



# 2001 ANNUAL REPORT

A report on the 2001 activities of the Institute of Transport Studies: The Australian Key Centre in Transport management, ITS Sydney and ITS Monash.

*Established and supported under the Australian Research Council's Key Centre Program.*

## **INSTITUTE OF TRANSPORT STUDIES**

The Australian Key Centre  
in Transport Management

The University of Sydney  
and Monash University

*Established under the Australian Research Council's Key Centre Program.*



2001 Annual Report

April 2002

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## 1. ABOUT THE KEY CENTRE

ITS: The Australian Key Centre of Teaching and Research in Transport Management was established in July 1995 as a joint venture between the University of Sydney and Monash University. ITS grew out of two existing Centres – The Institute of Transport Studies within the Graduate School of Business at the University of Sydney, and the Monash Transport Group within the Department of Civil Engineering at Monash University. The Institute at Sydney and the Monash Transport Group were leading Australian centres in transport management and traffic education and research in their own right prior to the establishment of the Australian Key Centre. In January 1998, ITS Sydney relocated to the Faculty of Economics, renamed in January 2000 as the Faculty of Economics and Business.

The Institute of Transport Studies (ITS) has nodes at the University of Sydney and Monash University. The Director of ITS is Professor David Hensher FASSA, Professor of Management at the University of Sydney. Associate Professor Geoff Rose is Director of ITS Monash.

The Key Centre is guided by an Advisory Committee of eminent academic, industry and government representatives, chaired from July 1995 to March 2001 by Professor John Taplin, AM. The advisory committee's role is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government. A new structure for the Advisory Board is to be introduced in 2002 and is outlined in the Director's Report.

ITS provides education programs at a range of levels: PhD, Masters, Graduate Diploma, Graduate Certificate, continuing education workshops, management development seminars and Certificate programs. In addition, ITS conducts transport, traffic, logistics and supply chain related research. The Institute has an extensive program of related activities including publications, participation at conferences, software development, contract research to industry and government and links to other leading transport and logistics institutes around the world, especially in the USA, UK, The Netherlands, Chile and Sweden.

July 2001 marks the completion of the six years of core funding from the Federal Government. The Key Centre however will continue in its present institutional and structural guise to make notable contributions to the research and education profile of Australia under the exact same charter it currently has. The University of Sydney has recognised ITS as a Research Strength in its review of areas of research that should be supported.

## 2. DIRECTOR'S REPORT

The Institute of Transport Studies has changed a great deal since the Key Centre status in 1995. ITS-Sydney celebrated 10 years in January 2001 and ITS-Monash 30 years since the Monash Transport Group that predated ITS-Monash was established.

ITS-Sydney held a 'Celebration of a Decade' Dinner on March 3 with the official guests including the NSW Minister for Transport and Roads (The Honourable Carl Scully MP), Professor Phil Goodwin (Professor of Transport Policy and Director of the ESRC Transport Studies Unit, University College London) and Mr Jim Bosnjak AO. Professor Goodwin gave the keynote address on Universities and the contribution of Transport Centres. The Chancellor (Dame Leonie Kramer), the Vice-Chancellor (Professor Gavin Brown), The Pro-Vice Chancellor (Research) (Professor David Siddle), Pro-Vice Chancellor (College of Humanities and Social Sciences (Professor Ros Pesman), Dean of the Faculty of Economics and Business (Professor Peter Wolnizer) and the Head of the School of Business (Associate Professor Bob Bartels) also attended. Alumni and guests witnessed a magnificent night of recognition that signalled how successful ITS-Sydney has become and in the words of Professor Goodwin "Is one of the few truly internationally reputable Transport Centres".

Each year that I sit down to write the Director's Report, I marvel at the achievements over the last 12 months. ITS is small in terms of staff numbers but big in terms of its research and teaching output. We have done well as a result of a very strong commitment to excellence and to the Universities within which the two nodes reside.

The Systemwide Advisory Committee meeting on March 2 saw Professor John Taplin AO preside as Chair for the last time. In John's words 'it is time to step down now that ITS is secure. I am proud to have played a small role in what is truly Australia's premiere transport research institute'. Thank you John for your support and the manner in which you have encouraged the Advisory Committee to actively contribute to the ongoing activities of ITS. With John retiring, the senior Professoriate of both nodes met to review the next phase in Advisory support. A strong view emerged that the success of the nodal advisory committees was such that this should become the external forum for seeking advice. It was decided that as of 2002, ITS would have in place an Executive Committee comprising the Director of ITS and the heads of each node together with two additional academics from each node nominated by the heads of each node. In addition, the nodal advisory committees when meeting would invite one executive member who is based with the other node. Each node will be responsible for membership and activity of their Advisory Committees. The Constitution of ITS has been amended to reflect this new structure.

On a personal level, I am deeply appreciative of the University of Sydney nominating me in May for a Federation Fellowship (an initiative announced by the Prime Minister in January). We would also like to thank Professor David Siddle (Pro-Vice Chancellor Research at Sydney) who moved to the University of Queensland. His support has been greatly appreciated and we shall miss his advice.

ITS-Monash has had a productive year. During 2001, ITS-Monash co-ordinated the transport policy lecture series, hosted a seminar on “Intelligent Transport Systems: Tools or Toys?” and another entitled “Safety, Customer Service and Profitability: Managing Risk and Compliance”, ran workshops on Traffic Engineering and Management in Melbourne and at the Monash University campus in Malaysia, presented five postgraduate and five undergraduate subjects, and continued to run the industry programs in Parking and in Bus and Coach Operations. The research effort has been directed along the supervision of six postgraduate students. The year saw increased success in research funding and culminated in ITS-Monash hosting the 2001 Conference of Australian Institutes of Transport Research (CAITR).

In February, ITS-Monash staff spent a day and a half at an internal discussion seminar aimed to define achievements and set a five-year plan for the node. The discussion focused on three major areas of operation, namely industry programs, postgraduate courses and research activities. It was encouraging to note how many of the objectives set for the previous two years had been achieved. All staff felt that the time spent was very useful in helping individuals to work more closely with each other as the centre crosses from funded to self funded status, and seeks to broaden the arenas within which it operates.

I am greatly appreciative of all the staff at both nodes in contributing to the success of the Institute of Transport Studies.



David A. Hensher FASSA  
Director

### 3. ENROLMENTS FOR 2001

A summary of student numbers is given below for the various programs.

#### Sydney:

##### Graduate Program

Year	GradCertTM			GradCertLM		
	Local	Internat.	Total	Local	Internat.	Total
1999	15	0	15	7	0	7
2000	6	1	7	15	0	15
2001	3	0	3	5	0	5

Year	GradDipTM			GradDipLM		
	Local	Internat.	Total	Local	Internat.	Total
1999	16	2	18	na	na	na
2000	5	1	6	2	1	3
2001	4	1	5	5	0	5

Year	MTM			MLM			PhD		
	Local	Internat.	Total	Local	Internat.	Total	Local	Internat.	Total
1999	22	11	33	na	na	na	2	1	3
2000	10	7	17	13	4	14	2	3	5
2001	7	5	12	16	14	30	4	2	6

##### Certificate Programs

Year	CTM (bus & coach)	CCM	CLM
1999	53	167	**
2000	31	198	***
2001	47	164	15

\*\* Two executive programs were run.

\*\*\* No programs as yet except via Deakin Australia

#### Monash:

Year	Postgraduate (Coursework)	MEngSc (Research)	PhD	Industry Programs	
				Parking Management	TMC (Bus and Coach)
1999	16	4	2	9	1150*
2000	20	3	3	4	908
2001	28	1	5	8	453

\*This figure updated from 1999 report to include intensive study mode and small operators' enrolments

## 4. MEETING OBJECTIVES

### Objectives

The primary objective of the Institute is to undertake graduate teaching, management development programs, grant and contract research and development in the fields of transport and supply chain management.

The work of the Institute also has the following objectives:

- To provide a focus for University activity in areas of transport and supply chain management and to establish an environment attractive to those committed to excellence in graduate transport and supply chain management programs and research;
- To collaborate with key players having an interest in transport and supply chain management and its applications;
- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport and supply chain management; and
- To seed the development of innovative ideas in transport and supply chain management policy and professional practice in Australia, in which the Institute of Transport Studies plays a role.

### Achieving objectives

These objectives are achieved by

- Developing and offering graduate transport and logistics programs, certificate, management development programs and short courses at both ITS Sydney and ITS Monash
- Bringing high quality transport and logistics management programs to people outside Sydney and Melbourne as well as widening the offerings of courses in Melbourne and Sydney through access to courses provided by both ITS Monash and ITS Sydney
- Contributing to Australia's growing participation in the Australasian and Asia Pacific region in a leadership role in transport and logistics management
- Widening the range of courses available for middle level professional managers in critical areas of transport and logistics not currently served
- Equipping managers in all disciplines (e.g. engineering, economics, planning), the small business sector and local government to succeed in the face of technological, economic and institutional change
- Building on the recognised need for stronger links between education of technical specialists and managers in transport and logistics
- Undertaking research to develop state-of-the-art management practices and technical processes

- Transferring the knowledge developed through research to client groups through the Institute’s publications, workshops, conferences, seminars, and by participation in networks of transport and logistics managers and engineers; and
- Conducting activities that are directly or indirectly related to the attainment of the above objectives.

### Objectives and performance measures

The following table summarises performance measures to show how the Key Centre is meeting its objectives. More detail is provided in specific sections throughout the annual report.

Objective	Performance measure
Australian transport and logistics management expertise highly regarded	Requests for working papers and preparation of a 10 year CD-Rom Requests for involvement in research and consultancy projects Strong enrolments in all levels of education programs from PhD, Graduate program, Certificate programs and short courses Requests for speaking at a large number of venues Editorial positions held by staff on leading international journals
Programs outside Melbourne/Sydney	Delivery of the Graduate Programs in Transport and Traffic by distance education throughout Australia and internationally Delivery of Transport Management Courses in Bus and Coach Operations Delivery of Education Program in Parking throughout Australia by distance education Delivery of Certificates of Bus and Coach Management for Western Australia Offer of distance based programs for New Zealand Introduced five web-based courses for Sydney Graduate Programs
Contribute leadership in Australasia and Asia Pacific	Participation in Asia Pacific and Australasian Conferences Aviation and Maritime research for Asia Pacific countries Supervision of PhD students in South East Asia and New Zealand Commencement of a joint venture in graduate education in Vietnam with Ministry of Transport
Courses in critical areas for middle managers and small business	Executive Programs in Logistics Management/Supply Chain Management and Freight Management conducted Short courses and workshops conducted to meet specific needs Delivery of a distance program in Logistics and Supply Chain Management with Deakin Australia Delivery of a distance program in Logistics and Supply Chain Management with Ford International through Deakin Australia Development of a two-day Train the Trainer Assessment Centre course for Bus and Coach Personnel
Link transport engineering and management education	Short courses and workshops integrating engineering and management Short course on travel surveys, transport policy and transport scheduling Short courses on discrete choice modelling, stated choice methods
State of the art research	Many research projects for range of government and private clients Publications in leading journals 3 new PhD commencements in 2001

Transfer of research to transport community	<p>Through publications including 24 working papers, conferences, journals and books such as <i>Operating a Bus and Coach Business</i>, <i>Roads and the Community</i>, <i>Traffic Engineering and Management</i> and <i>Stated Choice Methods: Analysis and Applications</i></p> <p><i>Eight papers presented at the World Conference on Transport Research, Seoul, South Korea July</i></p> <p>Published <i>Transport: An Economics and Management Perspective</i> (Oxford University Press) which appeared in January 2001</p> <p>Through presentations and attendance at conferences and seminars.</p>
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## 5. THE ITS TEAM

### ITS Sydney

#### Academic and Research Staff

*David Hensher*, BCom (Hons) PhD *UNSW*, FASSA FCIT FAITPM CompIEAust MAPA

Professor of Management

Director, Institute of Transport Studies and Head of ITS-Sydney node

A Fellow of the Academy of Social Sciences in Australia, Immediate Past President of the International Association of Travel Behaviour Research and Immediate Vice-Chair of the International Scientific Committee of the World Conference of Transport Research, David has published extensively (over 270 papers) in the leading international transport journals and key journals in economics as well as seven books. In January this year he published *Transport: An Economics and Management Perspective* (with Ann Brewer), Oxford University Press. One of his books - *Stated Choice Methods* (with Jordan Louviere and Joffre Swait), Cambridge University Press, was published in September 2000.

Major areas of teaching and research are transport economics, transport strategy, transport policy, sustainable transport, productivity measurement, discrete choice methods, stated choice experiments, privatisation and deregulation. David has advised numerous government and private sector organisations on matters related to transportation.

*Ann Brewer*, BA MCom (Hons) *Macq* PhD *UNSW*, MCIT

Associate Dean of Postgraduate Coursework Programs, Faculty of Economics and Business, Acting Head, School of Business (Oct-Dec).

Professor of Organisational Logistics, Director, Industry Programs and Director, Graduate Program in Logistics Management

A specialist in organisational behaviour, human resource management, Ann has experience in a many industries, with major projects on current issues such as teleworking, generational issues in business, value chain management, the impact of the Sydney Olympics on transport, educational needs of adult learners, all of which are pertinent to transport and logistics management. Ann has published numerous papers and five books. Ann is co-author (with David Hensher) of *Operating a Bus and Coach Business* (Allen and Unwin, 1997) and *Transport: An Economics and Management Perspective*, Oxford University Press (2001).

In her role as Director of Industry Programs, Transport & Logistics, Ann has developed two distance programs in Logistics and Supply Chain Management, one with Ford International through Deakin Australia and the other with Deakin Australia. Also directs the ongoing bus and coach programs in the Institute of Transport Studies.

*Peter Stopher*, BSc (Eng) (Hons) PhD Lond, MASCE, MASA, MITE  
Professor of Transport Planning

A specialist in travel-demand forecasting, travel behaviour research, transport survey methods, and transport and environmental issues, Peter has more than 33 years of professional experience as a university teacher and as a professional in transport planning, and has published more than 130 papers in leading international journals and has also published a number of books in transport-related topics. Peter is currently editing a book on *Transport Survey Quality and Innovation* to be published in 2002, and is also working on a new edition of his 1975 book on *Urban Transportation Planning and Modelling*. He has made major contributions to the profession as a founding member of the TRB Committee on Traveler Behavior and Values, of which he has just been awarded Emeritus Membership, and also founded the TRB Committee on Survey Methods.

Peter's current teaching and research cover transport policy and planning, environmental analysis, travel demand modelling, travel forecasting, and survey methods and design. He is pioneering the use of GPS devices in transport data collection, and is also working on standards for household travel surveys and the simulation of travel survey data. Peter has also advised agencies around the world on various aspects of transport planning and data collection.

*Shams Rahman*, MSc Belarus ME Asian IT PhD Exeter  
Senior Lecturer in Logistics

Shams joined ITS Sydney on January 1 2001. Shams specialises in the fields of logistics and supply chain management, quality management and business modelling. His most recent prior appointment was with the Graduate School of Management at The University of Western Australia and prior to that, he was on the teaching and research staff of Universities in Australia, the United Kingdom and Thailand. Shams has published widely in the international journals which include *International Journal of Physical distribution and Logistics Management*, *Journal of Operational Research Society*, *European Journal of Operational Research*, *International Journal of Quality and Reliability Management*, *Global Business Review*, *Total Quality Management*, *International Journal of Operations & Production management*, and has a research interest in the areas of logistics and supply chain management, theory of constraints, quality management in logistics, and policy analysis & deployment of services. Currently, Shams is editing a book on supply chain management. He has also worked in a public transport corporation, and in various positions in training and development institutes.

*Tu Ton*, BE MEngSc PhD  
Senior Research Fellow

Tu has skills in traffic and transport engineering, EIA of transport infrastructure and traffic and transport computer modelling using artificial intelligence technology including object-oriented programming, artificial neural networks and knowledge based expert systems. In 1997 Tu established the ITS Sydney Geographical Information System (GIS) and advanced computing laboratory as well as promoting GIS to bus operators. Tu is leading an ITS team developing a new strategic transport planning decision support system – The Transport and Environment Strategy Impact Simulator (TRESIS).

*Jenny King*, BBuild(Hons) GradDipCom *UNSW MTM Sydney*  
Senior Research Analyst (until May 2001)

Jenny coordinated various research program in ITS. Jenny has skills in survey design, data collection and analysis, and desktop publishing. She was most recently involved in managing ITS' International Benchmarking Program in Bus and Coach as well as a number of research and consultancy projects, such as the M2 Marketing study, parking strategies for the CBD, and the ABCA Fact sheet. Jenny resigned in May to focus on her new 'career' with the birth of her first child.

*Kirk Bendall*, BBus, MTM, MCIT JP  
Research Analyst (until April 2001)

Kirk joined ITS in November 1997 after completion of the Master of Transport Management at The University of Sydney. He worked most recently on the TRESIS project; acquiring primary data, acquiring ABS Census data, data transformation to fulfil TRESIS required inputs, electronically mapping Sydney rail, bus, light rail and ferry route systems, developing digital networks of Sydney's major roads with lane, capacity and speed attributes, and modifying GIS spatial resolution to suit modelling requirements. Support to other staff with Census and Journey to Work maps and data is provided as required. Documentation and coordination with the TRESIS team and visiting interns rounds out the scope of activities. His professional fields of interest include intelligent transportation systems and advanced traveller information systems (ATIS). Kirk is also the Consumers Federation of Australia representative on the Standards Technical Committee for Transport Information and Control Systems. He was also a NOC Assistant Volunteer for the Egyptian Olympic team during the Sydney 2000 Olympic Games.

*David Wilson*, BA, MSc, PhD *Northwestern University*  
Visiting Senior Research Fellow (from April – November 2001)

Dr David Wilson joined ITS in April on leave from RMIT to participate in the development of TRESIS and contribute to the graduate logistics program.

*Philip Bullock*, BSc (Applied Geography) (Hons)  
Research Analyst

Philip joined ITS in May 2000. He is providing research and administrative support to the Director and ITS academics and most recently coordinates a number of research projects for Professor Peter Stopher. Projects in 2001 include GPS systems as a way of evaluating the reliability of travel survey data, analysing a survey of environmental attitudes, testing the development of synthetic household travel survey data, and statistical analysis of a survey of service quality in the bus sector. He has previously worked in a large wholesale company where he managed transport and distribution.

*Cam Ngo*, BEngSc *Vietnam* MEng *USA* MEngSc PhD *UNSW*  
Research Analyst

Cam joined ITS in September 1998. Cam's major field is highway, traffic and transport engineering and local area traffic management. His interests lie in artificial intelligence and knowledge-based expert systems. He is working on the TRESIS

project; which has included entering the speed data and lane data into the Sydney road network, collecting and entering bus-headway of bus routes in Sydney into the bus route database, entering bus routes into map layers, preparing and creating busway layer for rapid bus routes, analysing and classifying the vehicle data for the scrappage model, estimating public transport cost, and creating zone to zone length (access/egress and bus route lengths), travel times (access/egress and bus times) and bus fare matrices. He is currently working to prepare data for TRESIS versions 1.3 and 2.

*Freddy Susanto, BSc UNSW*  
Computer Programmer

Freddy is working on the TRESIS project, where he is involved in building the input and output user interface for the TRESIS program and map object programming.

*Frederic Horst, BBA(equiv)*  
Research Analyst (from August 2001)

Frederic joined ITS as a Research Analyst in August 2001 and is working for Professor Stopher on the project on GPS systems as a way of evaluating the reliability of household travel survey data, and also on developing metadata standards for ITS, and cataloguing and archiving data sets acquired and used by ITS.

