of total journeys to work by public transport in the Sydney metropolitan region	28%
	Provide reliable public transport	
	■ CityRail trains run on time across the network	92%
	■ Sydney Buses run on time across the network	95%
	■ Sydney Ferries run on time	99.5%
	Improve the road network	
	■ Improve the efficiency of the road network during peak times as measured by travel speed and volumes on Sydney's road corridors	
	■ 98% of incidents on principal transport routes cleared, on average, within 40 minutes of being reported	40 min
	■ Proportion of container freight movement by rail out of Port Botany	40%
	Increase walking and cycling	
	■ Mode share of bicycle trips made in the Greater Sydney Region, at a local and district level	5%

	Performance indicator	Target (2016)
Accessibility	**Increase the number of jobs closer to home**	
	■ Increase the percentage of the population living within 30 minutes by public transport of a city or a major centre in metropolitan Sydney*	
Asset	**Maintain road infrastructure**	
	■ Percentage of urban and rural State roads meeting the national standards on quality (smoothness)	93%
	Maintain and invest in infrastructure	
	■ Maintain our average annual capital expenditure growth of 4.6% nominal from 2005-06 to 2015-16*	
Safety	**Improve road safety**	
	■ Fatalities per 100,000 population	4.9
Environment	**Tackling climate change**	
	■ Contribute to the cut in greenhouse gas emissions by 2050*	
	Develop a clean energy future	
	■ Contribute to the renewable energy consumption targets for 2020*	



The 2008 toll of 374 fatalities was the lowest loss of life on the roads since 1944 and a 16 per cent reduction on 2007.
This is the sixth consecutive year the road toll has reduced, despite a steady increase in traffic on our roads.

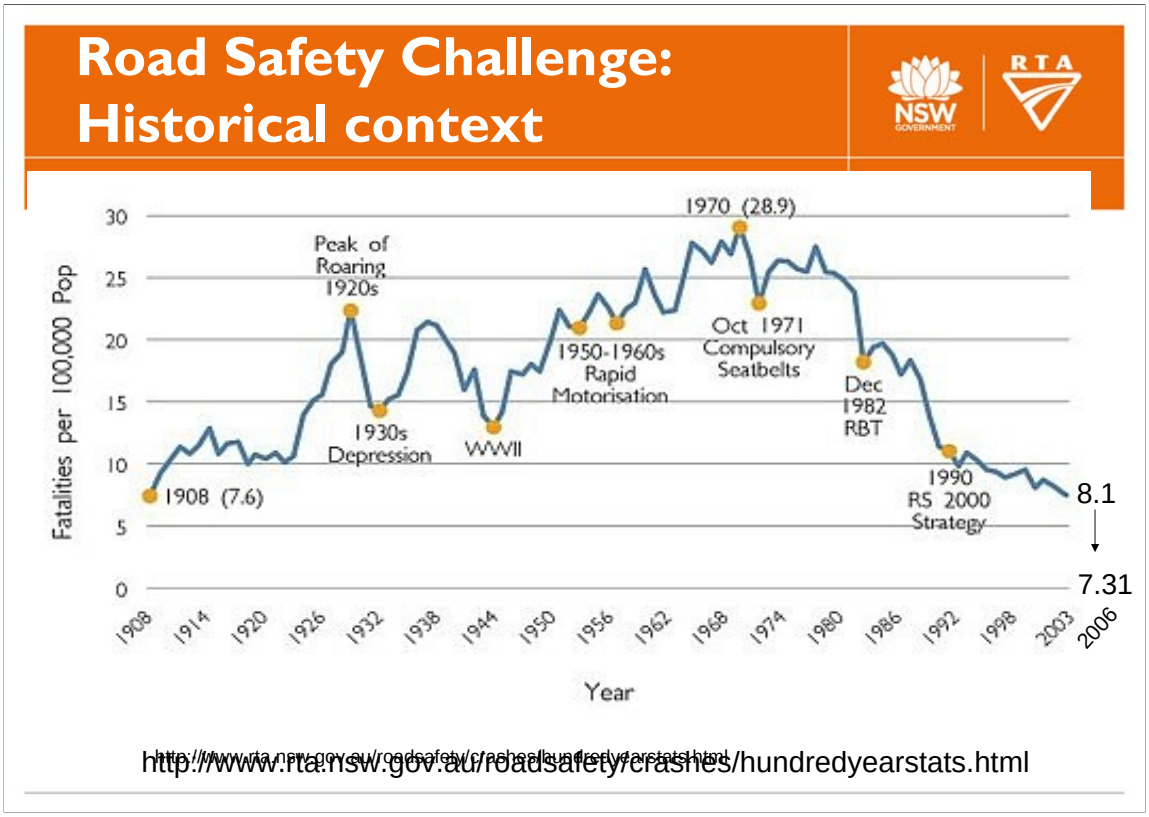
Since 1945, our population has doubled and vehicle numbers are thirteen times higher. However, the toll has only increased by eight per cent over more than 60 years. This year's fatality per population rate is the lowest since records began in 1908.

