2003
ANNUAL
REPORT

A report on the 2003 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.
2003 Annual Report

April 2004

INSTITUTE OF
TRANSPORT STUDIES
The Australian Key Centre
In Transport Management

Sydney:
Faculty of Economics & Business, C37
The University of Sydney
NSW 2006, Australia

144 Burren St, Newtown

Phone  +61 2 9351 0071
Fax    +61 2 9351 0088
Email  itsinfo@its.usyd.edu.au
http://www.its.usyd.edu.au

Monash:
Department of Civil Engineering
Monash University, PO Box 60
Clayton VIC 3600, Australia

Phone  +61 3 9905 9627
Fax    +61 3 9905 4944
Email  itsinfo@eng.monash.edu.au
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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 two Advisory Committees, one for each node, comprising eminent academic, industry and government representatives. The advisory committees’ role (as a group or individually) 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. 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, Canada, The Netherlands, Chile, Brazil and Sweden.

The Key Centre continues in its present institutional and structural guise to make notable contributions to the research and education profile of Australia under its charter as a Federal Key Centre of Excellence.
2. DIRECTOR’S REPORT

The Institute of Transport Studies continues to develop in many new directions as well as consolidating in areas that have been active for many years. 2003 has been another active year for both nodes with new appointments as well as reviews and revision of education programs and new research activities. ITS-Sydney experienced its largest growth in graduate students, increasing from over 150 students in 2002 to over 500 in 2003. This massive increase is in large measure due to the growing popularity of logistics and supply chain management from international students from over 23 countries, although there is a noticeable increase in transport majors. While this is good news it also brings many new challenges in staffing the programs to ensure a quality graduate education. We are very pleased to announce that during 2003 we created two new positions in transport and logistics management. Dr Stephen Greaves is joining ITS-Sydney (from ITS-Monash) as a Senior Lecturer in Transport Management, specialising in traffic systems and transport planning (adding to our already power base in GPS/GIS); Dr Miguel Andres Figliozzi is joining ITS-Sydney as a Lecturer in Logistics Management, having recently completed a PhD at the University of Maryland under the supervision of Professor Hani Mahmassani. Andres will be teaching in logistics systems but has research interests that span logistics, freight transport and applied econometrics. Associate Prof Erne Houghton (Chair of the Discipline of Econometrics and Business Statistics in the Faculty of Economics and Business at Sydney) is also joining ITS-Sydney full time in early 2004 as a specialist in operations management and optimisation. Erne has been an adjunct researcher in ITS-Sydney during 2002-03 working with me on the design of new performance-based contracts for the bus sector. In addition to academic appointments, 2003 saw the appointment of three new research analysts and three Doctoral candidates. Price Waterhouse Coopers offered a 4 year PhD scholarship in ITS-Sydney (worth $20,000 per annum tax free) to research a topic in transport economics. Geoffrey Clifton was the successful applicant out of strong competitive field of 28 applicants and has commenced research in the area of public transport economics and policy.

Although the graduate program is important to ITS, the market has encouraged ITS-Sydney to develop new non-award programs. Adding to the already popular Certificates in Transport Management (Bus and Coach) and Certificate of Coach Management (both of which have been subject to a major review and revision in 2003 for a new 2004 program), the first tranche of students undertook the Advanced Certificate of Transport and Traffic Management (ACTTM). This program was designed in conjunction with the NSW Roads and Traffic Authority with 15 scholarships funded by the RTA for its staff. There were 65 applicants for these 15 places. After a review of the 2003 program undertaken by ITS-Sydney and the RTA senior executive, the 2004 program has been approved with another 15 RTA staff plus opening the program up to 5 students from other government agencies.

David Hensher continues as Associate Dean (Postgraduate coursework) in the Faculty with an appointment until 2006. 2003 saw some major new initiatives under the Associate Dean role including the development and piloting of a peer mentoring program for new graduates, the review and release of a new home page for the Faculty and an overhaul of the membership, roles and responsibilities of the Faculty’s Graduate Studies Board. Under David’s leadership the Faculty has moved forward in improving
its delivery of programs to the growing graduate market. Louise Knowles joined the Faculty in 2003 to work closely with David in the wide range of strategic initiatives for the Faculty with Ruth Steel adding further support in late 2003.