*Marijana Vurmeska,*  
Research Analyst (from December 2001)

Marijana Vurmeska is responsible for providing research assistance to Professor Ann Brewer. She joined ITS in December 2001 and is currently involved in a number of projects including a survey of Prospective postgraduate students and employers and a Human Resource Management Trends study. A graduate of The University of Sydney, she completed her Bachelor of Arts (Psychology) degree in 1998 and her Master of Philosophy (by research - Architecture) degree in 2001. Her thesis was focused on the visibility of drug use in public places and its influence on young people's attitudes to drugs. After the completion of her MPhil, Marijana worked as a research assistant to Professor Elizabeth Webby and Dr Alison Bashford on a large ARC grant entitled 'Nation, Citizenship, Cultures – Australia and the region'.

## **Administrative Staff**

*Michelle Coulson, BA MTM Sydney, MCIT, CTM*  
Course Co-ordinator, Industry Programs (until August 2001)

Michelle joined ITS in January 1998. She commenced work in the bus industry as a trainee at John J Hill Bus Service prior to commencing employment with the Busways Group of Companies. Michelle was more recently employed as the Operations Manager (Sydney Region) with Busways. Michelle's tertiary qualifications include a Bachelor of Arts from The University of Wollongong and a Master of Transport Management from The University of Sydney. Michelle has been the first point of client contact for ITS' Industry programs and coordinated the industry programs on a daily and continuous basis; including the revision of notes, marking of assignments,

providing help desk services, liaising with lecturers, clients and participants, marketing, conducting major mail outs and booking venues.

*Virginia Burns*

Course Co-ordinator, Industry Programs (from October 2001)

Virginia joined the Institute of Transport Studies in October 2001. Prior to joining The University of Sydney in 2000, Virginia spent eight years working in the Vocational Education & Training sector with TAFE NSW, at the Hunter Institute of Technology, where she gained considerable experience in student administration, educational planning, international student support and business development. Virginia's most recent appointment at The University of Sydney was Executive Assistant to the Pro Vice-Chancellor (Teaching & Learning).

Virginia is the first point of client contact for the Certificate of Coach Management and the Certificate of Transport Management. Virginia is responsible for coordinating the Institute's Industry Programs which includes the administration of student services from enrolment to certificate presentation across a wide range of industry programs offered by ITS.

*Gary Mariano, MSCE*

Computer Systems Officer

Gary is responsible for server administration at the network level and user support and workstation maintenance at the user level. He is also responsible for the design and maintenance of the homepage.

*Kirsten Jakobsen, BSc/BA (Hons) ANU*

Personal Executive Assistant

Kirsten provides administrative and secretarial support to the Director and ITS academics, coordinates the day to day administration of the graduate program, coordinates the ITS Systemwide and local node Advisory Committee meetings, produces desktop materials for the graduate program, certificate program, short courses, ITS functions and generic ITS flyers. Her background lies in university administration for both The University of Sydney and The Australian National University.

*Jesu Roman MMgt*

Finance and Personnel Officer (from April 2001 until August 2001)

Jesu was responsible for all of the Institute's finances, personnel and travel details. She maintained and assisted in the design of the accounts database, processed purchase orders, invoices, receipts and banking, and maintained all personnel records of all staff. She was also responsible for budgeting and financial planning, reconciliation of monthly statements and providing accounts and general administrative support.

*Ruth Olip*

Finance and Personnel Officer (full time until February and casual from March)

Jesu took over from Ruth in April but Ruth continues to provide specialist advise on finance matters and provides administrative support when required.

*Prayag Datt*

Finance and Personnel Officer (on secondment from CHASS, February to April 2001)

Prayag filled the Financial Officer position on a temporary basis, taking over from Ruth Olip.

*Anne Fernando, ACMA*

Finance and Personnel Officer (from October 2001)

Anne took over the role of Finance Officer from Jesu. She is responsible for the Institute's financial and personnel details. Her duties include day to day operations of the finance section, maintaining and monitoring of financial records, reconciling monthly statements, ordering stationary, raising invoices, and so on. She is also responsible for updating ITS budgets, preparation of revised budgets and interacting with the Director of ITS and the Faculty manager.

She is a fully qualified accountant with professional membership of the Chartered Institute of Management Accountants (UK).

*Milena Romic, BA MA (Psychology)*

Assistant to Associate Dean / Research Analyst (until December 2001)

Milena is assistant to Ann Brewer in her role as Associate Dean of Postgraduate Coursework Programs, Faculty of Economics and Business. A graduate of the University of Sydney, she has previously undertaken administrative work around Sydney and London. From June Milena moved to a Research Analyst position.

**Adjunct Faculty***Elizabeth Barber, MEconSt UQ*

Elizabeth continues an academic career spanning the past twenty years, teaching at the University of Queensland, Australian National University, University of Canberra and University of New South Wales. Her research interests include project management, transport economics, logistics and supply chain management. For the past ten years she has been involved in military logistics researching logistics and supply chain initiatives for the Australian Defence Force. Her recently published book "Asset Visibility in the Australian Military" highlights these interests. Her forthcoming book, "The Logistics of the East Timor Campaign" is due for publication in mid 2002.

Elizabeth co-teaches Strategy and Supply Chain Management and the Industry Laboratory with Ann Brewer.

*Trevor Heaver, BA Oxon MA PhD Indiana*

UPS Foundation Professor of Transportation & Director of the Centre of Transportation Studies

Trevor is Professor Emeritus, University of British Columbia. He is a past Chairman of the World Conference on Transportation Research, the Past President of the International Association of Maritime Economists and was recently Francqui Chair Professor, University of Antwerp. Trevor is focusing his research on issues related to ports, shipping and international supply chain management. Particular topics include: performance measurement and benchmarking port terminals; interface problems between container terminals and inland carriers; the restructuring of the liner shipping industry in response to market and regulatory changes; organisational issues for exporters in international supply chain management.

*John M.C. King, LLB ANU MTM Sydney*

Managing Director, Aviation and Tourism Management

John is a consultant who concentrates on aviation and tourism policy, strategy and management. He is the Chairperson of the Travel Compensation Fund and has in the past served as an advisor or Board member of a number of industry associations, including the Pacific Asia Travel Association, the Board of Airline Representatives of Australia, Australia National Travel Association (now Tourism Council of Australia). John's clients include The World Bank, The World Tourism Organisation, foreign governments, international and domestic airlines and a number of travel agencies. He has worked as a consultant in the following countries – Samoa, Papua New Guinea, Pakistan, Ethiopia, Thailand, Philippines, China and the South Pacific generally. Prior to setting up his own consultancy, John worked for 20 years as an airline executive.

*Jay Sankaran, BTech Madras MS Iowa PhD Chicago*

Visiting Lecturer

Senior Lecturer in Operations Management, Faculty of Business and Economics, University of Auckland

Jay is Senior Lecturer in Operations Management at the Faculty of Business and Economics, University of Auckland. Jay is currently pursuing both empirical and modelling-based research in logistics and supply chain management. The former concerns an inductive investigation into third party logistics contracts. The latter concerns the application of mathematical models for inventory control at a leading Australasian manufacturer of printed circuit boards. Jay runs an intensive 4 week course on Logistics Management in the graduate program.

*Alastair Stone, MSc DEng*

Visiting Fellow

Managing Director, Pacific Infrastructure Corporation

Alastair has over thirty years experience in banking, economics and engineering. He has successfully initiated, implemented and participated in major projects and infrastructure deals. He has also advised various international and domestic agencies and governments; including the Asian Development Bank, World Bank, Jakarta Municipal Government, Shanghai Municipal Government, and several Australian State Governments, on private sector participation policies and strategies. His career

has covered all facets of urban affairs including senior positions with the World Bank, Lend Lease and Merrill Lynch. Alastair teaches in the area of joint ventures in public infrastructure projects. Alastair presents in the graduate program Infrastructure Planning, Financing and Tendering course with Rodney Swan.

*Rodney Swan*, BSc (Hons) Mtech  
Visiting Fellow  
Managing Director, BGP Pty Ltd

Rodney is one of Australia's leading strategists in competitive bidding for public and private sector service projects, with a number of successful infrastructure projects to his credit. He is highly experienced in the financial and operational requirements of projects, with expert knowledge of opportunities in the transport, health and environment sectors. Rodney teaches in the graduate program in infrastructure planning and outsourcing.

### Full-time PhD Students

*Baojin Wang*, MEng PhD

A registered engineer in civil engineering, Baojin has experience in highway and transport engineering. He has consulted on 26 engineering projects and has skills in project management. His PhD research is on the development of risk taking modelling framework for road safety. The thesis was submitted in February and accepted in July. Baojin graduated with his PhD on 26<sup>th</sup> October.



*Dr Tu Ton with Dr Baojin Wang at his graduation ceremony*

*Alejandra Efron*, BEng Argentina MSc Brazil

An industrial engineer (Argentina), Master in Logistics (Brazil) and a specialist in International Transportation (UNCTAD), Alejandra has worked for Ryder Latin America leading the development and implementation of Toyota's interplant logistics, ISO9002 certification and other tasks. Her interest is in researching the logistics strategy choice for small and medium firms using Stated Preference techniques.

*Wafa Dabbas*, BSc MSc

Wafa holds a Bachelor of Science in Civil Engineering and a Master of Science in Engineering from the UK. She has experience in transport policy and planning and has skills in international procurement and projects management. Her current research area is in Transport and the Environment, in particular modelling traffic vehicle emissions for air quality assessment.

*Tapash Saha*, BEng MEngSc

Tapash is specialising in the freight sector with particular reference to the courier market in urban areas.

*John Rose*, BEc

John's interest is in choice modelling and stated choice experiments. His thesis focuses on the development of interactive agency choice experiments in the urban freight sector.

### **Part-time PhD Students**

*Seu Cheng*, BA MA (Econ) *University of Manitoba, Canada*

Seu's PhD research focuses on the issue of integrated logistics management and its implications on shippers' choice of freight intermediary service attributes and the valuation of time in the supply chain. Seu discontinued her studies in August for personal reasons.

*Virginia Fazio*, BSc (Hons), DipEd, MBA *Melb*, MSc, PGDipDiet *Deakin*

Virginia's area of study focuses on investigating corporate governance of health service organisations, specifically looking at the role of the board and organisational performance.

### **Visiting Researchers**

*Richard Johnson*, BEc

Richard is a PhD student from the Department of Economics at University of Uppsala, Sweden and an active member of the Centre for Transport Economics (CTEK), Borlänge, Sweden. As part of his PhD research, Richard is currently developing a Computable Equilibrium model. He returned to Sweden in May.

*Zetao Luo*, PhD

Associate Professor and Director of the Institute of Transport Economics at Nankai University, China. Zetao came to ITS Sydney in February to spend a year as a visiting research scholar. His research focuses on Economical Analysis on Traffic Pollution Control, and Logistics Management Strategy in the 21<sup>st</sup> Century.

*Maria Vredin Johansson, PhD*

Maria has a PhD in Economics from Umeå University in Sweden. Her research has focused on nonmarket valuation in the fields of transport and environmental economics. Maria is now a researcher at the Centre for Transport and Economics at Dalarna University in Sweden. She is visiting ITS from August 2001 to February 2002. At ITS she will be working on a project for the Swedish National Road Administration (SNRA) aiming at improving SNRA's benefit values for time and safety. This will mainly be done through enriching the standard travel choice model with psychometric data. Based on data from a recent Swedish RP/SP survey of commuters between Uppsala and Stockholm, a linear structural equation model will be used to identify latent variables significant for modal choice. Together with objective modal characteristics, fitted values of the latent variables will be used to explain choice. As a final step, values of time and safety will be derived from the estimated model.

**ITS Monash**

*Geoff Rose*, BEng QIT MSc PhD *Northwestern*, MIEAust CPeng  
Associate Professor  
Director, ITS Monash

Geoff's professional interests cover intelligent transport systems, travel behaviour and non-motorised transport. His experience spans government, consulting and academia. He is Director of the postgraduate program in transport being offered by distance education and is the author of three units (Intelligent Transport Systems, Traffic Engineering Fundamentals and Transport Network Models) offered as part of that program in the 2001 academic year. Active research projects relate to travel time forecasting on motorway networks, impacts of intelligent transport systems on travel behaviour and strategic planning of field service systems. Geoff undertook a sabbatical leave program in semester 2, 2001. During that time, he progressed bus safety research in Canada, collaborated on a project in France on the use of mobile phones to collect traffic data, and spent time developing professional links in Malaysia during a visit to the Monash University campus in Malaysia.

*William Young*, BE GradDipMgt MSc PhD, FIEAust FCIT CPeng  
Head, Department of Civil Engineering, Monash University

Bill is Head of the Department of Civil Engineering and a recognised specialist in parking and transport land use interaction. His research interests also cover infrastructure management and computer systems. Bill has taken an active role in developing course material and short courses in Traffic Engineering and Management.

*John Clements*, BCom DipEd MEc MAdmin *FCIT*  
Program Director, Transport Management Course in Bus and Coach Operations

John joined ITS Monash in July 2000 after spending many years on the staff at RMIT University. Prior to joining ITS (Monash), John was Acting Head of the School of Marketing at RMIT University, and had previously been Head of the Department of Marketing, Logistics and Property and a Principal Lecturer responsible for the

Transport and Logistics management Group at RMIT. John is a Fellow of the Chartered Institute of Transport, a Member of the Logistics Association of Australia and an Associate Fellow of the Australian Institute of Management. His major academic and research/consulting interests are in transport economics, policy and management. He has professional and consulting experience in the public sector, including the Victorian Ministry of transport, the public transport operating authorities and water resource boards. John is a member of the editorial advisory board of the International Journal of Logistics: Research and Applications. He has recently undertaken a quality assurance audit with Open Learning Australia for a Supported Learning Centre in Singapore.

*Stephen Greaves* BA Leeds, MSc Wales, PhD Louisiana State University  
Lecturer, Department of Civil Engineering

Stephen joined the team in January of 2001 after completing his undergraduate studies at Leeds University in England and his PhD at Louisiana State University in the United States. Stephen's academic interests include the generation of synthetic household survey data for travel model calibration, the collection of micro-level activity/travel data using advanced technologies, and the environmental impacts of human travel behaviour. Stephen has already successfully published in these areas and is currently working on a funded project to integrate driver behaviour to obtain more sensitive estimates of vehicle emissions.

*Astrid De Alwis*, BA Melb GradDipTr&DistMgt RMITU, MCIT  
Assistant Program Director, Transport Management Course in Bus and Coach Operations

Astrid is a consulting logistician with a strong interest in Transport Systems, which she has taught or practised during the last twelve years. She has worked as a transport consultant to several commercial organisations, and published key documents for some of them. Astrid's chief strength lies in her varied and cross-disciplinary educational and experiential background. Having worked in government, industry and academia, and on local and international projects, Astrid brings to ITS-Monash a broad blend of skills and aptitudes. While assisting with the ongoing development and delivery of the Transport Management Course in Bus and Coach Operations, Astrid is also pursuing a Masters program, which enables her to explore the nexus between transport, logistics and information technology.

*Andrew Haines*, BSc  
Technical Support

Andrew provides technical support in the computing and systems area.

*Brenda O'Keefe*  
Administration Manager

Brenda is responsible for managing administrative support at ITS Monash. She has a major involvement in the Transport Management Course in Bus and Coach Operations where she handles general course enquiries, student enrolment and record keeping as well as all written communications with students throughout the semester. She manages the production of all distance education material and supports other ITS

activities including seminars, workshops and public lectures. Brenda has also taken on the role of administering all aspects of the Department of Civil Engineering's distance education postgraduate program in Transport and Traffic and the new course in Infrastructure Engineering and Management which will be launched in 2002. This includes processing enrolments, re-enrolments, withdrawals and completions, undertaking web site development, and carrying out extensive liaison with the Distance Education unit at Gippsland, other areas within the university system and the faculty's postgraduate officer. Brenda has also been heavily involved this year in the redevelopment of the ITS student database which plays an integral part in administering the TMC in Bus and Coach, as well as in the organising of workshops, seminars and conferences. The new data base was successfully brought on line in December 2001 (phase 1) and will be networked to ITS Monash staff (phase 2) during 2002.

*Julia Arnold*, MB, BS, BSc(Med), BA(Hons) *Sydney*  
Finance Assistant

Julia came to work at ITS-Monash for six weeks in January 2000 and is still there! She works one day a week to provide monthly income and expenditure reports, budgets, projections and other financial accounting services, as well as assisting with reports and other large administrative tasks.

*Faye Bulled*  
Administration Assistant (February 2001 to July 2001)

Faye was appointed in order to deal with the daily administrative tasks of the unit, and to assist with implementing the revision of three units from the Transport Management Course in Bus and Coach Operations, which took place in the first half of 2001. Her duties included word processing of new courseware material, answering enquiries and record keeping. She also assisted with the processing of enrolments and liaised with the Administration Manager to ensure that enrolment procedures were completed in a timely fashion.

## **Adjunct Faculty**

*Ken Ogden*  
Manager (Public Policy), RACV

Ken has over 30 years of experience in transport and public policy. He founded the transport group at Monash University in 1969 and was a Professorial Fellow when he left in 1996 to join the Royal Automobile Club of Victoria (RACV). He is currently Group Manager (Public Policy) in the RACV, where he has responsibility for the Club's advocacy activities and research in such areas as road and vehicle safety, traffic engineering, transport planning and policy and traffic safety education. He is heavily involved in the organising committee for the World Congress on Intelligent Transport Systems which will be held in Australia in 2001.

*Rahmi Akcelik*, CivEng *ITU PhD Leeds*, Fellow IEAust, Fellow ITE  
Director, Akcelik and Associates Pty Ltd  
Dr Akcelik is an Adjunct Professor in the Department of Civil Engineering at Monash University and a leading scientist and software developer in the area of traffic

management, with over 190 technical publications in his area of expertise. His recently formed research and software company specialises in the areas of road traffic operations, traffic engineering, management and control. Dr Akcelik is a member of the Signalised Intersections Subcommittee of the UK Transportation Research Board Committee on Highway Capacity and Quality of Service, and is also on the Transportation Research Board Committee on Traffic Signal Systems. His current areas of activity include software development, training workshops and consultancies on traffic signals, roundabout design options and greenhouse gas abatement through traffic management measures.

*Rita Seethaler MEd Berne*

Rita graduated with a Master of Economics and Political Science from the University of Berne, Switzerland, in 1994.

She has worked for the Swiss Federal Office of Statistics and for the Bureau of Transport Studies (Federal Department for Environment, Transport, Energy and Communications), Berne. She is presently a Director of the Urban Transport Institute, Victoria and an Associate of the Institute of Transport Studies (Monash University). She is the author of the postgraduate unit *Infrastructure project and policy evaluation*, which is offered by distance education as part of the postgraduate program in infrastructure engineering and management at ITS-Monash.

*Tony Richardson BE(Hons) MEngSc UNSW PhD*

Tony has wide experience in academia, having worked at Monash University, RMIT, the University of Melbourne, the University of Sydney and Cornell University in the USA. He has also worked for the Australian Road Research Board, the Victorian Ministry of Transport and in his own consulting practice.

As well as being an Adjunct Professor at Monash, Tony is also a Director of the Urban Transport Institute, Victoria. He is the author of the postgraduate unit *Infrastructure project management* which is offered by distance education as part of the postgraduate program in infrastructure engineering and management at ITS-Monash.

## Visiting Research Scholars

*Eric Hildebrand*, University of New Brunswick, Canada (Visitor to ITS Monash: December 2000 to March 2001).

Eric Hildebrand, PhD, PEng, is an associate professor in the Civil Engineering Department at the University of New Brunswick (UNB), Canada. Eric has worked as a consultant and researcher for a number of years in the road safety area. He is a coordinator of the UNB Accident Research Team and has undertaken a number of road safety studies dealing with topics such as vehicle crash worthiness, human factors, highway design, and traffic engineering. While at ITS (Monash) he undertook research on bus safety.