However, whilst there have been these commendable reductions in road trauma in New South Wales over the past two decades, road crashes still cause more than 400 deaths and 25,000 injuries each year on our roads. Apart from the suffering of victims and their loved ones, the financial cost to our community is around $3.7 billion each year.

With the key objective of halving the road toll by 2010, the State Government has developed the Road Safety 2010 ten-year strategic framework. Road Safety 2010 promotes strategies in the key areas of Safer People, Safer Roads, Safer Vehicles and Community Based Action.

As the lead agency for road safety in New South Wales, the RTA continues to play a fundamental role in delivering programs designed to reduce road deaths and injuries.

http://www.rta.nsw.gov.au/roadsafety/statistics/index.html



Crash statistics

The 2004 road toll of 510 fatalities was the lowest in New South Wales since 1947. The 2004 result is a remarkable achievement given the growth in the population and the number of drivers and vehicles on our roads. Over the last half century the NSW population has doubled, the number of licences has increased sevenfold and the number of vehicles in 2004 is more than ten times that for 1947.

However, whilst there have been these commendable reductions in road trauma in New South Wales over the past two decades, road crashes still cause more than 500 deaths and 25,000 injuries each year on our roads. Apart from the suffering of victims and their loved ones, the financial cost to our community is around $3.7 billion each year.

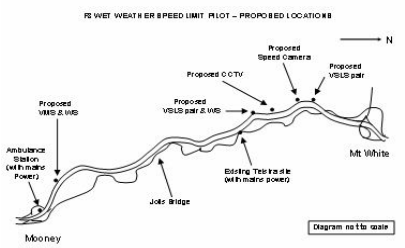
With the key objective of halving the road toll by 2010, the State Government has developed the Road Safety 2010 ten-year strategic framework. Road Safety 2010 promotes strategies in the key areas of Safer People, Safer Roads, Safer Vehicles and Community Based Action.

As the lead agency for road safety in New South Wales, the RTA continues to play a fundamental role in delivering programs designed to reduce road deaths and injuries.

Look at the mismatch of standards and design: F3 (designed in 60s), using standards of 1930s – operational today with cars capable of much higher speeds.

http://www.rta.nsw.gov.au/roadsafety/crashes/statistics.html

Road Safety – Wet Weather



- Enforce a 90 KMH speed in wet weather
- Variable Speed Limit Sign (VSLS)
- Variable Message Sign (VMS)
- Weather Station
- Close circuit television (CCTV)

School Zone Alert System

Centrally managed solar powered flashing light devices to alert motorists.