Research success for ITS is very important. With ITS-Sydney cited as one of the top 5 transport research Institutes globally our reputation is very much the product of our excellence in research. We are proud to have the best record in the faculty for publications per academic members of staff in recognised international journals in our field. With new staff joining ITS we see this as a challenge to ensure that our reputation is preserved. Success in winning research grants is set out in this annual report, but it is with great pride that I mention that ITS-Sydney has won over $1m of ARC Discovery Program (and Large) research grants in the last 4 years.

ITS (Monash) continued to strengthen its activities in 2003 with the appointment of Graham Currie to the Chair in Public Transport, and the arrival of Dr Majid Sarvi as a research fellow. Their appointments herald a strategic expansion of research activity focused on public transport. Professor Currie’s position has been funded by the Bus Association of Victoria, the Victorian Department of Infrastructure, Vic Roads and Monash University. Dr Sarvi was subsequently appointed to a Lectureship position, created by Dr Greaves’ departure to join ITS (Sydney). Dr Sarvi’s research interests cover intelligent transport systems and microsimulation. Professors Currie and Young have been working with Dr Sarvi on a major research and development project for Vic Roads which focuses on road space allocation.

The Monash University undergraduate program in civil engineering continued to attract strong student numbers to the transport and traffic electives and also to enrolment in a wide variety of final year research projects. The interest in transport generated by the undergraduate program continues to produce a strong fields of applicants for the summer research scholarships offered by ITS (Monash) and also has a flow on effect into postgraduate program enrolments. The revised postgraduate program continued to attract interest from students both within and outside Victoria. A new unit in Transport Economics was introduced in Semester 2, 2003 and preparatory work was undertaken for the remaining unit in the postgraduate program (Transport Planning and Policy) which will be first offered in Semester 1, 2004.

The industry programs in bus and coach and parking continue to attract students, although in the case of the former at a predictably reduced rate. The number of workshops offered by ITS (Monash) increased in 2003 thanks to visits from a number of overseas academics.

The 2003 Odgen Transport Lecture was delivered by Professor Graham Currie. That lecture was followed by the Transport Policy Public Lecture series which attracted strong attendance from the transport profession and the community. The theme of the Ogden Lecture and the Transport Policy Public Lecture series, was road space allocation and those forums added substantially to the community and professional debate on those issues.

A review of ITS (Monash) conducted by the Faculty of Engineering, as part of the regular review of all centres within the Faculty, produced enthusiastic endorsement of the centres’ activities. Preparation of the written submission for the Faculty review panel provided the staff at ITS (Monash) with an opportunity to reflect on the high
productivity of the centre over the last five years. The momentum of those activities will continue in 2004 thanks to important preparation and updating work undertaken in 2003. The very successful book ‘Traffic Engineering and Management’ was revised in 2003 and will be published early in 2004 in conjunction with the related workshop. Preparatory work was also undertaken in 2003 for new public transport related workshops which will be held in 2004.

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

David A. Hensher FASSA
Director
The Institute of Transport Studies (Sydney) new home page:

http://www.its.usyd.edu.au/
3. ENROLMENTS FOR 2003

A summary of student numbers is given below for the various programs. Unlike years prior to 2002 in which we only reported students enrolled in the range of transport and logistics degrees, we have broken with tradition to report the actual number of students enrolled in each unit of study. This more meaningfully records the demand for the transport and logistics units of study. Many of our students are enrolled in other degrees such as the MBus, MCom, MIB and MDesSc.

ITS: Sydney

**Graduate Program**

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<td>Transport UoS</td>
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<td>Logistics UoS</td>
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**Certificate Programs**

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<td>2003</td>
<td>45</td>
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</table>

**Two executive programs were run.**

**No programs except via Deakin Australia.**

ITS: Monash

**Industry Programs**

<table>
<thead>
<tr>
<th>Year</th>
<th>Postgraduate (Coursework)</th>
<th>MEngSci (Research)</th>
<th>PhD</th>
<th>Parking Management</th>
<th>TMC (Bus and Coach)</th>
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<td>2</td>
<td>6</td>
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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 logistics management.