*Masao Kuwahara*, ME Univ. of Tokyo, PhD Univ. of California, Berkeley Professor of Traffic Engineering, Institute of Industrial Science, University of Tokyo (Visitor to ITS Monash: December 2000 to May 2001)

Professor Kuwahara's research interests include traffic control, highway capacity, network analysis, traffic simulation and ITS related research. He is currently working

on traffic signal control for an oversaturated network, travel time provision, dynamic network assignment, and parameter tuning of traffic simulation models. He has been appointed a member of various committees of ministries, local government, and public corporations on transportation planning and traffic management. He has served as a board member of ITS World Congress, an International Advisory Committee member of ISTTT, etc. His recent publication, entitled “Dynamic User Optimal Assignment with Physical Queues for a Many-to-Many OD Pattern,” is to appear in the near future in *Transportation Research*. (Part B).

*Esmaeel Ayati*; MSc, Civil Eng. *Teheran Uni.* (1968), MPhil, Structural Eng., *London Uni.* (1974), PhD, Transportation Management, *Aston University* (1988) (Visitor to ITS Monash: December 2000 to May 2001)

Associate Professor Ayati has worked as a consultant in the UK and Iran and has also served as Executive Deputy in the Port and Shipping Organization of Iran, Planning Deputy Minister of Road and Transportation Ministry of Iran, and Research Vice-Chancellor of Ferdowsi Uni. of Mashad (Iran). He has been teaching in the University of Science and Technology(Tehran) and Ferdowsi University of Mashad, for the last 25 years. At present he is the full time Associate professor in Ferdowsi University. His main field of research work is traffic safety, and he has finalized three comprehensive research projects in this field and has another one under way. He has published more than fifteen papers in domestic and international journals and conferences. He is a member of REAAA and PIARC.

### PhD Students

*Darryn Paterson*

Darryn’s PhD research is focused on the prediction of travel time on motorway networks. A macroscopic queuing model has been combined with real-time data from operational motorways to provide improved accuracy in travel time prediction. After submitting his thesis for examination in 2000, Darryn began working with Booz Allen Hamilton in their Melbourne Office. He graduated in 2001.



*Associate Professor Geoff Rose and Professor Bill Young with Dr Darryn Paterson (centre) at his graduation ceremony*

*Jim Youngman*

Jim's PhD research is focused on the strategic planning of field service operations, specifically the determination of optimal operating boundaries for field service teams. Jim has many years of experience in operations research related to field service management through a long career with the RACV.

*Merle Chan*

Merle is examining the impact of in-vehicle navigation systems on travel behaviour. The study focuses on the mobility impacts of these devices but recognises that there are related safety impacts through changes to exposure. She completed her undergraduate degree in civil engineering at the University of Auckland.

*Tim Martin*

Tim is a principal research engineer with ARRB Transport Research Ltd, and commenced his PhD in April 2001. He is working on the prediction of pavement performance at a road network and road project level.

*Tan Yan Weng* BE MEngSc MCILT MIES'pore MREAAA

Yan Weng is an Associate Professor in the School of Civil and Structural Engineering at Nanyang Technological University, Singapore. His current PhD research is in the area of parking systems design, with particular emphasis on developing an interactive stated preference approach to collect information on parking behaviour in multi-use facilities.

## 6. RESEARCH AND POLICY

### New in 2001

#### Large ARC Grant (ITS Sydney)

ITS Sydney was successful in securing a three year ARC grant (\$215,000) to undertake a study titled Extending Theoretical and Empirical Domains of Travel Time Valuation to Accommodate Time Heterogeneity, SP Design Strategy and Error Covariance Structure.

#### Large ARC 'Near Miss' Grant (ITS Sydney)

Modelling Induced Travel for Urban Road Projects

#### ARC Sesquicentenary Grants (ITS Sydney)

ARC Sesquicentenary grants were secured for four projects:

- An Integrated Supply Chain Based Urban Freight Model System: Stage 1. Development of Behavioural Choice Models
- Exploring Application of a Procedure for Simulating Household Travel Data in Australia
- Agile Supply Chain
- The Knowledge Worker: A Case-study of Innovation and Change (in collaboration with Dr Finkelstein in the Faculty of Arts)

#### ARC Research Equipment Grant (ITS Sydney)

GPS and Satellite Tracking

#### Simulating Household Travel Data in Australia (ITS Sydney)

This research represents a continuation of work undertaken by Professor Peter Stopher at Louisiana State University, a method was developed to synthesise household travel survey data from a combination of data sources from the US Census and the 1995 National Personal Transportation Survey (NPTS). This involved creating distributions from NPTS data of pertinent variables (numbers of trips by purpose, mode of travel, time of day of travel, and trip length), and using them to estimate travel-demand models. A sample of local region residents was then drawn from the weighted Census data, providing detailed information on the socioeconomic characteristics of the sample. Using these socioeconomic characteristics, travel data were simulated from the distributions developed from the NPTS data. The results of the simulation were then compared with actual travel surveys undertaken in the simulated regions.

Using a similar methodology, household travel data will be synthesised for a number of Australian cities using a combination of data from the ABS Census and local travel surveys. This process holds out considerable promise for replacing the collection of larger samples of household travel data, particularly for small and medium sized urban areas and subareas of large metropolitan areas, where the expenses of samples of 2,500

to 4,000 households are too great for the transport planning organisations to cover, but where data are needed for local model estimation.

#### **Use of Passive GPS to Collect Household Travel Data (ITS Sydney)**

This project involves the use of a passive, non-intrusive Global Positioning System (GPS) unit to measure where people travel and to determine the conditions under which the travel takes place. The record from the GPS will form the basis of a subsequent prompted-recall interview to obtain additional information about the travel that cannot be recorded on the GPS device, such as trip purpose and mode of travel. The research is being undertaken on behalf of the New South Wales Roads and Traffic Authority (RTA).

This research will allow us to test and refine the protocol for using passive GPS instruments, to collect more accurate and complete geographic data, and also to determine how such data from a subsample of households could be used to correct or factor the data collected by more conventional diary surveys. In addition, we will be able to explore questions of route choice, and congestion impacts on travel, and the variability of travel from day to day. The results of this research will have important implications for improving our knowledge about people's travel in metropolitan areas and also for reducing the potential burden of future travel surveys.

#### **Patronage Forecasting Study (ITS Sydney)**

Patronage Forecasting Study for the Western Sydney Orbital undertaken for Transfield/Bouyge Consortium using TRESIS version 2.0. In addition a large value of travel time savings study for car (commuter, non-commuter), light commercial vehicles and heavy vehicles was undertaken to establish new values of time savings for Sydney.

#### **NCHRP 8-37: Standardising Personal Travel Surveys (ITS Sydney)**

This project is being managed by Professor Peter Stopher, with a team comprising Louisiana State University, Westat, Inc., The Franklin Hill Group, and a team of expert advisors, including Professor Martin Lee-Gosselin (Canada), Werner Broeg (Germany), Kay Axhausen (Switzerland), Joanne Pratt (U.S.A.) and Alan Pisarski (U.S.A.). The project is funded by the National Cooperative Highway Research Program of the U.S. National Academy of Sciences/National Academy of Engineering.

The objectives of this NCHRP project are to develop objective standards that would lead to an overall increase in the quality and reliability of transport surveys performed at household and person levels, and would also improve the comparability between surveys. These standards will provide guidance on how to select cost effective survey methods, how to implement the survey itself, how to analyse the results, and how to report measures that allow the assessment of the quality of the data. By establishing consistent and objective standards, comparability of data from place to place and time to time will be enhanced. The reliability of the data will be increased, and doubts as to the applicability of data should be able to be removed. It is also an objective of this research to identify the costs and tradeoffs for the procedures and assessment measures that are identified in this research, and to establish whether specific procedures and assessment measures are worthwhile to introduce as standards.

Phase I of the project, involving the identification of opportunities for standards and guidelines, development of a classification of those opportunities, and development of a scope of work for Phase II implementation, has been completed and an interim report has been submitted to NCHRP.

#### **An Empirical Investigation into Critical Success Factors in Agile Supply Chains (ITS Sydney)**

A key feature of the present day business is the idea that it is supply chains that compete, not companies. There is a growing interest in seeking an understanding how a supply chain might be “agile”, as opposed to just being efficient, lean, quality driven, pro-active rather than reactive. However, despite the growing interest, the majority of the research has focused on the development of conceptual frameworks; there is an absence of empirical studies testing hypotheses based on theory in this field. The aim of this study is to initially identify some of the factors critical for successful agile organisations in managing their supply chains. We seek to identify a range of factors that differentiate ‘more agile’ supply chains from ‘less agile’ supply chains. The purpose is to test potential sources of differentiation identified from the theory and to develop a framework on which to base further research. The objective is to identify and understand key leverage points when seeking to create an agile supply chain.

#### **Incorporating driver behaviour into vehicle emissions estimates (ITS Monash)**

Motor vehicles are the most significant contributor to noxious air pollutants in urban areas throughout Australia and the rest of the world. The seriousness of this problem requires that all proposed transportation projects must be evaluated for their potential air quality impacts using approved procedures and tools. Current evaluation procedures for estimating vehicle emissions for a region such as Melbourne use default emission factors developed from national studies that reflect how a “typical” motorist drives. The key parameters in these studies include the vehicle type, acceleration/deceleration, idle time, and cruise speed. However, these default values do not reflect different driving styles (e.g., aggressive vs. cautious), different network configurations (e.g., speed limits, gradient, geometric configuration) or other factors that intuitively must be considered when developing local emissions estimates. This research aims to determine whether driver behaviour has a significant effect on the factors underlying vehicle emission factor calculations, to identify the most critical determinants of differences in driver behaviour and to develop and test a methodology to tailor default emission factors to reflect driver behaviour/local conditions and thereby improve the reliability of subsequent emissions estimates. A New Staff Member Research Grant awarded to Stephen Greaves will fund this work.

#### **Quantification of road pavement performance at a road network level and a road project level (ITS Monash)**

It is postulated, and generally observed, that pavement performance is influenced mainly by levels of maintenance expenditure, climate, traffic loading and its associated dynamic effects and the structural condition of the pavement and its variability along the pavement. All factors are interrelated and correlation of these factors is prevalent in the usual historical performance databases used in quantifying pavement performance. This research aims to develop improved network and project level roughness deterioration models. The quantification of pavement performance will take the form of deterioration relationships expressed as a function of time, traffic loading and

other variables and will cover sealed granular pavements (typical of 95% of Australia's sealed road network) and the typical range of traffic levels and climatic conditions for pavements (network and project level) within most road networks in Australia. Pavement performance will be assessed by an overall serviceability and surface condition measure and an overall structural condition measure. More accurate deterioration models will improve the reliability of the estimates of road wear and cost allocation (with implications for heavy vehicle charging), of the estimates of the differences in road maintenance costs that are due to the various climatic regions in Australia, and of the estimates for maintenance and rehabilitation scheduling along each road in the road network (with implications for the estimation of the capital costs of increased pavement capacity under the regime of increased road use).

#### **Mutual recognition of bus operator accreditation (ITS Monash)**

This project investigates similarities and differences between bus and coach operator accreditation schemes in various States and Territories in Australia, and future options and equivalence requirements for a set of uniform national standards.

### **Continuing from 2000**

#### **Commuter Coping Strategies During the Sydney Olympics (ITS Sydney)**

The Olympics Road and Traffic Authority has provided partial funding for a four-wave survey of Sydney commuters, designed to monitor their intentions leading up to the Olympics and to observe actual plans during the Olympics in respect of how they will cope with the increased traffic and disruption. Through a four panel we can identify how reliable stated intentions are prior to the Olympics. We specifically focus on the range of coping strategies of commuters, the support they get from their employers as well as employer constraints that limit the options. As well we have investigated how effective the marketing campaigns have been in reducing the amount of commuting travel during the Olympics.

#### **Freight Strategy for 2010 for NSW (ITS Sydney)**

The Road and Traffic Authority commissioned David Hensher to design and facilitate a one-day consultative workshop on the NSW Freight Strategy 2010, held on 15 February 2000. A report was prepared following the workshop that integrated all of the discussion. Key themes developed included the broadening of the freight task to recognise the complexities of the entire logistics chain, the growing emphasis on a multi modal perspective and the move away from the unproductive debate on road vs. rail, the need for more research to gain a better understanding of the industry and opportunities for change, and the major constraints on the freight task due to badly location of inefficient terminals and hubs. Follow on work integrating this workshop information into the Freight Strategy document was also undertaken.

#### **Modelling of Induced Demand (ITS Sydney)**

Prepared for the Roads and Traffic Authority of NSW (Traffic Technology Division), the objective of this study was to identify an appropriate mechanism for empirically estimating the magnitude of induced traffic demand in the presence of new road infrastructure. There were three key elements to the review process – 1. the

establishment of an appropriate functional form for a generative model of travel demand that explicitly accounts for changes in levels of service (typically represented by an index of generalised cost), 2. the nature of data required to estimate such a model to reveal appropriate elasticities of demand, and 3. in the absence of an ability to estimate the generative model locally, to source elasticities from the extant literature that represent the range over which local evidence is most likely to reside.

#### **Cross City Tunnel Project (ITS Sydney)**

David Hensher was appointed as a special adviser to Transfield and Warburg Dillon and Read venture on the proposed cross-city tunnel project in Sydney.

#### **Melbourne-Brisbane Section of the Australian Inland Railway (ITS Sydney)**

David Hensher gave specialist technical advice to ATEC (Australian Transport and Energy Corridor Ltd.) on the pre-feasibility study of the Melbourne-Brisbane Section of the Australian Inland Railway.

#### **Quality Partnership with the BCA NSW (ITS Sydney)**

The quality partnership between ITS Sydney and the Bus and Coach Association of NSW (BCA) commenced in 2000. It is a five-year agreement with an annual donation to ITS Sydney of \$50,000. The commitment of ITS Sydney to this quality partnership involves a series of discrete activities, all of which support the objectives of the BCA and provide advice and information in various forms. In 2001, these activities included the development phase of a methodology to establish a meaningful and administrative feasible measure of service quality (SQI), actively promoting SQI to the Director-General of Transport, giving presentation of the pilot SQI study to John Stott, the CEO of State Transit (STA), working with STA and a number of private operators in developing the SQI approach further as a tool readily available and operational for both PAR and the broader interests on knowing one's customers, design of a 2-day training program for recruitment officers which is jointly badged as an ITS-BCA initiative, general contribution through Conferences such as ABIC, ATRF and Thredbo series, providing intelligence to the BCA on many matters of interest, and providing commentary and input into the planned program to update the non-commercial contract costing and case for revised contract fees.

#### **TRESIS (ITS Sydney)**

ITS is continuing to develop its urban passenger transport model system called TRESIS – Transport and Environmental Strategy Impact Simulator. The model system is a combined set of models for representing travel, location and vehicle decisions of individuals and households to reflect the growing interest in the environment. The urban passenger transport system contributes to the achievement of broader goals of urban management and the performance of urban areas. It also supports the evaluation of an expansive set of identified policy instruments. The system differentiates and evaluates both aspatial and spatial strategies via Geographical Information Systems (GIS) and system linkage, as well as urban versus spillover impacts beyond the urban area. It emphasises the system-wide impacts of particular policies as well. The current project team members are David Hensher, Tu Ton (project coordinator), Freddy Susanto (from 24 July), David Wilson and Cam Ngo.

The first version of TRESIS (Tresis V1.2) was released in November 2000. It is a beta version for evaluating at a strategic level impacts of a large number of transport and non-transport policy instruments on the performance of cities (Sydney, Melbourne, Adelaide, Brisbane, Canberra and Perth) as measured by changes in accessibility, greenhouse gas emissions, modal shares for commuting, car use, consumer surplus and many more outputs indicators.

TRESIS version 1.3 with enhanced capabilities in the areas of non-work travel, traffic assignment, mapping displays, input and output interfaces and base year data update to 1998 was released in December. Version 2.0, with capability to forecast patronage in the Sydney context at a traffic zone level is due for release in 2002.

#### **Road and Public Transport Networks (ITS Sydney)**

As part of the development of TRESIS, ITS Sydney has developed and released its road and public transport networks for Sydney. Known as SydNet-Roads, SydNet-Bus, SydNet-Rail, SydNet-Ferry, SydNet-Light Rail and SydNet-Transitways, these can be purchased under a licence agreement.

#### **Equipment Grant (ITS Sydney)**

ITS Sydney won a University equipment grant to upgrade the Advanced GIS computer laboratory

#### **Development of Assessment Centre (ITS Sydney)**

For the State Transit Authority, New South Wales, ITS Sydney is undertaking the development of an assessment centre. This project continued from 1999. The tools were developed and implemented in November.

#### **Web Based Learning (ITS Sydney)**

ITS Sydney received a \$15,000 grant entitled “Interactive Learning (Problem-Based Learning) PLB Module: A Prototype” from the Education Sub-Committee of the Information Technology Centre, The University of Sydney to develop web-based materials and resources.

#### **Identifying Policies to Reduce Car Use in New Zealand (ITS Sydney)**

Funded via Dr Carolyn O’Fallon of Pinnacle Research (NZ), ITS undertook a study into identifying policies to reduce car use in New Zealand. A stated preference design was developed to evaluate alternative options to car use for various trips when faced with a range of levels of parking availability and price, public transport fares, fuel prices, etc. New funding in 2001 enabled this project to continue.

#### **Estimation of the Sydney Travel Model System – Stages 1 and 2 (ITS Sydney)**

In partnership with Hague Consulting Group (HCG) estimated the new suite of travel demand models for commuting and non-commuting behaviour as input into the updated STM system, being implemented for the Transport Data Centre of the NSW Department of Transport.

**Parking in Multi-use Facilities (ITS Monash)**

This study investigates the application of parking modelling to the design and enhancement of multi-storey parking facilities. The PARKSIM model is used as a base and vehicle movement in multi-storey facilities modelled to enhance its present capabilities. The microsimulation model considers different user and vehicle types within a mixed use development as well as different types of parking operations. It incorporates algorithms for route choice, car following and lane-changing within the car park and external road network.

**Equilibrium Modelling of Land Use Activities (ITS Monash)**

This study builds on the development of the LAND package. It investigates the role and use of equilibrium modelling on improving the prediction of land values and location preference of residents and businesses. The model will be applied to the Brisbane region.

**Transport Policy and People with Disabilities (ITS Monash)**

The project looks at the needs of people with disabilities and the ability of the transport system to meet these needs. In particular, the present level of infrastructure and the need for retrofitting of equipment will be investigated.

**Accuracy and Traffic Simulation Modelling (ITS Monash)**

This project looks at the reliability of traffic simulation models. In particular it investigates the assumptions made in the model and their impact on the output. Particular attention will be paid to assumptions about drivers risk taking.

**Dynamic Speed Control on Free ways (ITS Monash)**

A review of overseas experience has highlighted that increased throughput and improved road safety can result from varying freeway speed limits. This project is exploring the development and application of these systems in Australia.

**Travel Awareness Through Survey Feedback (ITS Monash)**

Feedback from travel diaries is being used to encourage participants to modify their use of motor vehicles and thereby reduce the environmental effects associated with vehicle emissions.

**Capacity Analysis of Bicycle and Pedestrian Facilities (ITS Monash)**

Field data are being collected in Melbourne to examine the applicability of the American capacity guidelines to Australian conditions.

**Modelling Small Area Traffic Networks (ITS Monash)**

This project investigates the relationship between parking, traffic flow and pedestrian movements in retail developments by developing a microsimulation model.

**Environmental Impacts of Transport (ITS Monash)**

This project explores the relationship between land use, transport and the environment. Long term changes in transport and their impact on land use and the environment are investigated.