400 school zones by the end of 2011: $46.5M
Whole life cycle of the program including

- definition
- proof of concept
- implementation
- asset management
- operation

Explore best solutions with industry

Type approval system

Innovation

- 3G coms
- Solar power

TruckON

Problem

- over height vehicles striking infrastructure

Need

- 3 incidents/month - NSW
- M5 tunnel crash 8 May 2010
- major disruption to Sydney roads

Proof of concept

Solution

- slow the vehicle
- bring it to a safe stop using its own onboard systems

New wireless communication technology

- Dedicated Short Range Communication (DSRC)
- CALM (Continuous Applications for Vehicles)

NICTA –RTA team
RTA's Crashlab facility at Huntingwood

The project is a proof of concept for the application of new wireless communication technology called Dedicated Short Range Communication (DSRC) to the problem of over height vehicles striking infrastructure.

The system involves detecting that a vehicle is over height and poses a threat to infrastructure, communicating directly into that vehicle via wireless communications and instructing the driver on an in-vehicle display and audio. The driver is requested to stop or take a diversion. Should the driver continue to proceed, the system would (*not tested this phase of the project*) slow the vehicle and bring it to a safe stop using its own onboard systems.

This method of addressing the infrastructure protection problem is novel and NICTA have a patent pending on the system. This system would be an element of an overarching system spanning the whole of the road network to address this problem. It is recognised that policy, certification and stakeholder consultation would be required to progress this solution. The aim of this project is to establish the technical feasibility of this solution

THE ANNOUNCEMENT:

Announcement of a proposal the RTA has been working on in conjunction with NICTA to introduce a new system that would alert heavy vehicle drivers if their vehicle is too big to pass under tunnels and other road infrastructure.

At this stage the project is a proof of concept only. However, issues with over height vehicles and the damage they can cause is topical and follows the recent announcement of an increase in fines and penalties for drivers of over height vehicles that cause damage to road infrastructure.

The system uses a new type of wireless communication technology called Dedicated Short Range Communications (DSRC).

The system uses sensors and an in-vehicle display to alert drivers that their vehicle exceeds the maximum height limit of approaching bridges and tunnels.

The RTA has a large truck that has been fitted out with this equipment.

The proposal on the day would involve a demonstration at the RTA's Crashlab facility at Huntingwood, in west Sydney.

The truck would pass under a specially constructed 3m-high scaffold fitted out with sensors that would trigger the alert system in the truck's cab.

Although it has not been implemented at this stage, the system would also slow the vehicle down automatically if the driver did not act on the warning that the vehicle was too high for the approaching infrastructure.

BACKGROUND:

This event would closely follow the announcement last week of a 12-fold increase in fines for drivers of over height trucks that hit tunnels from $141 and no demerit points to $1776 and six demerit points.

The RTA has contributed $100,000 to the project while NSW Industry and Investment has also contributed $100,000.

The project finishes on 15/7/2010.

NICTA are keen to bring their own video team to cover the demonstration for future PR and promotional purposes. RTA will retain responsibility for inviting external media agencies to the event.

ISSUES FOR CONSIDERATION:

Recent announcement of changes to laws around over height vehicles damaging infrastructure.

M5 tunnel crash on 8 May this year which caused major disruption to Sydney roads.

TruckON

Collaboration
- RTA
- NICTA - ESA
- *Industry*:
  - Braetec
  - Cohda
  - CPE Systems
  - DISplay Pty Ltd
  - ResTech

Funding
- Dept of Industry & Investment: $100K
- RTA: $100K

Completion: 15/7/2010.

The project is a proof of concept for the application of new wireless communication technology called Dedicated Short Range Communication (DSRC) to the problem of over height vehicles striking infrastructure.

The system involves detecting that a vehicle is over height and poses a threat to infrastructure, communicating directly into that vehicle via wireless communications and instructing the driver on an in-vehicle display and audio. The driver is requested to stop or take a diversion. Should the driver continue to proceed, the system would (*not tested this phase of the project*) slow the vehicle and bring it to a safe stop using its own onboard systems.