The work of the Institute also has the following objectives:

- To provide a focus for University activity in areas of transport and logistics management and to establish an environment attractive to those committed to excellence in graduate transport and logistics management programs and research;
- To collaborate with key players having an interest in transport and logistics management and its applications;
- To offer specialised training courses, workshops, short courses and seminars on topics of interest in the area of transport and logistics management; and
- To seed the development of innovative ideas in transport and logistics 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, advanced certificates, certificates, 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, business), 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.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Performance measure</th>
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<tbody>
<tr>
<td>Australian transport and logistics management expertise highly regarded</td>
<td>Requests for working papers. 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 and national journals.</td>
</tr>
<tr>
<td>Contribute leadership in Australasia, Asia Pacific and Beyond</td>
<td>Participation in Asia Pacific and Australasian Conferences. Supervision of PhD students in South East Asia. Joint venture with NSW Roads and Traffic Authority through an annual Woman in Transport Scholarship for graduate coursework study. Quality partnership with Price Waterhouse Coopers in transport economics research through a Doctoral scholarship program.</td>
</tr>
<tr>
<td>Link transport engineering and management education</td>
<td>Short courses and workshops integrating engineering and management. Short course on travel surveys, transport policy and transport scheduling. Short courses on discrete choice modelling and stated choice methods.</td>
</tr>
<tr>
<td>State of the art research</td>
<td>Many research projects for range of government and private clients. Publications in leading international and national journals. 2 new PhD commencements in 2003.</td>
</tr>
<tr>
<td>Transfer of research to transport community</td>
<td>Through publications including 20 working papers per annum, conferences, journals and books such as <em>Transport: An Economics and Management Perspective, Roads and the Community, Traffic Engineering and Management, Stated Choice Methods: Analysis and Applications, Choice Analysis, and the 6-volume series of Handbooks in Transport (for Elsevier-Pergamon)</em>. Published over 25 papers in refereed journals and conference proceedings. Through presentations and attendance at conferences and seminars.</td>
</tr>
</tbody>
</table>
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, Associate Dean (Graduate Coursework Programs), and occasional Acting Dean, Faculty of Economics and Business.

A Fellow of the Academy of Social Sciences in Australia, a Past President of the International Association of Travel Behaviour Research, Past Vice-Chair of the International Scientific Committee of the World Conference of Transport Research, and Executive and International Chair (and founder) of the International Conference on Competition and Ownership of Land Passenger Transport (the Thredbo Series), David has published extensively (over 280 papers) in the leading international transport journals and key journals in economics as well as eight books. In January 2001 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, published in 2000 has recently been reprinted. A new book on Applied Choice Analysis: A Primer (with John Rose) will be published in 2004 by Cambridge University Press. Major areas of teaching and research are transport economics, institutional reform, 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 throughout the world on matters related to transportation.

Ann Brewer, BA MCom (Hons) Macq PhD UNSW, MCTI
Long term secondment as Assistant Pro-Vice Chancellor (September 2002-2005). Professor of Organisational Logistics.

A specialist in organisational behaviour, human resource management, Ann has experience in a many industries, with major projects 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 many 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).
Peter Stopher, Ph.D., FIEAust, FASCE
Professor of Transport Planning, Deputy-Director of the ITS-Sydney
Coordinator of ITS-Sydney Doctoral Research Program

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 150 papers in leading international journals and has also published a number of books in transport-related topics. Peter editing a book on *Transport Survey Quality and Innovation* published in 2003. He has made major contributions to the profession as a founding member of the TRB Committee on Traveler Behavior and Values, of which he was awarded in 2002 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. Professor Peter Stopher was elected a Fellow of the American Society of Civil Engineers at the beginning of June. ASCE states: “Election to the ASCE membership grade of fellow recognises an engineer who has made significant technical achievements, is legally registered as a professional engineer or land surveyor, and for at least 10 years has demonstrated notable achievement in responsible charge of engineering activity, as well as continuing professional attainment, following election to the ASCE grade of member.” Peter has been a member of ASCE since 1972, but is not a registered professional engineer or land surveyor. ASCE waives this requirement only in exceptional cases, where an individual has a record of outstanding achievements in the field of civil engineering. Election to Fellow requires nomination by at least five Fellows of the Society and letters of reference from at least three of them, indicating the attainments and standing of the individual. Currently, out of a membership of 129,000, there are 7,000 Fellows worldwide in ASCE.