**Electronic Road Pricing (ITS Monash)**

This project looks at the development of road pricing technology and the likelihood of the introduction of road pricing in Australian cities.

**Modelling Transport Demand and Parking Management (ITS Monash)**

This project models urban travel on a city-wide scale using activity analysis.

**Vehicle Movement at Intersections (ITS Monash)**

This study is investigating the modelling of vehicle movement on exit intersections. It is particularly interested in determining the interaction between acceleration, car-following and lane changing associated with vehicles moving off from signalised intersections.

**Sustainability and Urban Transport (ITS Monash)**

This project explores the interaction between the transport system and sustainability of cities. The study proposes a number of projects and investigates their utilisation of framework acceptability.

**Estimating Real Time Travel Time on Freeways Using Artificial Neural Network Techniques (ITS Monash)**

Melbourne's Drive Time system provides motorists with an indication of the travel time to various exits along the freeway and a colour-coded indication of the level of congestion in-between exits. The Drive Time system relies on speed data received each 20 seconds from inductive loop detectors located about every 500 metre along the freeway. This speed data is used to estimate the travel time along each segment of the freeway. This project aims to develop improved models for predicting travel time from the same underlying database. Neural network models are being developed to predict travel times in future time periods and then a 'time slice' model will accumulate those segment travel times to obtain a journey travel time. This project is a continuation of the research undertaken by Dr Paterson into an enhanced Drive Time model.

**The Modelling and Intelligent Optimisation of Field Service Territories (ITS Monash)**

Field service is concerned with the delivery of services to customers who are spatially distributed. Common examples are emergency services (police, fire and ambulance), photocopier or computer repair, home maintenance (e.g. plumbers and electricians) and roadside vehicle breakdown services. For a variety of reasons, it is common for service staff (henceforth referred to as "units") to be assigned to territories each of which is manned by one or more units. Two distinct forms of travel occur in field services. In cases such as ambulance and fire services the requests are often so urgent that there must be a small probability that no units are available when the request is received. This implies that utilisation will be small and units would normally return to their base station at the end of a job: "round trips". The focus of this project will be the

“sequential” trip situation where utilisation is much higher and units usually travel directly from one job to the next. The aim of the project is to find a process for subdividing any region into territories that results in near minimal response times for service requests, assuming the total number of staff available is fixed.

#### **Impact of In-vehicle Navigation Systems on Drivers' Travel Behaviour (ITS Monash)**

In-vehicle navigation systems (IVNS) are now available in Australia as a result of the production of navigable map databases for major Australian cities. These devices provide synthetic voice turn-by-turn guidance to assist the driver in navigating to a nominated destination.

These in-vehicle devices have the potential to improve safety and mobility. This project focuses on the mobility aspect by exploring the extent to which devices of this form can influence decisions relating to trip timing, trip frequency, destination, mode choice and route choice. The extent of impact will be determined by the data collected from a field study. Private car drivers will be recruited to receive a trial usage of an IVNS for up to three weeks. The participants will be required to keep a travel diary. The recorded trips will facilitate a comparison of their travel behaviour before and after the usage of IVNS. To capture their route choice behaviour, two interviews will be conducted to understand the decision process employed by each participant during route planning. The last part of data collection requires the participant to indicate their stated choices of destination and trip timing and their willingness to pay for the IVNS in a self-completion questionnaire.

#### **Level of Service on Roads (ITS Monash)**

Knowledge of driver's perception of the level of service on roads is required in order to design road networks. This project has investigated drivers' perception of the level of service of a number of roads. It has shown that drivers consider the safety, speed and provision of parking in determining the level of service in residential streets.

#### **Performance Based Standards for Heavy Vehicles (ITS Monash)**

This study has explored the role and potential for performance based standards in improving the economic, safety and environmental performance of the road system. This study is part of an Austroads project on Performance Based Standards for Heavy Vehicles.

#### **Bus Safety in Australia (ITS Monash)**

Continuing research initiated during the sabbatical leave of Professor Hildebrand, a series of research projects are exploring the issue of bus safety in Australia. Part of this research focuses on clarifying the type of vehicle involved in fatal bus accidents and the actual involvement of the vehicle in the crash.

## **Other Activities and Projects**

#### **Handbooks in Transport (ITS Sydney)**

David Hensher was appointed in 1999 as volume and series editor for a series of Handbooks in Transport with Ken Button (George Mason University) by Elsevier

Science Ltd. Three handbooks have been published under the Pergamon imprint over a period of 3 years. The first handbook on Transport Modelling was published in 2001, the second on Logistics and Supply-Chain Management and the third on Traffic Systems and Control have been published in 2001.

The second volume – Handbook of Logistics and Supply Chain Management published in 2001 has been adopted by The Institute of Logistics and Transport (ILT). ILT is the result of the Institute of Logistics merging with the UK Chartered Institute of Transport. Ann Brewer is a co-volume editor and reviewer of the second volume. An additional 3 volumes to complete the series has been designed. The themes are spatial planning systems, transport and the environment, and transport policy and institutions. These will be published in 2003, 2004 and 2005.



### 23<sup>rd</sup> Conference of Australian Institutes of Transport Research (CAITR) (ITS Monash)

CAITR-2001 was organised and hosted by the Institute of Transport Studies at Monash University between Monday 10 and Wednesday 12 December. CAITR is a low cost conference, which aims to maximise the opportunity for transport researchers to discuss their work with peers and colleagues in a supportive, informal environment and to be part of a network of expertise. CAITR is particularly valuable to recent researchers (PhD and Masters students and undergraduates by research), giving them the chance to present work in progress, receive constructive feedback and improve presentation skills.

This year's conference attracted 35 high quality papers on topics including applications of ITS, transportation data issues, land-use/transportation interaction, travel behaviour, environmental impacts, pedestrian planning, traffic management, and freight. The best undergraduate paper was judged to be by Christopher Coath (Monash University) on "Special Events Planning." The best postgraduate paper was by Jim Youngman (Monash University) on "Field Service Territories".

The conference was a great success and stimulated interesting debate that continued well into the evenings at the social functions. The next conference will be at the end of 2002 at the University of New South Wales.

## 7. EDUCATION

### ITS Sydney

The Education program at ITS Sydney includes:

- PhD program;
- Masters by Research Program;
- Graduate transport & logistics management program;
- Certificate programs; and
- Executive short courses.

ITS offers a fully articulated set of programs in transport and logistics management education, as shown below. Note that articulation between programs is not automatic. An MPhil (Transport & Logistics Management) is also available as a research degree.

#### PhD program

Baojin Wang graduated in September 2001 with his thesis titled “Revealing the Safety of the Road Environment from Driver Responses: Investigation of Driver Behaviour under Specific Road and Traffic Conditions”.

Students in the PhD program at ITS (at the end of 2001) include:

##### *Full-time*

Alejandra Efron (2000): Supply chain and stated preference methods

Wafa Dabbas (2000): Air quality modelling for urban areas

Tapash Saha (2001): Urban freight modelling in the courier sector

John Rose (2001): Interactive agency choice experiments in the freight sector

##### *Part-time*

Virginia Fazio (2001): Corporate governance in health service organisations

#### Graduate Transport and Logistics Management Program

The transport management program includes the Master of Transport Management or Logistics Management (8 units), the Graduate Diploma in Transport Management or Logistics Management (6 units) and the Graduate Certificate of Transport Management or Logistics Management (4 units).

There are currently over 60 students in the graduate program. 22 students graduated in 2001.

16 new Masters students, 3 new Graduate Diploma students and 4 new Graduate Certificate students enrolled in 2001.

## Courses

ITS taught the following transport and logistics management courses in 2001:

### *Summer Session (1-13 February)*

- International Logistics
- Special Topic in Transport Management: Transport Policy and Planning Issues

### *Semester 1*

- People, Work and Organisation
- Contemporary Issues in Transport
- Transport Economics and Management
- Geographical Information Systems for Planning and Marketing
- Research Project: Discrete Choice Methods

### *Winter Session (June - July)*

- Logistics Management

### *Semester 2*

- Transport Planning and Survey Methods
- Strategy and Supply Chain Management
- Logistics Systems
- Environment Systems Assessment
- Transport Modes and Systems
- The Industry Laboratory

## Student awards

The awards will be presented at the Institute of Transport Studies annual presentation dinner in early 2002 to be attended by students, alumni students, staff and supporters of the Institute.

- The Institute of Transport Studies prize for excellence in full-time study in the MTM program was awarded to Oi Mei Chu
- The Chartered Institute of Transport Ken Hillyar award for best Year 1 student in the MTM program was awarded to Richard Connors
- The Chartered Institute of Transport Sir Hudson Fysh award for best Year 2 student in the MTM program was awarded to Lai Shan Lau
- The Australian Institute of Traffic Planning and Management prize for best student in the Graduate Diploma program was awarded to Frederic Horst
- The Logistics Association of Australia Industry Logistics Prize was awarded to Andrew Komli.

## **Certificate programs**

### **Certificate of Transport Management (Bus/Coach)**

The CTM was established in conjunction with the Bus and Coach Association (NSW) to provide managerial training for the bus and coach industry. It is the only program to meet the accreditation requirements under the NSW 1990 Passenger Transport Act.

In 2001, ITS conducted 1 CTM course with an intake of 47 students.

### **Certificate of Coach Management**

The Certificate of Coach Management (CCM) is specifically designed for coach operators accredited for long distance and tourist vehicle services (including overnight charter work).

In 2001, 164 students completed the four-day program. There were 3 CCM intakes in 2001.

### **Certificates of Logistics Management, Freight Management and Supply Chain Management**

This management program first introduced in 1997 meets the needs of professionals involved in logistics, maritime, supply chain management, retail and freight transportation management. The program structure was revised in 1998 with the introduction of two new courses Certificate of Maritime Logistics and Certificate of Retailing Logistics.

### **Student awards**

The CTM, CCM and CLM Certificate Presentation Dinner will be held in conjunction with the Institute of Transport Studies 2002 dinner.

The Bus & Coach Association (BCA) Prize for the best student in the Certificate of Transport Management program, worth \$250 in 2000, was awarded to Jason Bailey.

## **Short Courses and Workshops**

ITS-Sydney ran a successful three-day workshop on discrete choice methods. Using the Limdep software and the recent reference book on Stated Choice Methods by David Hensher (with Jordan Louviere and Joffre Swait), 22 participants from a number of countries were introduced to the latest developments in discrete choice modelling and applications. The course will be repeated in 2002.

## **Distance Education**

### **CTM (Bus and Coach) and CCM (Coach) Western Australia**

In 1998 ITS introduced a distance education format for CTM and CCM in Western Australia with the full support of the Department of Transport (Western Australia) and

Bus and Coach Association (Western Australia). In 2001, there were no enrolments in the WACTM distance program.

## ITS Monash

The educational activities and programs at ITS Monash include:

- PhD program;
- Master of Engineering Science by research;
- Master of Engineering Science by coursework and minor thesis
- Master of Transport and Traffic;
- Student awards (undergraduate and postgraduate)
- Undergraduate student scholarship
- Transport Industry Education Programs; and
- Short courses, seminars and workshops (see section 10 page 67)

### PhD program

Students engaged in PhD research at ITS Monash at the end of 2001 included:

*Merle Chan*: Impacts of in-vehicle navigation systems on travel behaviour

*Tim Martin*: Predicting pavement performance at a road network and road project level.

*Tan Yan Weng* (external): A study of parking in multi-use facilities

*Jim Youngman*: The modelling and intelligent optimisation of field service territories

### Master of Engineering Science by research

Students engaged in Masters research at ITS Monash (at the end of 2001) included:

*Ed Chandra* (external): Equilibrium modelling of land use activities

### Master of Engineering Science by coursework and minor thesis

Students engaged in the thesis component of this degree at the end of 2001 included:

*Fiona Green*: Red light running

*Kate McNally*: Car ownership of residents living in high density apartment developments

*Emmanuel Natalizio*: Part-time metering signals at roundabouts

*Sigrid Sanderson*: Transport for people with disabilities

### Postgraduate Degrees by coursework

The distance education program in Transport and Traffic offers three postgraduate coursework degrees: Graduate Certificate (4 units), Postgraduate Diploma (8 units) and Masters (12 units). Articulation paths are available and an entry option is available

to students who have not completed a Bachelors Degree. There were 28 students enrolled in 2001, representing local and state government as well as consultancies. Students are located all over Australia, as well as several from New Zealand and USA. Some students who initially enrolled in the Graduate Certificate or Postgraduate Diploma programs have already chosen to articulate with the Masters course in order to continue their studies.

Two new units (*Infrastructure project management* and *Infrastructure policy and evaluation*) have been developed in 2001 and will come on line in 2002.

In 2001, the Department of Civil Engineering developed a distance education masters program in infrastructure engineering and management. The course consists of eight subjects that look at asset management, project management and project and policy evaluation, with specialisations in traffic, transport and water engineering. It will be offered for the first time in 2002.

### **Units**

Units taught by ITS Monash staff included:

- Traffic engineering fundamentals
- Road traffic: Engineering and management
- Quantitative methods
- Intelligent transport systems
- Transport network models
- Road safety engineering
- Parking policy and design
- Case studies in transport

### **Student awards**

The following prizes were awarded in 2001:

The Egis Highway Design Prize – awarded to the group of level 4 BE students who submitted the best highway design – Carolyn Wallis, Marcus Wee, Beth Whelan and Matthew White

The Richardson Prize in Transport – awarded to the level 4 BE student showing the greatest proficiency in transport engineering – John Storrie

The Turnbull Fenner Traffic Engineering Prize – awarded to the BE student showing the greatest proficiency in level 4 transport engineering elective subjects – John Storrie

Following the changes to the Masters program, the VicRoads Prize in Transport Engineering was not awarded for 2001, but will be offered again from 2002.

### **Undergraduate student scholarship**

The ITS-Monash Undergraduate Student Scholarship was initiated this year to encourage the brightest undergraduate students to consider a research career in transportation. The inaugural recipient was Chris de Gruyter, a level 3 civil engineering student who was interested in pursuing his transportation studies further. Chris worked from December 2001 to February 2002 on a project supervised by Dr

Stephen Greaves, using GPS technology to form profiles of “real” driver behaviour. Chris assisted with the downloading, processing, and display of the data in a GIS environment. He prepared a working document report that detailed the methodology and presented his work to ITS staff at the recent Transport Research Workshop. Chris’s work was of a very high calibre and ITS Monash staff hope he will enrol as a PhD candidate at the conclusion of his undergraduate degree.

## **Transport Industry Education Programs**

### **Transport Management Course in Bus and Coach Operations**

The Transport Management Course in Bus and Coach Operations was launched in March 1999 and there have been over 2825 unit enrolments since its inception. It is a distance education program and forms part of the industry accreditation system which came into effect in Victoria from 1 May 1999. The distance education delivery is supplemented by a half day introductory ‘face-to-face’ session at the beginning of each semester, for students who are new to the course. More than 1250 operators have successfully completed the course since 1999.

#### ***Course Structure***

The full course consists of four units, each of which requires one semester (12 weeks) of study. Unit selection is determined however by the category of accreditation being sought. The four units are:

- Unit 4101 Introduction to legislation and operations
- Unit 4102 Financial management
- Unit 4103 Human resource management
- Unit 4104 Marketing, planning and operations

All units selected for study need to be completed within two years of initially enrolling in the course.

Operators of scheduled services that operate five or less vehicles (normally school bus operators only) need to complete unit 4101 only.

Operators of scheduled services that operate five or less vehicles who wish to upgrade from small operator accreditation to offer tour or charter services need to complete units 4102, 4103 and 4104.

All other operators (including tour and charter) need to complete all four units.

#### ***Course Review***

Following an intensive review of the course in November 2000 by a panel with wide representation from the bus and coach industry and government (including the Bus Association of Victoria and the Department of Infrastructure), the broad thrust of the distance education program was strongly supported. Agreement was reached on fine-tuning and modifying aspects of the course structure and delivery systems to meet the needs of future participants and achieve some delivery efficiencies. A fee increase was subsequently supported to reflect ongoing cost recovery requirements.

The DOI provided a substantial grant to undertake course redevelopment in 2001/2002, involving revision of subject manuals and associated learning materials and examination papers. With the approval of a simpler course structure of only four subjects, subject revisions were undertaken to update content and improve information accessibility, and corresponding changes were made to examinations. The revisions emphasised the incorporation of recent legislative and regulatory amendments including: accreditation categories and plate display requirements; critical incident management and chain of responsibility; as well as costing/pricing and break-even analysis; OH&S and industrial relations changes; school bus operational requirements; and service delivery, yield management and related services marketing issues.

During 2001 the majority of bus and coach operators in Victoria who were in the industry at the time of the introduction of accreditation requirements under the Public Transport Competition Regulations 1999 successfully completed the TMC. The DOI has now requested preparation of a discussion paper, to be available by June 2002, to facilitate moves to a nationally recognised policy for mutual recognition of accreditation qualifications, based on the requirements of the Sydney University and Monash University TMC's.

Feedback from TMC participants, industry representatives (including the Bus Association of Victoria) and DOI has indicated that the implementation of the TMC has been very successful and the accreditation process is now widely supported. From mid 2001 the majority of new enrolments in the TMC are coming from new entrants. With this steady demand, the on-going viability of the course seems assured.

#### *Awards dinner*

The second annual awards dinner for the course was held on 25 May 2001. Carlo Carli MP, Parliamentary Secretary for Infrastructure, provided the keynote speech.

Nearly 350 operators completed the course in the preceding year and over 140 people attended the evening to celebrate operators' receiving their course completion certificates and the presentation of awards for outstanding performance. The Deputy Vice-Chancellor (Resources) of Monash University, Alison Crook, presented course completion certificates to 59 operators. Industry sponsors announced the nominees and winners of eight awards for outstanding performance in the course.

Industry sponsored awards for outstanding performance in the course in 2000 were:

- The Bus Association of Victoria Overall Award, for best performance in all units was awarded to Graeme Sandlant, Sandlant's, Stawell.
- The Bus & Coach Training Small Operator Award for Unit 2101, Introduction to Bus and Coach Operations, was awarded to Pam Coolahan, Hampden Specialist School, Camperdown.
- The Freehill, Hollingdale & Page Large Operator Award for Unit 3101, Introduction to Bus & Coach Operations was awarded to Steven O'Neill, O'Neill's Bus Lines, Korumburra.
- The Pitcher Partners Large Operator Award for Unit 3102, Financial Management, was awarded to John Hutchinson, G.J.&P.R. Hutchinson, Birregurra.

- The Department of Infrastructure Large Operator Award for Unit 3103, Marketing, Planning and Operations was awarded to Julie Crookes, Frankston & Peninsula Airport Shuttle.
- The Grenda Group Large Operator Award for Unit 3104, Human Resource Management was awarded to John Arms, Grassmere.
- The Ventura Bus Lines Special Encouragement Award, for a new operator achieving outstanding results in all units was awarded to Tim Phelan, Riviera Tours, Bairnsdale.
- The ITS (Monash), Special Achievement Award for an operator achieving outstanding results in all units undertaken in the one semester was awarded to Robert Correa, Owen Correa Outback Adventures, Upwey.



*Awards Dinner, Transport Management course in Bus and Coach Operations - small operators who have successfully completed the course.*



*Awards Dinner, Transport Management course in Bus and Coach Operations – large operators who have successfully completed the course.*



*Associate Professor Geoff Rose, Mr and Mrs Clem Barbary and Alison Crook (Deputy Vice Chancellor (Resources)) at the Awards Dinner, Transport Management course in Bus and Coach Operations*

#### **Education Program in Parking Management**

Bill Young continued development of the distance education program in parking management for the Parking Association of Australia. The program involves four units;

- Unit 1101 Introduction to parking
- Unit 1102 Parking management
- Unit 1103 Parking design & policy
- Unit 1104 Parking technology & information collection.