This method of addressing the infrastructure protection problem is novel and NICTA have a patent pending on the system. This system would be an element of an overarching system spanning the whole of the road network to address this problem. It is recognised that policy, certification and stakeholder consultation would be required to progress this solution. The aim of this project is to establish the technical feasibility of this solution

THE ANNOUNCEMENT:

Announcement of a proposal the RTA has been working on in conjunction with NICTA to introduce a new system that would alert heavy vehicle drivers if their vehicle is too big to pass under tunnels and other road infrastructure.

At this stage the project is a proof of concept only. However, issues with over height vehicles and the damage they can cause is topical and follows the recent announcement of an increase in fines and penalties for drivers of over height vehicles that cause damage to road infrastructure.

The system uses a new type of wireless communication technology called Dedicated Short Range Communications (DSRC).

The system uses sensors and an in-vehicle display to alert drivers that their vehicle exceeds the maximum height limit of approaching bridges and tunnels.

The RTA has a large truck that has been fitted out with this equipment.

The proposal on the day would involve a demonstration at the RTA's Crashlab facility at Huntingwood, in west Sydney.

The truck would pass under a specially constructed 3m-high scaffold fitted out with sensors that would trigger the alert system in the truck's cab.

Although it has not been implemented at this stage, the system would also slow the vehicle down automatically if the driver did not act on the warning that the vehicle was too high for the approaching infrastructure.

BACKGROUND:

This event would closely follow the announcement last week of a 12-fold increase in fines for drivers of over height trucks that hit tunnels from $141 and no demerit points to $1776 and six demerit points.

The RTA has contributed $100,000 to the project while NSW Industry and Investment has also contributed $100,000.

The project finishes on 15/7/2010.

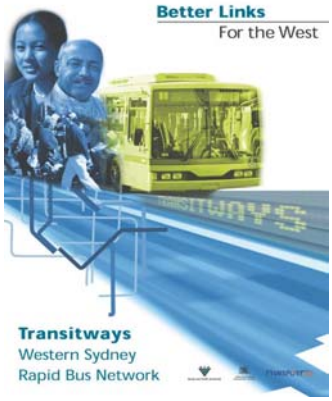
NICTA are keen to bring their own video team to cover the demonstration for future PR and promotional purposes. RTA will retain responsibility for inviting external media agencies to the event.

ISSUES FOR CONSIDERATION:

Recent announcement of changes to laws around over height vehicles damaging infrastructure.

M5 tunnel crash on 8 May this year which caused major disruption to Sydney roads.

Liverpool to Parramatta T-Way



Growth in Sydney - Western Sydney
- high growth - private car
- access public facilities
- new industrial areas - no public transport

Passenger perception
- lack of services - especially off-peak
- services unreliable
- stations - not safe
- lack of choice

Public Transport
- Sydney CDB focus

Air quality

Ageing population

ITS on Liverpool to Parramatta T-Way

Components
- Passenger Information Signs & PA system
- Bus Tracking System
  - Works with SCATS
  - Upgrade to PTIPS
- Help Points
- Bus Management System
- Bus Lane enforcement cameras
- Fibre Optics communications link

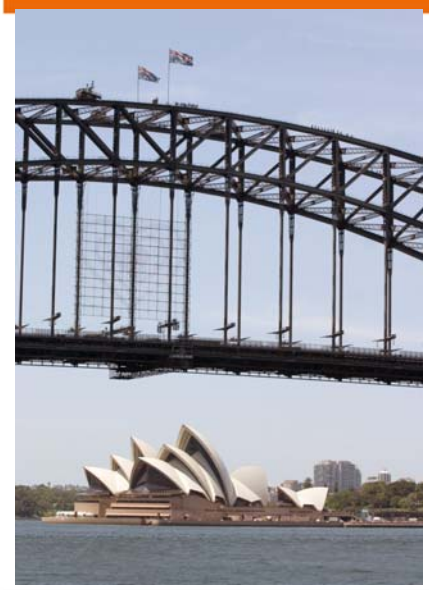
Pre-tender qualifications
- CMMI assessment
- ISO9001 accreditation