Shams Rahman, MSc Belarus ME Asian IT PhD Exeter
Senior Lecturer in Logistics and Director of the Logistics Management Program

Shams specialises in the fields of logistics and supply chain management, quality management and business modelling. Prior to joining ITS in 2000, Shams 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 and deployment of services. 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 strategic transport planning decision support system – The Transport and Environment Strategy Impact Simulator (TRESIS).

**Philip Bullock, BSc (Applied Geography) (Hons), MLM (in progress)**  
Senior Research Analyst and Project Leader in GPS/GIS Program

Philip joined ITS in May 2000, having previously worked in a large wholesale company where he managed transport and distribution. He provides research and administrative support to the Director and ITS academics and coordinates a number of research projects for Professor Peter Stopher. Projects in 2003 include GPS systems as a way of evaluating the reliability of travel survey data, development of GIS software for processing and analysing data collected from buses as well as other travel time research using GPS, and testing the development of synthetic household travel survey data. Philip is completing an MLM and was awarded a national postgraduate scholarship worth $5500 from the LAA (Logistics Association of Australia) which was presented to him at a breakfast meeting of the LAA in June 2003 (the inaugural year of the award) and Philip successfully competed with students from all over Australia for one of two postgraduate awards.

**Cam Ngo, BEngSc Vietnam MEng USA MEngSc PhD UNSW**  
Research Analyst (until August 2003)

Cam joined ITS in September 1998. His major field is highway, traffic and transport engineering and local area traffic management. His interests lie in artificial intelligence and knowledge-based expert systems. His research focus was specialised to the TRESIS project; which includes 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.

**Freddy Susanto, BSc UNSW**  
Computer Programmer (until December 2003)

Freddy was involved in building the input and output user interface for the TRESIS program and map object programming. Tresis version 1.4 is fully operational (on 14 zones) and version 2.0 has been developed for 46 zones.

**Marijana Vurmeska, BA, MPhil**  
Research Analyst (until 7 February 2003 when she moved to Central Administration)

Marijana was responsible for providing research assistance to Professor Ann Brewer. She joined ITS in December 2001 and in 2003 was 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.

Louise Knowles, BA (Hons) UNSW, MBA Deakin University
Research Analyst (until November 2003)

Louise joined the Faculty of Economics and Business in January 2003, and worked with Professor David Hensher in his role as Associate Dean (Postgraduate Coursework Programs) on a range of Faculty-wide strategic initiatives. Projects in 2003 included a review of the Faculty web site and the implementation of a peer support and mentoring program for postgraduate students. Her diverse background included market research analysis and Defence logistics. She was awarded the Brookes Scholar Award as Deakin’s top MBA graduate in 2001.

Tomoko Sugiura, BPsych UNSW, PhD (in progress)
Research Analyst (until September 2003)

Tomoko provided research assistance to Dr Shams Rahman. She joined ITS in February undertaking research and literature reviews in supply-chain management. Tomoko has an Undergraduate degree in Psychology (UNSW) and is currently a PhD candidate at UNSW. Her Honours thesis focused on the reliability of psychiatric diagnosis and her PhD thesis looks at the effects of cross-cultural adjustment on the work adjustment of expatriate managers, and academic adjustment of international students. Tomoko has several publications in the area of mental health.

Qingjian Jiang, BEng Tsinghua University, China, MEng China, PhD (in progress)
Research Analyst

Before joining ITS, Qingjian worked for an electronic component manufacturing company where he was engaged in quality management and R&D. He had established a quality system, which is ISO 9001 accredited, and developed applications for household appliances, one of which is holding a patent. Qingjian commenced working at ITS in December 2001. He is working with Professor Peter Stopher on a number of projects including using passive GPS devices in household travel surveys. He is responsible for developing GISDK programs for automation of data processing and visualization of travel survey data. He also involved in travel survey data processing as well as reviewing the architecture of land use and transport model systems.

John Rose, BEc (Hons), PhD (in progress)
Research Analyst and Graduate Program Tutor

John’s interest is in choice modelling and stated choice experiments. He is enrolled in a PhD which focuses on the development of interactive agency choice experiments and the design of choice experiments (especially the impact of designs on behavioural outputs) in the transport sector. John also provides tutorial support to the graduate program as well as assisting the Director in the development of stated choice design generator.
**Rahaf Alsnih, BSc (Hons)**  
Research Analyst

After completing a BSc (Hons) in Economic Geography, Rahaf worked at ITS on a number of projects such as the project that investigated commuter coping strategies and behaviour during the Sydney 2000 Olympic Games. She is currently working with Professor Peter Stopher on the standardization of household travel survey project and her main interests lie in transport management and planning. In 2003 Rahaf also contributed to the preliminary ITS program looking at transport needs for seniors in an ageing population.