## 8. PUBLICATIONS

Staff disseminate research and policy work through a wide range of publications from books, journal articles, conference proceedings, working papers and project reports.

### Books and Book Chapters

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- Hensher, D.A. and Button, K.J (eds.) (2001) *Handbook of Transport Modelling*, Pergamon Press, 666pp
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- Stopher, P.R. (2001) Survey and Sampling Strategies in Hensher, D.A. and Button, K.J (eds.) *Handbook of Transport Modelling*, Pergamon Press, 229 – 251
- Dueker, K.J. and Ton, T (2001) Geographical Information Systems for Transport in Hensher, D.A. and Button, K.J (eds.) *Handbook of Transport Modelling*, Pergamon Press, 253 - 269
- Brewer, A.M., Button, K.J and Hensher, D.A. (eds) (2001) *Handbook of Logistics and Supply-Chain Management*, Pergamon Press, 545pp
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- Hensher, D.A. and King, J. (2002) The Leading Edges of Travel Behaviour Research, Overview Chapter in Hensher, D.A. (ed) *The Leading Edge in Travel Behaviour Research*, Pergamon Press, Oxford. 904 pp
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- Hensher, D.A. and Brewer, A.M. (in press) Going for Gold at the Sydney Olympics: How did Transport Perform? *Transport Reviews*.
- Hensher, D.A. (editorial consideration) Towards an Integrated Strategic Urban Passenger Transport Modelling System.
- Hensher, D.A. and Prioni, P. (in press) The Missing Link in Contract Performance Assessment: The Integration of a Service Quality Index into a Competitive Tendering Regime, *Journal of Transport Economics and Policy*.
- Wang, Hensher & Ton (in press) Inferring the Safety of the Road Environment, *Transportation*.
- Hansen, D. and Hensher, D.A. (editorial consideration) Forecasting organisational decisions: Obtaining better estimates of management decisions by combining market and experimental decision data (presented at the annual INFORMS Marketing Science Conference, INSEAD, Fontainebleau, France, 13 July 1998).
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- Hensher, D.A. and King, J. (editorial consideration) Environmental Responsibility on Campus: Stakeholder Views on the Environmental Performance of the University of Sydney.
- Hensher, D.A. (in press) A Systematic Assessment of the Environmental Impacts of Transport Policy: An End Use Perspective, prepared for an invitational special issue of *Environmental and Resource Economics* on 'Tools of the Trade for Environmental Economists', guest edited by Richard Carson.
- Stopher, P.R. and Wilmot, C.G. (forthcoming) Development of a Prototype Time-use Diary and Application in Baton Rouge, Louisiana, *Transportation Research Record*
- Wilmot, C.G. and Stopher, P.R. (forthcoming) Transferability of Transportation Planning Data, *Transportation Research Record*
- Rahman, S. and Sohal, A.S. (2002) A review and classification of total quality management research in Australia and an agenda for future research, *International Journal of Quality and Reliability Management*, Vol. 19, No. 1

- Youngman, J.H.R. (under consideration) An analysis of the uncongested field service repair problem with sequential trips *Journal of the Operational Research Society*
- Youngman, J.H.R. (2002) Field service territories *Road and Transport Research*
- Hensher, D.A. (in press) Road Pricing and Charging: A Commentary *The Warren Centre for Advanced Engineering*

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- Hensher, D.A. and Louviere, J.J. Revisiting the Valuation of Travel Time Savings, allowing for Congestion and Uncertainty.
- Hensher, D.A. F-Tresis: An Integrated Supply Chain Based Urban Freight Model System Embedded in a Passenger-Freight Strategy Impact Simulator
- Hensher, D.A. and Stopher, P.R. Attribute Variability in Stated Choice Designs: Implications for Individual-Specific Models and Valuation of Travel Time Savings
- Hensher, D.A. and Greene, W.G. Distributions to Capture Unobserved Heterogeneity in Mixed Logit Models and Implications for Valuation of Travel Time Savings
- Hensher, D.A. Strategies to Gain Bus Patronage: A Systematic Assessment using TRESIS.
- Tan, Y.W. and Young, W. Simulating parking behaviour in an information rich transport system: A Review

### Conference Proceedings

- Wang, Hensher & Ton (2001) Inferring the Safety of the Road Environment, *Zero Road Toll: A Dream or a Realistic Vision?* Papers presented at the 24<sup>th</sup> Australasian Transport Research Forum, Hobart, Tasmania, 17-20<sup>th</sup> April 2001 (CD)
- Brewer & Hensher (2001) Impact of Staging a Major Event on Commuters' Travel and Work Behaviour, *Zero Road Toll: A Dream or a Realistic Vision?* Papers presented at the 24<sup>th</sup> Australasian Transport Research Forum, Hobart, Tasmania, 17-20<sup>th</sup> April 2001 (CD)
- Hensher (2001) The Valuation of Non-Commuting Travel Time Savings for Urban Car Drivers, *Zero Road Toll: A Dream or a Realistic Vision?* Papers presented at the 24<sup>th</sup> Australasian Transport Research Forum, Hobart, Tasmania, 17-20<sup>th</sup> April 2001 (CD)
- Rahman, S. (2000) A Review of Empirical Research on Total Quality Management Using Scale Development Methods: An Australian Perspective, *The 5<sup>th</sup> International and 8<sup>th</sup> National Research Conference on Quality and Innovation Management*, 12-14 February, Melbourne, Australia
- Brewer, A.M. and Hensher, D.A. (2001) Challenges for Freight Logistics in the New (Value) Economy, paper prepared for the BTE Transport Colloquium, Canberra, 27-29 November 2000.

- Liepe, B. and Young, W. (2001) “Level of service on collection roads”, Proceedings of 20<sup>th</sup> ARRB conference, Melbourne, March 2001, CD Rom
- Rose, G. (2001) Trade offs in ATIS deployment: a case study of IVNS and older drivers. Presented at the National AITPM conference, Melbourne CD Rom proceedings, 8 pp.
- Brewer, A.M. & Wang, B. (2001) “Work-related Travel Activity and the Sydney 2000 Olympic Games: A Longitudinal Study of Commuters Coping Strategies”, *World Congress of Transport Researchers*, Seoul, Korea.
- Rahman, S. (2001) Goldratt's thinking process approach to developing strategies in supply chain, Proceedings of the *Systems in Management 7th Annual ANZSYS Conference 2001*, November 27-28, Perth, Australia

### Conference Proceedings (in press)

- Garling, T. and Young, W. (2001) ‘Perspectives on travel behaviour: Decision paradigms’. Proceedings of the International Conference on Travel Behaviour.
- Sun, X., Greaves S. and Zhang J, (2001). “Tracking personal travel behaviour with GPS: An inexpensive way to collect household automobile usage information”, Institute of Transportation Engineers, Annual Meeting, Chicago, USA, August 19-22
- Tan Y.W. and Young, W (2002) “Simulation approach for analysing the performance of multi-storey parking systems”, International Conference on Seamless and Sustainable Transport, Singapore, 25-27 November

### ITS Working Papers

All Working Papers may be purchased from ITS.

ITS-WP-01-1     *On Measuring Supply Chain Competency of Nations: A Developing Country Perspective* (Prabir Bagchi)

*Abstract*     Ever since the Council of Logistics Management (CLM) adopted the definition of logistics in 1984, the integration of somewhat disparate activities of transportation, procurement, inventory control, distribution management, and customer service has been a major thrust in these firms. Realising the synergy that exists in these functions, many companies have extended the concept further to include entities outside the company to include vendors and their vendors. Supply chain management, as the concept is now called, consists of the entire set of processes, procedure, the supporting institutions, and business practices that link buyers and sellers in a marketplace. Many companies in the developed world have successfully implemented supply chain concepts with spectacular results. While supply chain management is gaining ground in the developed world, it is still a new concept in many developing countries while many others are far behind. A country's competitiveness may be thought of as the result of the combined

activities of the firms operating within the country. Efficient supply chains enable the firms to compete better. Measuring the efficiency or competency of a country's supply chain thus can lead the planners to a more effective development strategy. In this paper, we propose a systematic methodology to evaluate the effectiveness of the flows of materials, information, ownership, and payments in a supply chain and measure a country's supply chain competency.

*Keywords:* supply chain management, logistics, developing country, competitiveness.

- ITS-WP-01-2 *The Impact of Staging a Major Event on Commuters' Work and Travel Behaviour: The Sydney 2000 Olympic Games* (A. M. Brewer & D.A. Hensher)

*Abstract* The Sydney 2000 Olympic Games absorbed a vast proportion of the city's transport and logistics resources. For any city, an Olympics Games is a rare event although the staging of major events is becoming an increasingly frequent phenomenon and has the potential to disrupt transport and distribution if not managed effectively. The Games presented a unique opportunity to investigate commuters' intentions to adjust their work and travel behaviour and to understand the extent that behavioural intentions change over time and in what way, as well as the link between intentions and actual behaviour. To track these relationships, a sample of Sydney commuters were interviewed on three occasions prior to the Games and once after the Games. The main finding is that actual decisions by commuters, in the form of a range of coping strategies during the Olympics period, are moderately associated with *ex ante* intentions. The Olympic Games appeared to have had little influence on commuter travel behaviour. Travel arrangements were favourable and better than expected. The view that chaos would eventuate was found to be inaccurate with Sydney experiencing its most efficient levels of transport service on record.

- ITS-WP-01-3 *Challenges for Freight Logistics in the New (Value) Economy* (Brewer & Hensher)

*Abstract:* Anyone consistently scanning the print media will gain an impression that what is driving the so-called *new* economy is technological change and globalised markets. For years now, businesses have continued to utilise new technology coupled with the upgrading of communications infrastructure so as to compress supply chains and get challenges of procurement as well as managing and co-ordinating warehousing and transportation processes remain. One tactic has been using supply chain management (SCM) and information technology to plan procurement and fulfilment as well as monitoring directly the products through the shipment and billing processes. This paper uses a SCM perspective to differentiate between the new economy and the old as well as the role of knowledge and value creation; and presents an application of the way that the new

economy perspective is used in the development of a strategic outlook in freight management.

ITS-WP-01-4 *TRESIS: A Transportation, Land Use and Environmental Strategy Impact Simulator for Urban Areas* (Hensher & Ton)

*Abstract:* The Institute of Transport Studies has recently developed a Transportation and Environment Strategy Impact Simulator (TRESIS) as a decision support system to assist planners to predict the impact of transport strategies and to make recommendations based on those predictions. A key focus of the simulator is the richness of policy instruments such as new public transport, new toll roads, congestion pricing, gas guzzler taxes, changing residential densities, introducing designated bus lanes, implementing fare changes, altering parking policy, introducing more flexible work practices, and the introduction of more fuel efficient vehicles. The appropriateness of mixtures of policy instruments is gauged in terms of a series of performance indicators such as impacts on greenhouse gas emissions, accessibility, equity, air quality and household consumer surplus. In this paper we introduce TRESIS for the first time to the research community, focussing on the structure of the system and the diversity of applications. Applications are presented to illustrate the diversity and richness of TRESIS as a policy advisory tool.

ITS-WP-01-5 *Choosing between Conventional, Electric and LPG/CNG Vehicles in Single-Vehicle Households* (Hensher & Greene)

*Abstract:* The last twenty years have produced substantial developments in vehicle type choice models with alternative specifications implemented within holding and transaction frameworks (Bunch 2000). Some studies have also investigated the potential substitution between conventional fuelled, alternative fuelled and electric vehicles. Although the majority of the data sources used are revealed preference data, there is a growing number of stated preference data sets. In this paper we use mixtures of revealed and stated preference data to evaluate the choice amongst conventional fuelled, alternative-fuelled and electric vehicles for single-vehicle households. We contrast nested logit and mixed logit models and reveal the influence of unobserved taste heterogeneity and correlated SP treatments in the valuation of vehicle attributes. We show how simpler models that do not allow for unobserved heterogeneity and correlated attributes and choice set effects over the RP and SP treatments has a noticeable influence on the propensity to switch to non-fossil fuelled vehicles as well as switching within conventional-fuelled vehicle classes.

ITS-WP-01-6 *Environmental Responsibility on Campus: Stakeholder Views on the Environmental Performance of the University of Sydney* (Hensher & King)

*Abstract:* Environmental responsibility has become a major theme for Universities. Most have an Environment Committee that advises their Vice-Chancellor on practical approaches to enhancing

environmental practices and education in the University with a broad mandate to develop a University Environment Policy and Implementation Strategy. An essential input into this process is the response from stakeholders to the performance of the policy and the strategy in terms of actions that are seen as both important to stakeholders and successful in achieving the desired outcomes. While not denying that stakeholders' perceptions may not reflect the actual environmental benefits of a policy, nevertheless these perceptions carry huge weight in establishing the effectiveness and acceptability of a suite of environmental strategies. This paper focuses on establishing a framework within which a University can identify how important an issue is to stakeholders and track how successful the university has been in addressing the issues of importance. A specific focus is placed on the mapping of these perceptions with each stakeholder segment to reveal the relative degrees of support. As part of the development of the University of Sydney's Environment Policy, the Institute of Transport Studies on was commissioned to undertake a survey to identify the views of the University's key stakeholders on a number of environmental issues.

ITS-WP-01-7 *Developing a Freight Strategy: The Use of a Collaborative Learning Process to Secure Stakeholder Input* (Hensher & Brewer)

*Abstract:* This paper examines the development process of a Freight Strategy in which stakeholder and action learning theories are used to procure collaborative inputs from key players involved in the Freight Services industry. We review the positions presented by key stakeholders within a workshop setting. With a focus on a broad based discussion from stakeholders, the collaborative learning process sought some very specific directions at a strategic level to assist NSW transport agencies in the development of its Freight Strategy 2010.

ITS-WP-01-8 *The Valuation of Non-Commuting Travel Time Savings for Urban Car Drivers* (Hensher)

*Abstract:* The empirical valuation of travel time savings is a derivative of the ratio of parameter estimates in a discrete choice model. The most common formulation (multinomial logit) imposes strong restrictions on the profile of the unobserved influences on choice as represented by the random component of a preference function. As we progress our ability to relax the restrictions we open up opportunities to benchmark the values derived from simple (albeit relatively restrictive) models. In this paper we contrast the values of travel time savings derived from multinomial logit and alternative specifications of mixed (or random parameter) logit models. The empirical setting is urban car non-commuting in six locations in New Zealand. The evidence suggests that less restrictive choice model specifications tend to produce higher estimates of values of time savings compared to the multinomial logit model; however the degree of under-estimation of multinomial logit is variable, depending on the travel time component.

ITS-WP-01-9 *Behind the Subjective Value of Travel Time Savings: The Perception of Work, Leisure and Travel* (Jara-Diaz & Guevara)

*Abstract:* This paper develops a microeconomic model of time assignment to activities that follows DeSerpa (1971), from which a discrete travel choice model can be derived. An association is then established between the *SVTTS* and other relevant values of time: the value of leisure (or value of time as a resource, in DeSerpa's terminology), the wage rate, the marginal value of work, and the marginal value of travel time. Using a Cobb-Douglas form for utility, in section three we show that the mode choice model can be coupled with a model that links activity times with the wage rate, in such a way that the components of the *SVTTS* can be actually calculated. To give an example of this approach, data on activities (time at work, at home and travelling) and on mode choice from a sample of users in Santiago (two income strata) is described in section four along with models and results. A synthesis and conclusions are offered in the final section.

ITS-WP-01-10 *Safety in the Road Environment: A Driver Behavioural Response Perspective* (Wang, Hensher & Ton)

*Abstract:* The existing literature on road safety suggests that a driver's perception of safety is an important influence on their driving behaviour. A challenging research question is how to measure the perception of safety given the complex interactions among drivers, vehicles and the road setting.

In this paper, we investigate a sample of driver evaluations of the perception of safety associated with a set of typical road environments. A roundabout was selected as the context for the empirical study. Data was obtained by a computerised survey using the video-captured road and traffic situations. A controlled experiment elicited driver responses when faced with a mixture of attributes that describe the roundabout environment. An ordered probit model identified the contribution of each attribute to the overall determination of the perception of safety. An indicator of perceived safety was developed for a number of typical road and traffic situations and for different driver segments.

ITS-WP-01-11 *The Goods-Activities Technical Relations in the Time Allocation Theory* (Jara-Diaz)

*Abstract:* The economic analysis of the allocation of time has focused mainly on the relation between work and leisure. Time was originally viewed as an input to consumption, entering the utility function as an unavoidable constraint and inducing the need to include a time constraint; goods were the relevant variables because their demand was the centre of the analysis. In some areas like home production and transportation, time in consumer theory has evolved from this secondary role towards occupying a prominent place to describe activities as the main variables in utility. Through this evolution, though, little has been done to fully understand the technological

relations between goods consumption and the assignment of time to activities. In this paper we rescue the (implicit or explicit) formal attempts to postulate such interrelations. We formulate and discuss all possible relations among goods and time, identifying four conceptual inequalities representing minimum and maximum time-dependent consumption levels, and minimum and maximum goods-dependent time allocation levels. We propose to consider only two of these relations as actually necessary to include analytically in consumer theory. The impact of this formulation on the value of time analysis is studied. The value of saving time in undesired activities is shown to include a consumption related term, and the value of leisure is shown to vary across activities.

ITS-WP-01-12 *Induced Travel and User Benefits: Clarifying Definitions and Measurement for Urban Road Infrastructure* (Abelson & Hensher)

*Abstract:* A major development of urban road infrastructure may increase road travel by as much as 20 per cent. Such induced travel is of considerable importance for traffic planning and for environmental assessment of projects. But it is often ignored or addressed inadequately in evaluation procedures. Traffic models are often based on a fixed total demand with fixed origins and destinations, subject to changes over time representing economic and demographic growth, but independent of changes in the transport network. The neglect of formal methods to quantify the effects of induced travel needs redressing. This paper describes how to deal with these issues. The paper defines induced travel, reviews the empirical evidence on induced travel, describes how induced trips should be included in economic evaluation, and outlines some traffic modelling methods for producing the appropriate travel data.

ITS-WP-01-13 *Service Quality as a Package: What does it mean to Heterogeneous Consumers?* (Hensher)

*Abstract:* The world of customer surveys is awash with satisfaction scales that assess the degree of satisfaction of each attribute independently of the levels offered by other attributes that represent the package of services provided by a transport supplier. While not denying the potential usefulness of many data collection methods, if service providers are to establish a mechanism for prioritising the improvements in services that produce the greatest gain in consumer satisfaction, it makes good sense to understand the relationships between the attributes, given a knowledge of the weights that individuals place on each attribute. These weights represent the relative importance of an attribute in the overall determination of the satisfaction (or utility) level associated with a specific package of service attribute levels. In contrast satisfaction indicators provide little information on the importance of each attribute (one can be very satisfied with the cleanliness of a bus or train yet it is very low on the list in terms of its importance in the global measure of service quality).

This paper builds on the research by Prioni and Hensher (2000) and Hensher and Prioni (in press) in the development of an integrated service quality index (SQI) and how it can be used to prioritise the user-based benefits from operator-driven service improvements. We establish contextual and socio-economic differences in the SQI index that provide useful guidance to operators in targeting the changes in services so as to maximise service effectiveness for a specific investment outlay.

ITS-WP-01-14 *Using Passive GPS as a Means to Improve Spatial Travel Data* (Stopher)

*Abstract:* Conventional data-collection techniques rely on respondents to report location, time, and distance of a trip. Respondents know few location addresses sufficiently well to permit accurate geocoding, and report perceived times and distances, not actual. GPS survey methodologies tested previously have relied on the respondent to enter information into a PDA as the trip is being made. This paper describes a passive method that provides equally good data, and is followed by a prompted recall interview for additional trip attributes that the GPS receiver cannot record. Data analysis showed that this method performed very well and has potential for full-scale surveys.