Public tender

Contractor
- United

$23M

Infra-structure Protection



– Electronic Security

» Sydney Harbour Bridge

» Anzac Bridge

» 20 Remote Bridges

Wireless Sensor Networks

Partners

University of California Berkeley

Intel

Smart Dust or MOTES

Smart network of sensors

MEMS

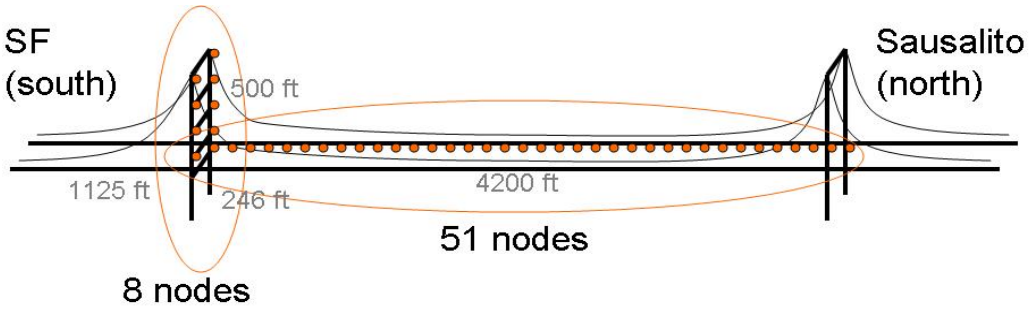
(Micro-electromechanical Sensors)

Golden Gate Bridge (GGB)

Objective

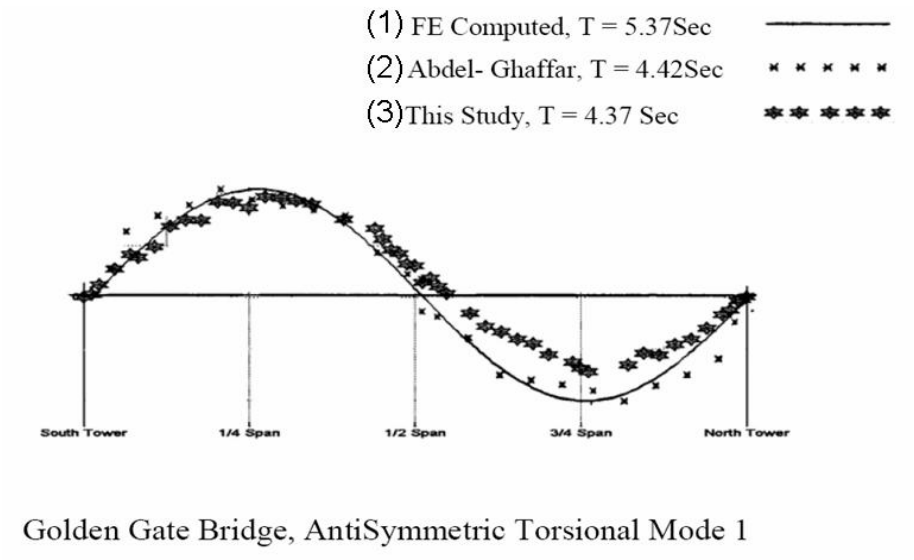
- Bridge sways in gusts
- Earthquake detection