**Graham Pointer, BSc (Hons) Economic Geography (UNSW)**  
Research Analyst (until July 2003)

Graham completed an honours degree in economic geography (UNSW) in 2000. After travelling and working overseas in the manufacturing and sales fields Graham returned to Australia and worked in the area of transport in the private sector. In 2003 Graham focussed on ITS’s public transport program, contributing to a major redevelopment of a costing model for non-commercial bus contracts (known as the ITS-Model). Graham also contributed to the design of a new Bus Industry Confederation Fact Sheet before relocating to England for personal reasons.

**Camden Fitzgerald, BSc (Hons) Economic Geography (UNSW)**  
Research Analyst

Since joining ITS in July 2003, Camden has been involved in developing a nation-wide database on the passenger transport industry. Associated with this is a Bus and Coach fact sheet in partnership with the Bus Industry Confederation (BIC) developing an extensive profile of the public and private bus industry.

**Andrew Collins, BSc (in progress)**  
Research Analyst

Andrew joined ITS in late 2002 as a specialist internet programmer. He is working on the design of a template for internet surveys, especially stated choice surveys as well as a new way of animating passenger trips on maps as part of a larger ITS program of research into new and efficient ways of collecting reliable household and individual passenger travel data.

**Geoffrey Clifton, BEc(Hons) UQld PWC Scholarship recipient**

Geoffrey is the inaugural recipient of the Price Waterhouse Coopers Doctoral scholarship in transport economics. A graduate in economics from the University of Queensland, Geoffrey commenced his research program in ITS in July, specialising in public transport.
Administrative Staff

Anne Fernando, ACMA
Finance and Personnel Officer

Anne 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).

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. The new home page designed by Gary was launched in November 2003.

Jo Sarjana
Executive Officer and Personal Assistant to the Director

Prior to joining The University of Sydney in 1999, Jo managed her own business and information services office for five years in Bali, Indonesia. Jo provides administrative and executive support to the Director and ITS academics, manages the day to day administration of the graduate program, coordinates the ITS-Sydney local node Advisory Committee meetings, produces desktop materials for the graduate program, certificate program, short courses, ITS functions and generic ITS flyers.

Ruth Steel, BA (Hons), MSc
Projects Officer (Faculty of Economics & Business and ITS)

Ruth joined the Faculty of Economics & Business in September 2003 working with Professor David Hensher (Associate Dean, Postgraduate Coursework Programs) on a number of faculty-wide strategic initiatives including the review of graduate programs and the development of student related policies and procedures. At ITS she is working on various projects related to the development of teaching and learning strategies, development of the ITS-Sydney Transport Policy & Research Forum and ITS-Sydney Seminar Series, and providing editorial direction and support for the ITS website and publications / promotional material. Since moving to Sydney from the UK in September 2002 Ruth has completed a number of short term assignments in executive support and education administration at the University of Sydney. Prior to this she worked in the Planning and Management Information Office of the University of Exeter, UK. After completing an undergraduate degree in Politics & Religion at the University of Lancaster she went on to gain her Masters in Ethnic Relations from the University of Bristol. Funded by a scholarship from the Economic and Social Research Council she recently completed her PhD at the University of Bristol. The title of her thesis is: The Host Country, From Protection to Control: UK Refugee Policy and Practice. Ruth worked for two years as an Information Officer for a refugee agency providing
reception support to refugees on arrival to the UK, prior to this she worked as a Front of House Manager at a community arts centre and theatre.

**Loloma Wren, BBus, GradDipPR&Mktg**  
Course Co-ordinator, Industry Programs  
Prior to joining the staff of ITS, Loloma’s experience in education administration covered a number of professions including specialist physicians, accountants, the environmental health and building industries and dentists. In addition Loloma has planned and organized a variety of conferences for the medical profession. Her responsibilities with ITS encompass the administration of the industry programs for the bus and coach industry, the ACTTM with the RTA and other government agencies and a number of postgraduate programs. Loloma has a B.Bus from UTS, Ku-ring-gai Campus and a postgraduate diploma in Public Relations and Marketing.