ITS-WP-01-15 *Australian Bus Safety: Insights and Issues* (Hildebrand & Rose)

*Abstract:* This report addresses the road safety record of the Australian bus industry. Bus safety has been benchmarked against other modes and countries to identify possible areas of concern. The benchmarking was based on data from Australia, Canada and the United States. Safety initiatives were identified both domestically and abroad and their relevance explored. The primary objectives of the study are to identify critical safety-related bus issues, further refine information requirements, explore possible countermeasures, and to provide a basis for consultation with industry stakeholders.

ITS-WP-01-16 *Survey Data Repair using Hot-Deck Imputation Procedure* (Dadala and Stopher)

*Abstract:* The objective of any survey is to estimate finite population quantities such as population mean of a variable, by sample quantities such as the sample mean. For an accurate determination of the population values, a complete response for the desired variables, among the sampling units is a necessity. However, it is common to find non-responses for some variables among sampling units, such as income. The problem of incomplete data has received attention only recently, although the errors associated with incomplete data were recognized during the last three or four decades. The costs associated with missing data can be very large, given the average cost of a household travel survey on the order of \$150, and the potential loss of an entire household due to one or two items of missing data.

The objective of this study was to repair survey data, i.e., to find a method to replace missing data items. From a review of the literature, it was observed that the imputation methods used to

replace missing data are gaining importance, especially in the fields of Biometrics and Agriculture. An attempt was made in this study to correct item non-response and unit non-response (where an entire record is missing) in transportation surveys using the Hot-Deck imputation procedure. The primary input to this study was the Baton Rouge Personal Transportation Survey data collected in 1997, which has unit and item non-response. In this research, an effective method for data repair was identified and the data were repaired so that no household is excluded from analysis. For unit non-response, the data were studied before imputation to improve their completeness by inference from other members of the household who had responded in the survey. By inference, the non-response could be corrected to an extent although not completely. Finally, by imputation, a complete data set was obtained and on comparing the statistics obtained using the repaired (using Hot-Deck imputation) and unrepaired data, it was observed that the survey estimates obtained after imputation changed compared to the estimates obtained from the unrepaired data. In addition, a test was run in which complete data were changed to have certain data items made artificially missing, and these were then repaired by the same procedure. This procedure showed that hot-deck imputation provided estimates that were closer to true values than those obtained from either the data with missing items, or the data excluding those households with missing items. These results indicate the importance of accurate coding of the survey data and the need to repair data by inference and other data repair methods before any analysis. The paper provides a clear procedure for repairing data using both inference and hot-deck imputation that could be applied to any survey data.

ITS-WP-01-17 *A Review of Empirical Research on Total Quality Management Using Scale Developing Methods: An Australian Perspective* (Rahman)

*Abstract:* Over the last decade, Australian researchers have published widely on various issues of quality management in the context of Australian business. Only a few recent studies measured reliability and validity in the development of quality management constructs and scales through rigorous statistical techniques. Quality management literature was surveyed for studies describing scale development efforts and four studies were identified. These studies were reviewed and identified the statistical techniques and methods utilised to develop scales of measurement. Similarities and differences of techniques of scale development were identified and suggestions are made for those who conduct research and those who evaluate it for possible publication. Although the number of published studies is small, these studies provide a baseline against which scale development efforts will be measured in the future.

ITS-WP-01-18 *The Future of TQM is Past. Can TQM be Resurrected?* (Rahman)

*Abstract:* Over the last two decades, many organisations around the world have adopted total quality management (TQM) in some form.

Rigorous attempts have been made to identify critical elements of TQM. These elements can be classified into two broad categories: soft TQM and Hard TQM. Empirical studies indicated that only a handful of the soft aspects of TQM dimensions contribute to organisational performance. The elements of the soft TQM, such as training and education, loyalty, leadership, teamwork and empowerment are essentially 'people' aspects. The coverage of such elements in the management literature is high and in fact, broadly, management theory and soft TQM are identical. With rapid change and uncertainty in the market and greater emphasis on core competencies, organisations are transforming into modular corporations, and thus the importance of the elements of traditional soft TQM is rapidly diminishing. In the light of these, this study raises a fundamental question: what is the future of TQM?

ITS-WP-01-19 *Tradeoffs in ATIS Deployment: A Study of In-Vehicle Navigation and Older Drivers* (Rose)

*Abstract:* This paper examines the safety and mobility tradeoffs associated with the deployment of Advanced Traveller Information Systems (ATIS). Specifically the impacts of in-vehicle navigation systems for older drivers are explored. The number of older drivers (defined here as those over 65 years of age) will at least double over the next 20 years. Older drivers attempt to compensate for sensory, perceptual, cognitive and physical limitations by modifying when and where they travel. It is likely that ATIS will introduce another compensating mechanism. Introduction of ATIS, in the form of in-vehicle navigation systems, has the potential to improve mobility and therefore quality of life of older drivers. However, because they can also change exposure to road related risk their impacts need further investigation. A research program is outlined which aims to explore the mobility impacts of IVNS through a field trial. Initial qualitative research conducted through focus groups suggests that these systems could produce changes in the number, nature and timing of trips by older drivers.

ITS-WP-01-20 *Going for Gold at the Sydney Olympics: How did Transport Perform?* (Hensher and Brewer)

*Abstract:* The Sydney Olympics held in September 2000 provided an opportunity to monitor the planning of transport provision for the world's greatest sporting spectacular. As the single largest major event, the pressures on a city's transport system are enormous as witnessed by the previous Games in Atlanta and Barcelona. This paper takes a value chain approach to assess transport performance as a crucial element in the delivery of the Sydney Olympic Games. We begin with a brief overview of strategic value, highlighting some generic aspects of value chains followed by the transport delivery system that came to the fore as significant 'drivers' in the value chain. This is followed by a summary of the effectiveness of the buses, trains, taxis, roads and the airport. A more detailed look is provided of the private bus sector where the problems leading up to

the opening of the Games received a great deal of media attention. The paper concludes with two stories: one good, one not so good, about transport and the Olympic Games.

*Keywords:* Olympic Games, transport performance, value chain delivery, forecasts, planning

ITS-WP-01-21 *Changes in the Emission of Air Pollutants and CO<sub>2</sub> from Passenger Cars in Sydney from 1981 to 1999* (Hensher)

*Abstract:* Transport emissions and travel are strongly inter-related. We have come to recognise the importance of measuring the environmental benefits of transport policies. However, we often assume that the relationships between the component emissions and travel are sufficiently complex to limit any efforts to establish broad indicators of emission impacts. This paper brings together accumulating evidence on typical emission rates per urban passenger kilometer for petrol passenger cars for a number of countries distinguishing between key influences on emission rates such as traffic condition and vehicle weight. Given vehicle occupancy levels, we establish estimates of emissions of the main air quality and enhanced greenhouse gas emissions. The emissions of interest are carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM). The paper takes the evidence on emission rates and identifies the levels of travel activity at three points in time for Sydney (1981, 1991 and 1998/99), contrasting the emission levels overall. The evidence suggests that CO has declined substantially over the 20-year period, HC and NO<sub>x</sub> have stabilised, PM<sub>10</sub> has declined markedly while CO<sub>2</sub> has increased substantially.

ITS-WP-01-22 *Work-related Travel Activity and the Sydney 2000 Olympic Games: A Longitudinal Study of Commuters Coping Strategies* (Brewer and Wang)

*Abstract:* The Sydney 2000 Olympic Games were staged in September 2000 and absorbed a vast proportion of the available transport and logistics resources for a significant period of the year. While there was potential for disruption to the transport system and road infrastructure, this did not eventuate. This paper firstly investigates commuter's intentions to adjust their work and travel behaviour in the light of a major event. Secondly, since planning for the impacts of travel during the Sydney Olympics will benefit from early advice on behavioural intentions to specific coping strategies, it is desirable to identify how reliable behavioural intentions are. A covariance structure model was specified to investigate the structural relationships among work and travel intentions and the commuters' context as well as the relationships between commuters' work and travel intentions and behavioural outcome. It was found that intentions to modify work and travel behaviour leading up to a major event remained relatively stable over time. More importantly, early intentions have a significant impact on actual behavioural outcome during a major event. This conclusion has implications for

promoting transport options as early as possible and for employers to put forward and support alternative modes of working to accommodate different patterns of travel to work and to the event.

ITS-WP-01-23 *Real-time Cost Management of Aircraft Operations* (Burrows, Brown, Thom, King and Frearson)

*Abstract:* An unheralded development in aviation technology has been the evolution of aircraft control systems which enable pilots to engage, in real-time, in the cost management of aircraft operations. Drawing on the specialist aviation literature we examine the properties of, and potential behavioural problems associated with, the cost-minimisation ‘menus’ provided in the flight management (cockpit computer) systems of modern commercial airliners. We also analyse problematic measurement issues associated with a key input into these systems, the so-called ‘cost index’, a ratio capturing relevant cost information. Using realistic simulations, our analysis provides an unusually detailed description of cost-driver and cost-behaviour information in a non-manufacturing setting in which participants have significant discretion in relation to the employment of cost-optimising solutions.

*Keywords:* Airline industry, cost drivers, optimisation techniques.

## Project Reports

*Service Quality – Developing a Service Quality Index (SQI) in the Provision of Commercial Bus Contracts*, Report for State Transit and Busways (Hensher, Bullock and Stopher)

## 9. INDUSTRY PARTICIPATION

### Conferences Chaired

- Co-Chair, International Conference on Transport Survey Quality and Innovation, Kruger National Park, South Africa, 5-10 August 2001 (Stopher)
- Executive Chair, 7<sup>th</sup> International Conference on Competition and Ownership of Land Passenger Transport (Thredbo 7), Molde, Norway, June 23-28. Also chaired workshop on *Organisation and Ownership of Public Transport and Infrastructure*, and chaired closing session (Hensher)
- Chaired sessions for World Conference on Transport Research, Seoul, Korea, July 22-26 (Hensher, Ton, Brewer)

### Unpublished Conference, Seminar and Forum Presentations

- *Development of a Prototype Time-use Diary and Application in Baton Rouge, Louisiana* (co-authored with Professor Chester Wilmot of Louisiana State University) 80<sup>th</sup> Annual Meeting of the Transport Research Board in Washington DC, 7 – 11 January (Stopher)
- *Transferability of Transportation Planning Data* (co-authored with Professor Chester Wilmot of Louisiana State University) 80<sup>th</sup> Annual Meeting of the Transport Research Board in Washington DC, 7 – 11 January (Stopher)
- *Summary of Workshop A2 on Stated Preference Applications from the IATBR Conference in Australia in July 2000*, 80<sup>th</sup> Annual Meeting of the Transport Research Board in Washington DC, 7 – 11 January (Stopher)
- *Transport in the 21<sup>st</sup> Century*, Inaugural Ogden Transport Lecture, ITS Monash, 13 March (Stopher)
- *Regulation vs Deregulation*, presented at The Bus Industry Confederation National Conference in Perth, 30 April – 3 May (Hensher).
- Opening keynote address on *regulation and deregulation*, 7<sup>th</sup> International Conference on Competition and Ownership of Land Passenger Transport and Infrastructure, Molde Norway, 23 – 27 June (Hensher)
- Plenary paper *integrated transport, land use and environmental strategy simulators*, 7<sup>th</sup> International Conference on Competition and Ownership of Land Passenger Transport and Infrastructure, Molde Norway, 23 – 27 June (Hensher)
- *Synthesising Population Data: The Specification and Generation of Synthetic Households in TRESIS*, World Conference on Transport Research, Seoul, Korea, 22-26 July (Ton and Hensher)
- *The Valuation of Non-commuting Travel Time Savings for Urban Car Drivers*, World Conference on Transport Research, Seoul, Korea, 22-26 July (Hensher)
- *Service Quality as a Package: What does it mean to Heterogeneous Consumers*, World Conference on Transport Research, Seoul, Korea, 22-26 July (Hensher)

- *TRESIS: A Transportation, Land Use and Environmental Strategy Impact Simulator for Urban Areas*, World Conference on Transport Research, Seoul, Korea, 22-26 July (Hensher and Ton)
- *Developing Standards of Travel Survey Quality*, keynote paper for International Conference on Survey Quality and Innovations, Kruger National Park, South Africa, 5 – 10 August (Stopher, co-author with Professor Peter Jones, University of Westminster, London). Keynote papers, the commissioned resource papers, workshop reports, and a selection of offered papers are expected to be published as a book next year.
- *Using Passive GPS to Improve Spatial Travel Data*, 8<sup>th</sup> World Congress on Intelligent Transport Systems, Sydney, 30 September – 4 October (Stopher)
- *Organisational Change and Uncertainty: Plus ca Change Encore la Meme Chose*, International Research Workshop on New Ways of Thinking about Organisational Change: Discourses, Strategies, Processes, Forms, Sydney, November (Brewer, co-author with J. Finkelstein)
- *Supply Chain or Value Management?* Invited presentation for JLC Strategic Planning Conference, Australian Defence Force, Melbourne, February (Brewer)
- *Supply Chain or Value Management?* Invited presentation for DNSDC Strategic Workshop, Australian Defence Force, Moorebank, May (Brewer)
- *Knowledge Management: A Key Note Address* Invited presentation for Public Sector Quality Network Annual Conference, Sydney, September (Brewer)
- *Business Studies at the Tertiary Level* Association of Independent Schools Professional Development Conference, Sydney, October (Brewer)
- *GPS Systems for Monitoring the Quality of Travel Survey Data* Bureau of Transport Economics, Canberra, 30 November (Stopher)
- *The Mixed Logit Model: The State of Practice and Warnings for the Unwary* Bureau of Transport Economics, Canberra, 30 November (Hensher)

### **Conference and Seminar Attendance**

- 80<sup>th</sup> Annual Meeting of the Transport Research Board in Washington DC, 7-11 January (Stopher)
- 5<sup>th</sup> International Conference on Quality and Innovation Management, Melbourne, 12-15 February (Rahman)
- 24<sup>th</sup> Australasian Transport Research Forum, Hobart, Tasmania, 17-20 April (Hensher)
- 8<sup>th</sup> TRB Conference on Transportation Planning Applications, Corpus Christi, Texas (22-25 April) (Stopher)
- The Bus Industry Confederation National Conference in Perth (30 April – 3 May) (Hensher)
- International Conference on Transport Survey Quality: How to Recognise It and How to Achieve It in Kruger Park, South Africa (4-10 August) (Stopher and Rahman)
- 8<sup>th</sup> World Congress on Intelligent Transport Systems, Sydney, 30 September – 3 October (Rose, Stopher)

- Austroads/PIARC seminar on road management within an integrated transport system to talk on linking the present to the future, Hyatt Regency Coolum Resort, Queensland, 1 November (Hensher)
- Choice Symposium, UC Berkeley, June (Hensher)
- Bus Maintenance Conference, Melbourne, July (Clements)
- Australian Freight Congress, Melbourne, September (Clements)
- 23<sup>rd</sup> Conference of the Australian Institutes of Transport Research, December (Clements, Greaves, Young)
- National Conference of the Australian Institute of Traffic Planning and Management, Melbourne (Rose)
- SETRI Workshop on Travel Time Estimation, Avignon, France, November (Rose)
- 20th ARRB Conference, Melbourne, March (Young)

## Media

- Interview on 31<sup>st</sup> January by James Wakelin from Northern Territory newspaper on the viability of the Alice Springs-Darwin Railway and the ATEC Inland Freight Railway (Hensher)
- Interview on Car Dependency for ABC Radio program 'Queensland Sunday', 4 February 2001 (Rose)
- Interview on BBC Worldservice for the Discovery Program for three part series on the Technology of Transport, November 2001 (Hensher)
- Interview about Traffic Engineering and Management on Global TV2 in Kuala Lumpur in November 2001 (Young)

## Other

- David Hensher provided advice to Alan Griffiths from Quantum (a route alignment company for major road and rail projects) on the East Coast Rail Project on 15 January.
- Peter Stopher held a meeting with the team on the NCHRP Project 8-37 on Standardisation of Personal Travel Surveys on 11 January. This project is now being run through ITS.
- The Department of Industry, Science and Tourism has engaged David Hensher to provide expert commentary and analysis on a draft report analysing the current and possible effects of international airline alliances on the tourism industry and consumers.
- David Hensher and Michelle Coulsen attended the NSW Bus and Coach Association Annual General Meeting and retirement function for Jim Bosnjak and Barrie MacDonald (both members of the ITS Advisory Board and active supporters of ITS) on 22 January.
- David Hensher and Phil Goodwin met with ABIC on 6<sup>th</sup> March to assist in development of National Policy Statement.
- David Hensher and Ann Brewer presented a talk on 'Public Transport Management' to the Mayoral Delegation from the People's Republic of China on

the 16<sup>th</sup> October. The Mayoral Delegation is the most senior ever to travel outside of China for professional training, and is part of a concerted effort by the central government in Beijing to develop its senior management.

- Ann Brewer was invited to present the paper *Business Innovation: Challenges in the New (Value) Economy* to masters students at the Australian Defence Force Academy in Canberra in May.
- Professor Hensher presented a lecture on Transportation Policy and Practice as part of the Research Institute for Asia and the Pacific's (RIAP) Poverty Alleviation: Issues and Strategies Training Program. The lecture was delivered to a group of Chinese delegates from The People's Republic of China National Impoverished Magistrate on December 6.

## 10. INDUSTRY LINKAGES

Other activities by ITS which contribute to industry and community linkages include positions in conference organisations, international committees and editorial positions, as well as overseas visits and public lecture series.