GGB -MOTE Network



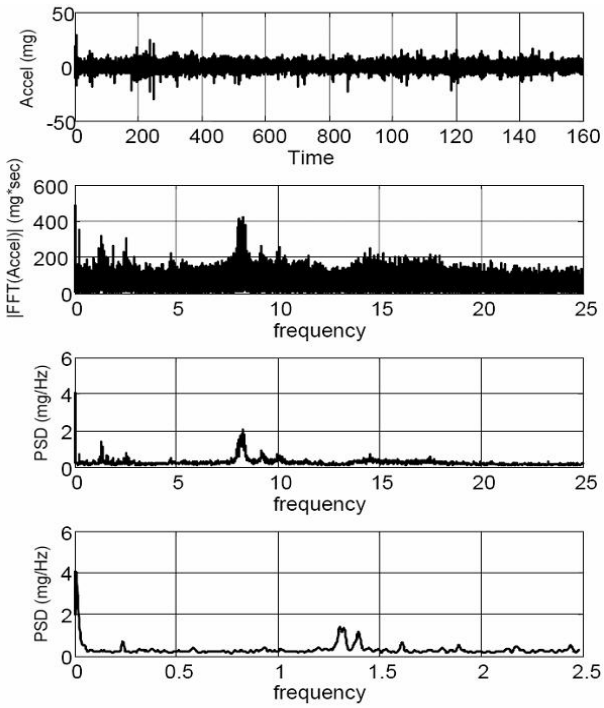
Ref: *Health Monitoring of Civil Infrastructures Using Wireless Sensor Networks*
Sukun Kim, Shamim Pakzad, David Culler, James Demmel, Gregory Fenves, Steven Glaser, Martin Turon
Electrical Eng & Computer science & Civil & Environmental Engineering
Crossbow Technology

GGB –Results I



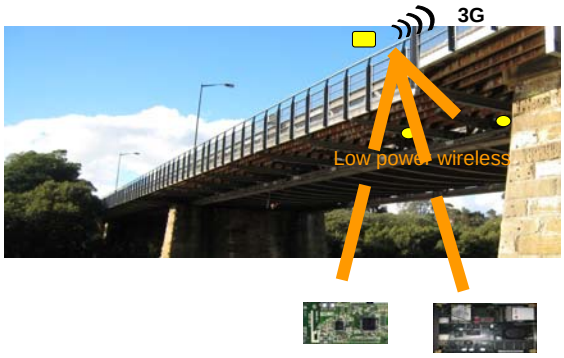
Golden Gate Bridge, AntiSymmetric Torsional Mode 1

Ref: *Health Monitoring of Civil Infrastructures Using Wireless Sensor Networks*
Sukun Kim, Shamim Pakzad, David Culler, James Demmel, Gregory Fenves, Steven Glaser, Martin Turon
Electrical Eng & Computer science & Civil & Environmental Engineering
Crossbow Technology



Ref: *Health Monitoring of Civil Infrastructures Using Wireless Sensor Networks*
Sukun Kim, Shamim Pakzad, David Culler, James Demmel, Gregory Fenves, Steven Glaser, Martin Turon
Electrical Eng & Computer science & Civil & Environmental Engineering
Crossbow Technology

Structural Health Monitoring for Bridges

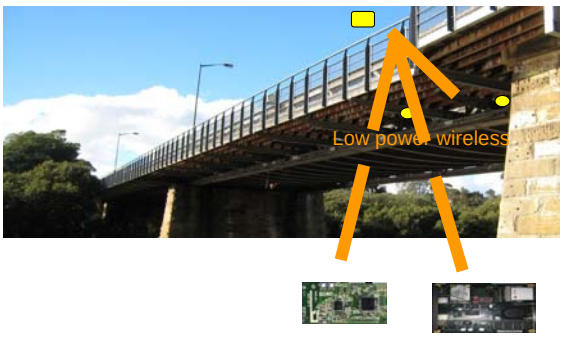


Investigate the financial and technical potential of monitoring the structural health of bridges using wireless sensor networks

Establishing a Testbed

- A network **on-site** under **real conditions** that researchers can experiment with.
- Over-provisioned: cabled with USB cables
  - Background comm. channel
  - Energy provided (but measured)
- Managing Software