### Positions

#### Conference Organisation

- Conference Chair, International Steering Committee for Transport Survey Conferences, International Conference on Transport Survey Quality and Innovation, South Africa, August (Stopher).
- Conference Chair, 23<sup>rd</sup> Conference of Australian Institutes of Transport Research, Melbourne, 10-12 December 2001 (Greaves)
- Member, Local Organising Committee, 15th International Symposium on Transportation and Traffic Theory, Adelaide, 16 – 18 July, 2002 (Hensher, Rose)

#### International Positions

- Reviewer, University of British Columbia, Hampton Research Scholarship Committee (Brewer)
- Member, US Transportation Research Board Committee on Telecommunications and Travel Behaviour (Brewer)
- Member, World Conference on Transport Research Society (Hensher, and Taylor)
- Founding member, US Transportation Research Board Committee on Traveller Behaviour and Values (Hensher)
- Member, US Transportation Research Board Committee on Travel Forecasting (Hensher)
- Immediate Past President, International Association for Travel Behaviour Research (Hensher)
- International Vice-Chairman, World Conference on Transport Research Scientific Committee (Hensher)
- Member, Air Transport Research Group (Hensher)
- Fellow, Chartered Institute of Transport, United Kingdom (Clements, Young, Hensher)
- Fellow, Institute of Transportation Engineers, U.S.A. (Young)
- Member Emeritus, Transportation Research Board's Committee on Traveller Behaviour and Values (Stopher)
- Vice Chair, Committee on Planning, American Society of Civil Engineers (Stopher)
- Member, TRB Committee on Survey Methods (Stopher)
- University Representative to the Transportation Research Board for ITS Sydney (Stopher)

- Member Institute of Transportation Engineers (US), (Stopher)
- Member, American Statistical Association (Stopher)

**Australian Positions**

- Member, Faculty of Economics and Business IT Review Committee 2001 (Hensher)
- Academic Staff member of AVCC expert group to audit 2000 publications (Hensher)
- Member, Graduate Studies Board, Central Committee and Sub-committee, The University of Sydney (Brewer)
- Chair, Graduate Studies Board, Faculty of Economics and Business, The University of Sydney (Brewer)
- Joint Chair, Teaching & Learning Committee, Faculty of Economics and Business, The University of Sydney (Brewer)
- Member, Logistics Management Association (Brewer)
- Chair, ITS Logistics Management Group (Brewer)
- Secretary, ITS Alumni Association (Coulson)
- Member, Institute of Transportation Engineers (ITE) Australia and New Zealand Section (Young, Rose)
- Member, Australian Institute of Traffic Planning and Management (AITPM) (Rose)
- Member, Chartered Institute of Transport (Bendall, Brewer, King, Young)
- Member, Chartered Institute of Transport (Victorian section), General Committee and Passenger Transport Group (Clements)
- Member, School of Business Executive (Hensher)
- Member, The University of Sydney Faculty Restructuring Working Party (Hensher)
- Member, The University of Sydney Environment Advisory Committee (Hensher)
- Member, Peer Review Committee for Strategic Transport Plan for NSW (Hensher)
- Member, Department of Urban Services, ACT Territory Plan Review for Strategic Transport Plan for Integrated Land Use and Transport Planning (Hensher)
- Member, Transport Data Centre, Technical Advisory Committee, NSW Department of Transport (Hensher)
- Member, Transport Research Centre (RMIT University) Advisory Committee (Hensher, Young)
- Member, The University of Sydney Department of Marketing Advisory Committee (Hensher)
- Member, The University of Sydney Faculty of Economics, Faculty Management Advisory Committee (Hensher)
- Member, The University of Sydney Faculty of Economics, Board of Postgraduate Studies (Hensher)
- Member, The University of Sydney Faculty of Economics, Research Committee (Hensher)

- Member, Australian Capital Territory Transport Reform Advisory Group (Hensher)
- Member, Advisory Committee of the Australian Retailing Committee (Hensher)
- Member, Faculty of Economics and Business's 4-person Information Technology Review Committee, March-April 2000 (Hensher)
- Executive Committee Member, Inland Freight Railway Study (Melbourne to Brisbane) (Hensher)
- Corresponding Member, National Committee on Transportation Engineering, Institution of Engineers, Australia (Rose)
- Member, Faculty of Engineering Board, Steering Committee (Young)
- Member, Advisory Committee, Transport Research Centre, Royal Melbourne Institute of Technology (Young)
- Member, Parking Association of Australia (Young)
- Member, Monash University Department of Civil Engineering Management Committee (Young)
- Chair, Monash University Advisory Committee on People with Disabilities (Young)
- Member, Monash University Education Committee (Young)
- Member, Monash University, Car Parking Committee (Rose)
- Member, Review of Financial Services Team, University of Sydney, Central Committee (Brewer)
- Member, Central Promotions Committee, University of Sydney, Central (Brewer)
- Academic Board Nominee, Selection and Promotion Committees (Brewer)
- Chair, Postgraduate Program Review, Faculty of Economics and Business (Brewer)
- Acting Head, School of Business, Faculty of Economics and Business, University of Sydney (Brewer)
- Member, Academic Board/Forum, University of Sydney (Brewer)
- Member, Academic Honest Working Party, University of Sydney (Brewer)
- Member, Teaching and Learning Central Committee, University of Sydney (Brewer)
- Chair, Postgraduate Coursework Committee, College of Humanities and Social Sciences, University of Sydney (Brewer)
- Member, Faculty of Economics and Business Executive Committee, University of Sydney (Brewer)
- Additional Member, Undergraduate Review Committee, Faculty of Economics and Business, University of Sydney (Brewer)
- Member, PhD Sub-committee, University of Sydney (Brewer)
- Member, Review Team of the Academic Board Quality Assurance Committee, University of Sydney (Brewer)

#### **Editorial Positions**

David Hensher is Associate Editor of *Asia Pacific Journal of Transport*, Area Editor of *Transport Reviews*; and is on the editorial boards of *Transport Policy*;

*Transportation; Transportation Research; International Journal of Transport Economics; Logistics and Transportation Review, Transportation Research Part E* (from 1997); *Journal of Transport Economics and Policy; Transportation Planning and Technology; Journal of Retail and Consumer Services, Journal of Transport and Statistics* and *Cooperative Transportation Dynamics* (online journal). David has been appointed volume and series editor for Elsevier/Pergamon *Handbooks in Transport*. David has also been appointed editor of a book titled “The Leading Edge of Travel Behaviour Research” book by Elsevier Science Ltd. under the Pergamon Press imprint.

Ann Brewer is editor and reviewer of the second volume of *Handbooks in Transport - Handbook of Logistics and Supply Chain Management*, Pergamon Press, and is on the International Editorial Advisory Board for *International Journal of Logistics: Research*.

Peter Stopher is on the Editorial Board of *Transport Reviews*.

Bill Young is an Associate Editor of *Transportation*.

Geoff Rose is a member of the editorial board of *Transport Engineering in Australia*.

### **Reviews of Papers**

Staff reviewed papers for a wide range of transport journals and conferences.

Ann Brewer refereed papers for *Handbook of Logistics and Supply Chain Management, Transportation Research F, Transportation Research A & B, Australian Economic Review* and *Journal of Transportation*.

David Hensher refereed papers for *Transportation Research, Journal of Transport Economics and Policy, Transport Reviews, Journal of Transportation and Statistics*, special issues of transport journals for the *International Association for Travel Behaviour Research* and *WCTR 2001*. David also examined the PhD thesis of Pierre Uldry titled *Choice Models and Bayesian Methodology*.

Peter Stopher refereed papers for *Transportation, Transportation Research, Transportation Research Board* and *Transport Reviews*.

Geoff Rose refereed papers for *Road and Transport Research, ARRB TR Conference, World Congress on Intelligent Transport Systems, and World Conference on Transport Research*.

Tu Ton refereed papers for *Transportation Research and Transport Reviews*.

### **Seminar Series and Policy Workshops**

#### **ITS Seminar Series (ITS Sydney)**

The following seminars given by invited overseas visitors to ITS were held:

- *Monitoring Success (and Failure) in Delivery of Transport Promises – the Missing Link Between Methodology and Policy*, 6 March, Professor Phil Goodwin (ESRC Transport Studies Unit, University College London)

Seminars held by ITS Sydney:

- *Standardisation of Personal Travel Surveys*, 27 March, Professor Peter Stopher
- *Agile Supply Chain Management: An Empirical Study*, 10 April, Dr Shams Rahman
- *Sydney Continuous Household Travel Survey*, 12 June, Ms Helen Battellino (Transportation Data Centre, NSW Department of Transport)

A joint seminar series was established between ITS (Sydney) and the NSW Department of Transport, which included the following seminars:

- *Applications of Global Positioning System (GPS) in Vehicle and Personal Tracking Studies*, 14<sup>th</sup> August, Dr Jean Wolf (President of GeoStats, Atlanta, Georgia)
- *Logistics and IT Management*, 2<sup>nd</sup> October, Stephen Waters (PhD Candidate, University of Sydney)

#### **ITS (Monash) Lectures, Seminars and Workshops**

##### ***Bus safety seminar***

Professor Eric Hildebrand, who worked at ITS Monash from December 2000 until March 2001, presented a seminar entitled *Benchmarking Australian bus safety* on 12 February 2001. This was an exposition of the research he performed while at ITS Monash, and is also published as an ITS Working Paper *Australian bus safety: Insights and issues*.

##### ***Transport policy lecture series***

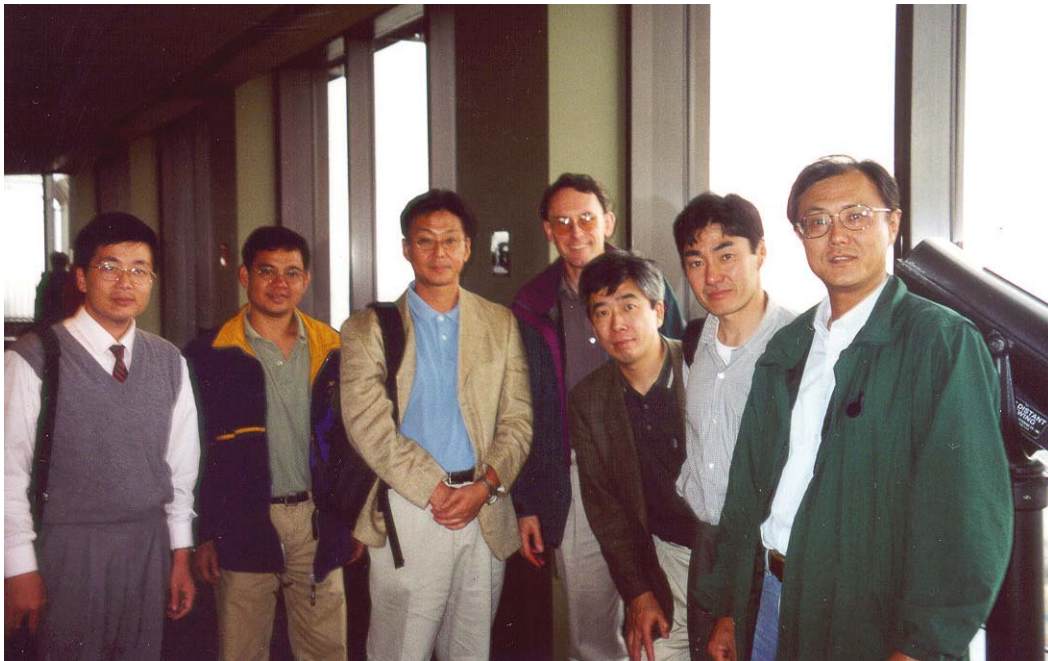
ITS Monash collaborated with the Victorian Department of Infrastructure and the Royal Automobile Club of Victoria in presenting a series of public lectures entitled *Transport Policy and its Impact on Metropolitan, Regional, Social, Economic and Environmental Outcomes*. The six lectures, held between the end of March and the end of May, were delivered by Australian and international academics and policy makers, and were titled as follows:

- *Using the Transport System to Assist in Achieving Melbourne's Future* – Mr Geoff Anson (Department of Infrastructure) and Professor Sir Peter Hall (University College London)
- *Sustainable Transport* – The Honorable Peter Bachelor (Minister of Transport) and Professor Peter Newman (Murdoch University)
- *Melbourne in the World* – Professor Lindsay Nielson (Department of Infrastructure) and Mr Chris Barlow (CEO, Melbourne Airport)
- *Metropolitan/Regional Victoria* – Mr Ian Pinge (Centre for Sustainable Regional Communities) and Mr Trevor Budge (TBA Planning/RPD Group, Bendigo)
- *Transport, Equity and the Community* – Fr Nic Frances (Executive Director of the Brotherhood of St Laurence) and Professor William Young (Monash University)

- Transport and the Economy – Professor Martin Wachs (University of California)

***Intelligent transport systems seminar***

On 28 March, ITS Monash hosted a one day seminar entitled *Intelligent Transport Systems: Tools or Toys* at Rydge's Riverwalk Hotel in Melbourne. Attended by 57 delegates, its keynote speakers were visiting academics from Japan and the Philippines. Other speakers included Mike Regan from the Monash University Accident Research Centre (MUARC), John Stanley from the Bus and Coach Association Victoria, and Bruce Hearn from VicRoads. The seminar addressed issues such as where Intelligent Transport Systems fit within a strategic transport network and whether in-vehicle systems help or hinder road safety.



*Professor Toshio Yoshi, Assoc. Professor Ricardo Sigua, Professor Shoshi Mizokami, Assoc. Professor Geoff Rose (ITS Monash), Professor Noboru Harata, Professor Takayuki Morikawa and Professor Masao Kuwahara at the Intelligent Transport Systems seminar, 28 March 2001*

***Bus safety seminar***

On 14 November, ITS Monash, in conjunction with Audit Enterprises, conducted a one day seminar entitled *Safety, Customer Service and Profitability: Managing Risk and Compliance*. The seminar, which was held at Monash University and attended by over 70 industry, government and tertiary education representatives, examined ways of implementing integrated systems to manage the challenges of maintenance management, vehicle and workshop productivity improvement, OH&S and environmental safety. The focus of the seminar was on public transport and the road based freight sector. Key industry sponsors were Audit Enterprises; Transport Management Australia/Victorian Transport Association; Transit Development Association; Scott Software Development and ARMAC.

Industry representatives and consultants who made presentations included Grenda Corporation and Croydon BusLines, Audit Enterprises, The Safety Business and RIES. Government agency and university presentations were provided by NRTC,

DOI, VicRoads and Monash University. Presentations focussed on chain of responsibility and other operational safety, OH&S and environmental safety issues and case studies. Practical demonstrations and an industry exhibition of electronic and manual systems were also provided.

***Traffic Engineering and Management workshops (9-10 July and 8-9 November)***

These two day workshops have now been run for many years. In 2001 the 10<sup>th</sup> workshop was held in Melbourne and attracted over 50 registrants from all states in Australia. It was co-ordinated by a steering committee whose members were drawn from road organisations, government (local and state) and consultancies. This year for the first time a workshop was also run at Monash University's Sunway campus in Malaysia, with 50 delegates from both Malaysia and Singapore attending. The workshops were conducted by Professor Bill Young.

Both workshops covered human factors, intersection analysis, traffic control devices, local area traffic management, design for non motorised vehicles, parking policy, traffic impacts, and professionalism in the industry. Additional topics covered in Melbourne included road networks, temporary road works and special events. The Malaysian delegates went on to examine road hierarchies, public transport, and signing and pavement markings, as well as traffic management objectives and road safety.

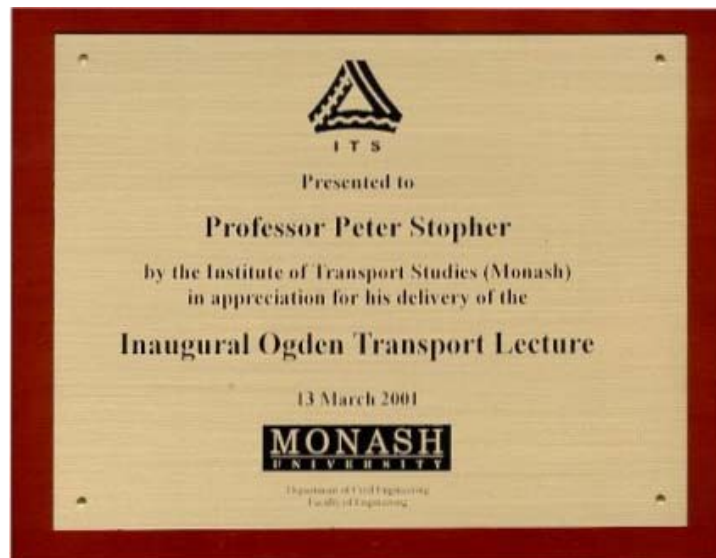
As part of his visit to Malaysia, Professor Young also delivered a seminar on a selection of these issues to the Malaysian Police Academy in Kuala Lumpur..

***Inaugural Ogden lecture***

The Ogden Transport Lecture is a free public lecture initiated by ITS (Monash) to recognise the contribution made by Professor Ken Ogden to the transport program at Monash University for more than 30 years. The inaugural lecture was held on 13 March 2001 and was attended by more than 80 people. It was delivered by Professor Peter Stopher, Professor of Transport Planning at ITS-Sydney, who drew on his theoretical and practical experience in the field to provide insight into the directions that transport will take in the 21<sup>st</sup> century.



*Professor Peter Stopher, Professor Ken Ogden, Professor Peter Darvall (Deputy Vice Chancellor (Research and Development)) and Associate Professor Geoff Rose at the inaugural Ogden Transport Lecture on 13 March 2001*



*Plaque presented to Professor Peter Stopher*

## **Maintaining Industry and International Contacts**

### **Overseas and Interstate Visits**

- David Hensher visited Lausanne in Switzerland to review progress on joint research with Pierre Uldry and Valerie Severin on ARC Large Grant (2001-03) which is evaluating implications of task complexity in choice experiments in July

- David Hensher met with staff at the Transport Studies unit at Oxford University to talk about common research interests in July.
- David Hensher participated as lecturer in the Executive Program in Discrete Choice Modelling at New York University, July 5-9.
- Geoff Rose spent his sabbatical leave overseas in the second half of 2001. He spent time in the Department of Civil Engineering, University of New Brunswick, Fredericton, Canada, progressing research on bus safety with Professor Eric Hildebrand. He also collaborated with Dr Ygnace at INRETS (the French National Institute for Transport and Safety Research) in Bran, France, on research dealing with the use of mobile phones to collect traffic data. As part of his sabbatical leave, Geoff also held discussions on matters of mutual research interest with colleagues at Magellan Navigation Systems (Detroit, USA), University of Michigan Transport Research Institute (Ann Arbor, USA), Imperial College London (UK), County of Norfolk (UK), and SPRINT Tollway Company (Malaysia).

### Visitors

*Professor Sergio Jara-Diaz*, from the University of Chile, visited ITS Sydney from January 9 until March 9 to present the course ‘Transport Policy and Planning Issues’, and to undertake research on allocation and valuation of time.

Sergio was born in Chile and is married with 2 sons. He holds a PhD with a thesis in the field of Transport Economics (1981), and a Master of Science in Civil Engineering (1980) from the Massachusetts Institute of Technology. He was Magister in Urban and Regional Planning at the Universidad Católica de Chile (1977), and Civil Engineer at Universidad de Chile (1974). His specialisation is in Transport Economics – users’ behaviour, evaluation, pricing, cost functions and industry structure.

Sergio also produced two working papers while at ITS.

*Professor Phil Goodwin*, from the ESRC Transport Studies Unit at University College London visited ITS Sydney in early March. He was the guest speaker at the Systemwide Committee meeting on 2<sup>nd</sup> March, and also at the ITS Celebration of a Decade Dinner on 3<sup>rd</sup> March, and presented a seminar at ITS titled *Monitoring Success (and Failure) in Delivery of Transport Promises – the Missing Link Between Methodology and Policy* on March 6. He joined David Hensher on 6<sup>th</sup> March in a meeting with ABIC to assist in development of National Policy Statement.

Phil Goodwin is Professor of Transport Policy and Head of the Centre for Transport Studies at University College London. He was formerly Director of the Transport Studies Unit at Oxford University (1979 – 1995). The UK Economic and Social Research Council designated his team as a ‘Centre of Excellence’ – initially at Oxford, now at London – with a ten year program of research on the policies and politics of traffic growth, and the dynamic methodologies suitable for long term transport planning. His own work has included standard references on demand elasticities, induced traffic, and suppressed traffic due to road capacity reallocation – and he chaired a panel of advisors appointed by the UK Deputy Prime Minister to help write the 1998 UK White Paper. He has a special interest in the question of how an academic institution can both contribute research justifying its ‘centre of excellence’ status and also contribute to the real world of policy and practice – questions of great importance to ITS.

*Richard Johnson* visited ITS Sydney from July 2000 to May 2001 to participate in the doctoral program. He is a PhD student from Sweden from the Department of Economics at the University of Uppsala, Sweden, and active at the Centre for Transport Economics (CTEK), Borlänge, Sweden. He is currently developing a Computable General Equilibrium model from an own created data set. The First application of the model is to study the effects on the transport sector and the overall economy from the reintroduction of a marginal cost based kilometre tax on heavy goods vehicles.

*The Hon Alan Griffiths*, Chair on QUANTUM, visited ITS Sydney on 15 January to demonstrate new software designed to assist in determination of the alignment and construction costs of major infrastructure

*Professor Arnim Meyburg*, Dean Faculty of Civil and Environmental Engineering, Cornell University, visited ITS Sydney on 16 January.

*John Rogan*, Deputy Director General of NSW Department of Transport visited ITS Sydney for half a day on January 18 to engage in dialogue on options for institutional and regulatory reform in public transport.

*Emanuele Negrenti*, Project Manager of ENEA Transport and Mobility Division, visited ITS Sydney on 26<sup>th</sup> March to discuss multidisciplinary impact modelling.

*Professor Olav Hauge* from Molde, Norway, visited ITS Sydney on 28<sup>th</sup> February to discuss regulation in transport

*Zetao Luo*, Associate Professor and Director of the Institute of Transport Economics at Nankai University, China. Zetao came to ITS Sydney in February to spend a year as a visiting research scholar. His research focuses on Economical Analysis on Traffic Pollution Control, and Logistics Management Strategy in the 21<sup>st</sup> Century.

*Johan De Beer*, Executive Officer of Aerospace Chamber, Transport Education Training Authority, together with the Quality Assurance and Skills Development Managers of Transport SETA from South Africa visited ITS Sydney to discuss the Industry Program on the 20<sup>th</sup> June

*Dr Maria Vredin Johansson*, researcher at the Center for Transport Economics at Dalarna University in Sweden, is visiting ITS Sydney to do research from August 2001 to February 2002.

*Antonio Comi*, PhD candidate from the University of Reggio Calabria's Department of Computer Science, Mathematics, Electronics and Transportation visited ITS Sydney on 21<sup>st</sup> December to discuss 'Urban Movements: attraction and Distribution models'.

## Other Activities

### TRB University Representatives Program

ITS Sydney and ITS Monash have been included in the TRB University Representatives program. This program includes university representatives from the United States, Canada, Japan, Kuwait, Mexico, Peoples Republic of China, Philippines, Slovakia, Thailand, and the United Kingdom

### ITS Alumni Association

The ITS Alumni Association was formed in 1998 with the intent of creating a forum where past and present students could meet, discuss and remain updated on many issues that relate directly to transport. The president of the Association is Bruce Munro and the secretary is Michelle Coulson.

### A New Associate of ITS (Monash)

Rita Seethaler was made an associate of ITS (Monash) in July. She is involved in the development of the infrastructure project and policy evaluation program for ITS.



*Associate Professor Geoff Rose and Professor Bill Young presenting an Associate of ITS (Monash) Certificate to Ms Rita Seethaler.*

### ITS Sydney Quality Partnerships

Dr Jean Wolf, President GeoStats, Atlanta, Georgia, USA gave a talk to the Bus and Coach Association of NSW, stressing potential applications of GPS technology to bus operations and performance monitoring, on August 15.

### Graduate Program in Vietnam, ITS Sydney

Together with RTS NSW and the Research Institute for Transportation Science and Technology in Vietnam looking at the possibility of offering graduate programs at

these two institutions. Professor David Hensher and Dr Tu Ton visited Hanoi on 17-21 September for discussions.

ITS was also awarded an IDF ‘Good Neighbour’ Grant towards a visit from Mr Nguyen Van Thach to Sydney to continue discussions.



*Vice Minister Pham Duy Anh and Professor David Hensher sign copies of the minutes from their meeting, while Mr Nguyen Van Thach (Senior Expert of the International Relations Department), Professor Dr Nguyen Xuan Dao, (Director-General of Research Institute for Transportation Science and Technology), and Dr Tu Ton look on.*

#### **IEAust Sydney Panel**

Professor Peter Stopher gave a presentation on Global Positioning Systems and their Transport Implications at the October meeting of the Panel at Milson’s Point, Sydney. This was the final lecture in the 2001 series of the IEAust Sydney Panel.

**World Congress on Intelligent Transport Systems (Sydney, 30 September – 4 October)**

As part of this World Congress, a major exhibition was mounted in the Darling Harbour Exhibition Centre. ITS Australia (the peak body for intelligent transport systems in Australia) facilitated a joint display by Australian Universities active in the field of intelligent transport systems. ITS Monash mounted a major display to promote the distance education postgraduate program which includes a subject devoted to ITS. The response to the display was excellent and has generated many requests for further information on the course.



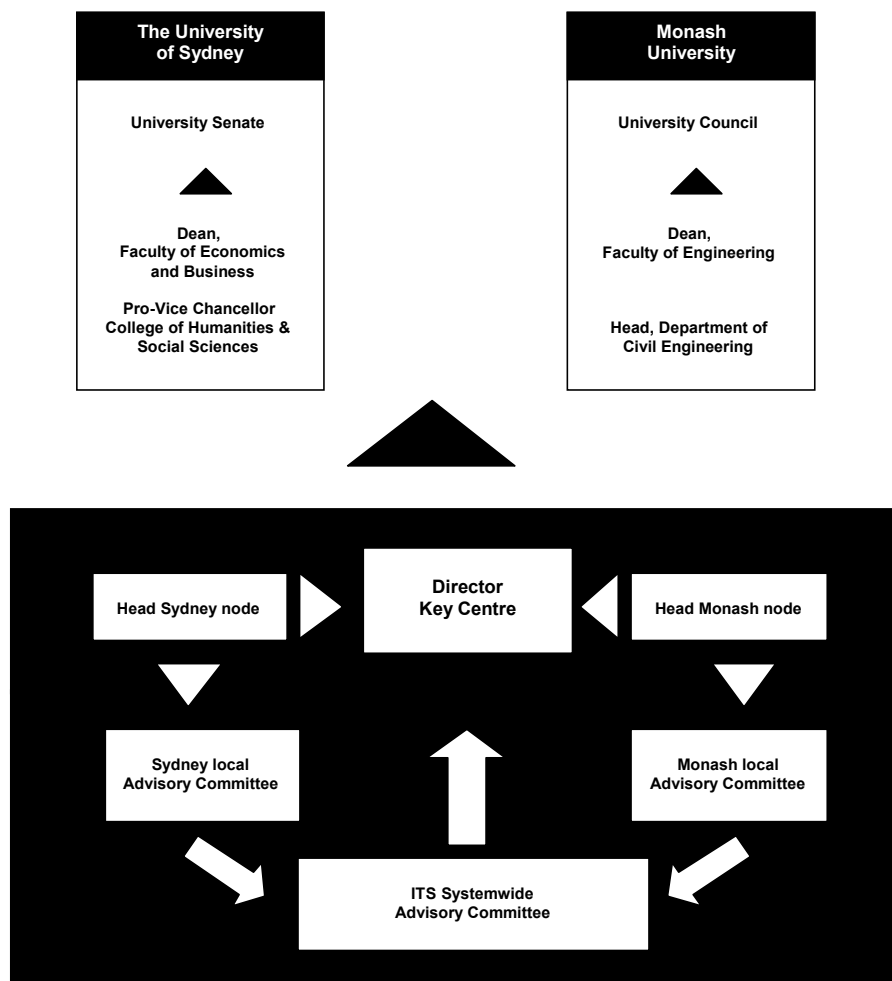
*ITS Monash display as part of the exhibition at the World Congress on Intelligent Transport Systems held in Sydney*

## 11. MANAGEMENT STRUCTURE

The management structure of the Key Centre is shown in the diagram below.

The role of the Advisory Committee is to provide advice on any matters referred to it by the Key Centre Executive, as well as to initiate matters for consideration that are of interest to the Key Centre, such as the teaching and research program and opportunities for participation of industry and government. Recommendations for changing the structure of the Advisory Committee, that were approved in 1998, were implemented in 1999. These are:

- That ITS establish a new Advisory Committee in which a maximum of 20 members be invited, selected to be representative of the modal areas and their geographical location. This committee would provide advice on the general directions of ITS and the development of policy.
- That the Advisory Committee meet once per annum, rotating between Sydney and Monash.
- That ITS Sydney and ITS Monash separately establish a small Advisory Committee to handle node-specific matters, comprising the Head of each node and up to 5 members from the Joint Advisory Committee. This committee would provide advice on the functional activities of each node.



In addition, ITS Sydney established an ITS Logistics Management Group Advisory Committee. The inaugural meeting of the ITS Logistics Advisory Committee was held on 6th September 1999. A second meeting was held on 23rd November 1999 and was hosted at the offices of Toll Logistics by Don Telford. The obligations of committee members are to provide feedback on the direction of ITS Logistics and Supply Chain Management programs and to participate generally in the committee meetings. ITS benefits greatly from the input of members who assist in the development of the Institute and help us to ensure that our programs meet the demands of industry. It is anticipated that the meetings of this newly formed committee will be held on no more than two occasions each year.

**ITS Systemwide Advisory Committee Members up to March 2001 when this committee was terminated are:**

*Professor Bob Bartels*

Head, School of Business, University of Sydney

*Mr Jim Bosnjak*

President, Bus and Coach Association (NSW)/Westbus

*Professor Ann Brewer*

Director, Industry Programs, ITS Sydney

*Mr Everald Compton*

Chairman, ATEC

*Mr Doug Dean*

Managing Director, Collex Waste Management Pty Ltd

*Mr Paul Forward*

Director, Road Network Information, Roads and Traffic Authority

*Mr Greg Harper*

Chief Finance Officer, Department of Defence

*Professor David Hensher*

Director, ITS

*Dr Ian Johnston*

Executive Director, ARRB Transport Research Ltd

*Mr John M. C. King*

Manager, Advisor on Policy and Strategy, Aviation and Tourism Management

*Mr Ray Kinnear*

Director, Public Transport Planning, Department of Infrastructure

*Mr Geoff Kloot*

General Manager – Traffic & Road Use Management, VicRoads

*Professor Jordan Louviere*

Head of Research and Development, Memetrics

*Mr Daryl Mellish*

Executive Director, Bus & Coach Association of NSW

*Professor Ken Ogden*

Group Manager, Public Policy, RACV

*Mr John A. Reid*  
Director, Australasian Traffic Surveys

*Mr John Rogan*  
Deputy Director General, NSW Department of Transport

*Associate Professor Geoff Rose*  
Director, ITS Monash

*Mr Llew Russell*  
Chief Executive Officer, Liner Shipping Services

*Mr John Stanley*  
Executive Director, Bus Proprietors Association (Victoria)

*Dr Alastair Stone*  
Managing Director, Pacific Infrastructure Corporation

*Professor Peter Stopher*  
ITS Sydney

*Professor John Taplin*  
Department of Information Management and Marketing, University of Western Australia

*Mr Don Telford*  
Director of Operations, Toll Logistics

*Professor Peter Wolnizer*  
Dean, Faculty of Economics and Business, University of Sydney

*Professor William Young*  
ITS Monash

#### **ITS Sydney Advisory Committee**

*Mr Doug Dean*  
Managing Director, Collex Waste Management Pty Ltd

*Mr Jock Murray (to August 2000)*  
Director General, NSW Department of Transport

*Mr John King*  
Advisor on Policy & Strategy, Aviation & Tourism Management P/L

*Dr Ian Lin*  
The Quo Vadis Consulting Group Pty Ltd

#### **ITS Monash Advisory Committee**

*Mr David Berry*  
Deputy Secretary, Strategic Planning and Economic Services

*Mr Geoff Kloot*  
General Manager, Traffic & Road Use Management, VicRoads

*Mr John Usher*  
Managing Director, Invicta Bus Lines

*Ms Charmaine Dunstan*  
Associate, Turnbull Fenner

*Mr Brian Fitts*  
Manager – Transport, Sinclair Knight Merz

*Mr John Reid*  
Director, Australasian Traffic Surveys

**ITS Logistics Advisory Committee**

*Prof. David Hensher*  
Director, Institute of Transport Studies

*Prof. Ann Brewer*  
Director, ITS Logistics Management Group and Director, Industry Programs, Institute of Transport Studies

*Prof. Tony Richardson*  
Professor of Transport Planning, Institute of Transport Studies

*Ms Sarah Bate*  
Logistics Consultant, Morgan & Banks

*Mr Keith Campbell*  
Vice-President, Logistics Association Australia

*Ms Michelle Coulson*  
Co-ordinator, Industry Programs, Institute of Transport Studies

*Mr Doug Dean*  
Managing Director, Collex Waste Management

*Mr Jack Hanrahan*  
Consultant

*Mr Chris Loudon*  
Training Manager, McPhee Transport

*Mr Bruce Munro*  
General Manager, Hills Transport

*Mr Richard Spanos*  
Operations Manager, Payless Shoes

*Ms Kim Stewart*  
Strategic Business Manager, Emery Worldwide

*Mr Don Telford*  
Divisional Director, Logistics, Toll Logistics

## 12. FINANCIAL STATEMENTS: ITS-SYDNEY

### Institute of Transport Studies

#### Statement of Income and Expenditure for the twelve months ended 31/12/2001

##### INCOME

	2001
	Sydney
	\$
ARC Centre Grants	-
Other ARC Programs	153,774.00
Other Commonwealth Govt Grants	158,104.58
Donations	65,000.00
Membership & Subscriptions	13,000.00
Graduate Programs	-
Fees Education Programs	421,152.92
Host Institution Support	422,169.78
Other Income Sources/Interest	417,056.34
<b>Total Income</b>	<b>1,650,257.62</b>
<b>EXPENDITURE</b>	
Salaries	1,256,734.74
Equipment	107,637.79
Conference	134,365.60
Travel	45,103.60
Accommodation	4,251.96
Consumables	14,606.25
Catering	34,386.52
Other Expenses	151,998.12
<b>Total Expenditure</b>	<b>1,749,084.58</b>
<b>Surplus/(Deficit)</b>	<b>(98,826.99)</b>
<b>Accumulated Funds as at 1 January 2001</b>	<b>449,284.33</b>
<b>Accumulated Funds as at 31 December 2001</b>	<b>350,457.34</b>

## FINANCIAL STATEMENTS: ITS MONASH

*(To be advised by Monash University).*

## 13. 2001 IN REVIEW

### ITS Celebration of a Decade Dinner

On March 3<sup>rd</sup>, ITS Sydney held a celebratory dinner to mark its 10 year anniversary. 120 people attended, including Hon. Carl Scully, Minister for Transport, Jim Bosnjak, President of the NSW Bus and Coach Association, Dame Leonie Kramer, Chancellor University of Sydney, Daryl Mellish, Executive Director of Bus & Coach Association of NSW, Professor Gavin Brown, Vice Chancellor of University of Sydney, Professor Peter Wolnizer, Dean of the Faculty of Economics and Business, and Professor Ros Pesman, Pro-Vice Chancellor of the College of Humanities and Social Science.

Entertainment was provided by Alison Heike's String Trio

The annual ITS student awards for 2000 were also presented at the dinner.



*The main table (Prof Phil Goodwin on the left)*



*Michelle Coulson and Professor Ann Brewer with ITS Alumni*



*Bus and Coach friends of ITS*



*Dame Leonie Kramer presenting the CTM award*

## WHAT ITS MEANS TO OUR STAKEHOLDERS...

"I was just writing to say thanks for the transport economics lectures and to say that I look at a lot of the things at work quite differently because of them."

*Tim Dewey, Student*

"...I really wish I could have a chance one day working with you - a world renowned expert for a joint transport-air pollution project."

*Charles Xu, Environmental Protection Authority*

"On behalf of the Environment Advisory Committee may I thank you for the excellent report you (Jenny King) and David Hensher prepared on the recent Survey of the University of Sydney's Key Stakeholders' Views on Environmental Issues. The comprehensive and lucid analysis of the results which you have undertaken provides the University with an effective foundation on which to build its Environment Policy and Implement Strategies and the Committee is most grateful for this."

*Professor Ken Eltis, Deputy Vice Chancellor, University of Sydney*

"I would like to thank you for your presentation at the Institute Dinner on Wednesday, July 14, 1999. The points you covered certainly raised some interest amongst members. Indeed, the range of options in transport education was quite impressive, particularly in what the ITS has developed over time."

*L. J. Harper, Immediate Past Chairman, Chartered Institute of Transport in Australia*

"A letter, at long last, to formally thank you for your presentation to our Bus Day seminar last month. We believe it was very well received and supported by local politicians, transport planners and the media, and your contribution has generated considerable interest."

*John Collyns, Executive Director, Bus & Coach Association New Zealand*

"Thankyou also for your help with the *Journal of Transportation and Statistics*. We have completed our first year and, thanks to contributions from outstanding researchers such as yourself, successfully, I think. Of course, we'd welcome further contributions from you and your colleagues down under at any time."

*David L. Greene, Oak Ridge National Laboratory, US*

"I am writing on behalf of the National President, Keith Todd to thank you for attending the National Conference in Cairns and for addressing our delegates. Your presence was an essential element in what was a very successful conference."

*Ian MacDonald, Conference Director*

"The success of ITS is a matter of record and does not need to be recounted here. I am very proud of the small part that I played in providing a home for ITS and an environment which allowed you and your colleagues to get on with the important job of establishing ITS as a centre which is now recognised internationally... I have no doubt that ITS will go from strength to strength in its new home. Please pass on to everybody in ITS my thanks for their help and support in the past and my very best wishes for the future."

"I was surprised and delighted to be made an Honorary Member of the ITS Alumni Association Inc. ITS now has some very distinguished alumni and, of course, it has always enjoyed strong support from the industry and from Government. I am sure that these connections will continue to provide ITS with the support and encouragement that is now essential for all university activities."

*Murray Wells, Graduate School of Business*

"With my fairly sudden withdrawal from active involvement in University of Sydney affairs, I didn't ever see you to congratulate you on your success in being named as a Commonwealth Key Centre. I became a great admirer of your Institute's achievements and your whole approach..."

*Brian W. Scott, Management Frontiers Pty. Ltd.*

"If as a result of our association we have made people's travel more pleasant, or the movement of the goods or services they require more efficient, I will be glad. Thanks a million for your part in making my job both enjoyable and rewarding."

*Derek Scrafton, Director-General of Transport, SA (retired)*

"Thankyou for taking the time to introduce me to staff of the Institute last Friday and for your warm welcome. I found my visit to be most informative and encouraging. I see many opportunities for close cooperation between our organisations."

*Stephen Hunter, Director, Bureau of Transport and Communications Economics*

“Just a brief note of congratulations for the award of a Key Centre. I was delighted to hear of your news...I know you and your team will do a great job and provide the University of Sydney with a further example of its ability to ‘deliver’ in research”

*Professor Bruce G. Thom, Vice-Chancellor, University of New England*

“In a country which is so reliant on efficient and safe transport systems, it is gratifying to know we now have a centre which will play such an integral role in research and lead the way in the development of excellence in Transport Management standards.”

*D. Geoff Stevenson, Director General, Queensland Department of Transport*

“The ITS is already recognised in Australia and Overseas for its leading role in teaching and research in transport. This recognition is the result of many years of hard work by the ITS staff and the leadership you have shown. I am privileged to participate in the ITS program and look forward to a continuing role.”

*Rodney T. Swan, Managing Director, Business Growth Projects*

“I am proud to be associated with ITS Sydney. Their publications have placed them at the forefront of international studies in transportation management.”

*Professor G.J. Fielding, University of California, Irvine*

“The MTM course offered a unique blend of practical Transport Management modules and core MBA modules in the one package. The modules were all well presented with good handouts, reading lists and stimulating assignments. Student participation in lectures was encouraged and, because many students were already in the workforce, their contributions enabled others to appreciate the practical implications of the subject being taught...The MTM lecturing staff are well connected within the public and private sectors of the Logistics/Transport Industry and thus the lectures have a practical focus rather than a heavy bias towards academic theory.”

*Mel Hindson, Manager, Systems Projects, TNT (graduate)*

“I would like to take this opportunity to say how much I have enjoyed working with you and your co-authors. The project has broken new ground for Cambridge and I feel that it has been one of the most important ones that Cambridge has committed to over the last few years. Once again many thanks for the immense patience you showed during the reviewing, I realise that it was long and drawn out, but I hope worthwhile.”

*Ashwin Rattan, Economics Editor, Cambridge University Press, UK (about ‘Stated Choice Methods’)*

“Great course, great teachers, great admin officer – if my performance was as good as theirs, I wouldn’t be so worried about passing.”

*Distance Education postgraduate student in unit review questionnaire*

“All very good standard for the difficult task of combining a seminar for so many different user groups”

*Delegate at “Safety, Customer Service and Profitability” seminar*