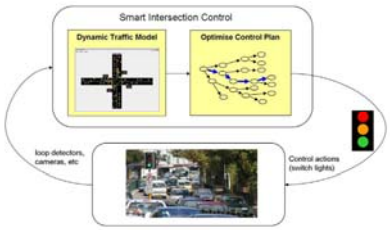
Structural Health Monitoring for Bridges



Looking Ahead

- Opening the platform to more researchers
- Validating sensing data
  - against RTA's legacy sensing devices
- Gathering wireless communication data:
  - Guide design of network protocols to maximize lifetime

STaR



- New generation traffic control systems to
- Tackle congestion
  - $10 billion annually
- New models for traffic control systems
- Two live RTA contributed test-beds
  - traffic signal controlled intersection -Sydney
  - highway roundabout - Illawarra region

- Collaborators in this project include:
  - Roads and Traffic Authority, New South Wales,
  - NICTA
- November 2004
- Work packages
  - STaR Sense
    - Advanced video sensors
  - STaR Control
    - Real Time Traffic Control and Modelling
  - STaR Coms
  - STar UI

Smart Transport and Roads Project (STaR)

Australia decades ago developed adaptive traffic management systems for our cities which have been also exported to many major systems around the world. NICTA has a Smart Transport and Roads (STaR) Project which will use advanced information and communications technologies to build on and expand the existing systems to help solve urban traffic congestion problems. With better information and modelling capabilities provided by the new STaR project, traffic systems, traffic managers and travellers themselves will be better able to predict and respond to traffic build ups, bottlenecks, accidents and breakdowns. The advantage of such an improved system to reduce congestion will extend the capital life of roads infrastructure and provide benefits to the business and the community through:

☐ More reliable journey times

☐ Reducing vehicle emissions

☐ Reducing delays

☐ Providing a better understanding of traffic flows for urban and metropolitan planning.

The STaR project will make traffic control systems smarter by giving them better, introduce more comprehensive sensory input and making novel use of mathematical and computational techniques to establish an understanding of how traffic is flowing over the wide area network of traffic. It will use that information to compute changes at the level of each traffic light to optimise traffic flows across that network.

Framework for Innovation

Link –
- Strategy & Outcomes to technology solution

Measure performance – compare technologies

National Collaboration

Leadership
- Austroads

Systems Approach

Funding –
- linked to Business Strategy

Quality
- ISO9001
- CMMI

New Opportunities

Large Projects

- Hunter Expressway
- Pinchpoint program
- Regulations
  - Red Light Cameras
  - T2 & T3 compliance
- Requirements
  - Systems Engineering
  - ISO9001 & CMMI (larger projects)
  - Type approval
  - Partnering
- Technologies
  - Travel Time
  - Traveller advice

Innovation

- Expression of Interest
- Partnership with NICTA/RTA
- Tenders
  - Part of a large project
  - Eg School Zone Alert System

Summary

Transport NSW
- Enhancing existing infrastructure structure
- Expanding the network
- Integrated solutions
- Transport Experience

New RTA structure

Projects
- State Plan
- ITS Projects
  - Road Safety
    - Wet Weather Speed Management
    - School Zone Alert System
    - TruckOn- DSRC
  - Public Transport
  - Structural Health Monitoring
  - STaR

New Opportunities

Framework for Innovation

References

Transport NSW corporate Plan - http://www.transport.nsw.gov.au/publications/corporate-plan

NSW State Plan - http://www.nsw.gov.au/stateplan

Metropolitan Transport Plan - http://www.nsw.gov.au/metropolitantransportplan

Result and Service Plan - http://www.treasury.nsw.gov.au/__data/assets/pdf_file/0003/12279/tc08-11.pdf

Total asset management approach - http://www.gamc.nsw.gov.au/default.asp?PageID=12

Blueprint: RTA Corporate Plan 08/12 - http://www.rta.nsw.gov.au/aboutus/downloads/blueprint_corporate_plan_2008-12.pdf