**Adjunct Faculty**

**Elizabeth Barber, MEconSt UQ**  
Elizabeth continues an academic career spanning the past twenty three 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 Elizabeth has been involved in military logistics researching logistics and supply chain initiatives for the Australian Defence Force. She published a book in mid 2002 on “The Logistics of the East Timor Campaign”. Elizabeth teaches Strategy and Supply Chain Management and the Industry Laboratory at ITS.

**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. Trevor provides advice as required on the Logistics Program and teaches from time to time in International Logistics and Maritime Markets.

**Peter Lok, B.App.Sc., M.H.P.(UNSW), M.B.A. (UTS), Ph.D (UTS)**  
Dr Peter Lok is Senior Lecturer in Management at the University of Sydney. He teaches in the areas of Managing People, Strategic change management, Strategic HRM and Managerial Practices in Asia. He has extensive working experience in the areas of corporate transformation, productivity evaluation and human resource management in
UK, Australia, NZ, China, Hong Kong, Singapore, Malaysia and Taiwan. His consulting activities include many leading firms and he also publishes regularly in management journals. Peter is responsible for the ITS unit in People, Work and Organisation.

**Alastair Stone, BEng, PhD (University of California, Berkeley)**  
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 Merill Lynch. Alastair teaches in the area of joint ventures in public infrastructure projects.

**Andrew Kerr, MBA (Macq), DBA dist (IntMC)**

Andrew has an extensive management and consulting background in the areas of operations management, service operations, marketing, services marketing, supply chain management and logistics. His doctoral research involved the strategic ramifications of enterprise outsourcing decisions, both in Australia and overseas. Since late 1987, Andrew has been the Managing Director of Griffin Corporate Services; a Sydney based strategic consulting practice with network offices in several Pacific Rim cities. Previously, he held senior management appointments with Marrickville Holdings, Myer (NSW) Limited, GEC Australia Limited, Digital Equipment Corporation, Sperry Limited and Unisys. Andrew is a visiting fellow at a number of graduate schools and since 1989 has delivered numerous post-graduate programs in Australia and overseas. Formerly Australian and Far East Editor of the International Journal of Physical Distribution & Logistics Management, Andrew remains a member of that Journal’s Editorial Advisory Board. He is an assistant editor of the Gower Handbook of Logistics and Distribution Management. Andrew teaches International Logistics in the Graduate program.

**Full-time PhD Students**

**Alejandra Efron, BEng Argentina MSc Brazil, PhD (in progress)**

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. Commenced Doctoral studies in 2001.
Wafa Dabbas, BSc MSc, PhD (in progress)

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. Commenced Doctoral studies in 2001.

Melody Ju-Miao Hsiao, BSc MSc, PhD (in progress)

Melody holds a Bachelor of Science in Business Administration from University of Massachusetts, Lowell, and a Master of Science in Management Science from California State University, Fullerton. She has been a lecturer at Ling Tung College in Taiwan for ten years. Her current research area is in supply chain management, with special interests in buyer-supplier relationship, retail business and supply chain performance. The title of her PhD study is "The Determinants of Supply Chain Performance for Retail Outlets." Commenced Doctoral studies in 2002.

John Rose, BEc (Hons), PhD (in progress)

Research Analyst and Graduate Program Tutor

John’s interest is in choice modelling and stated choice experiments. He is enrolled in a PhD which focuses on the development of interactive agency choice experiments in the transport sector. John also provides tutorial support to the graduate program as well as assisting the Director in the development of stated choice design generator. Commenced Doctoral studies in 2001.

Jaafar Zamhari, BSc.BA(Finance), MBA/A, PhD (in progress)

Jaafar holds a Bachelor of Science in Business Administration (Finance) from West Virginia University and a Master of Business Administration in Aviation from Embry-Riddle Aeronautical University, Florida. He is a Licenced Air Traffic Controller by profession, but currently works as an Assistant Director at the Department of Civil Aviation Malaysia. Jaafar's research interest is in aviation.

Sean Puckett, BA (Economics), BA (German) Honours Programme at Western Washington University, USA, PhD (in progress)

Sean holds a Bachelor of Arts in economics and German from the Honours Programme at Western Washington University, and a Master of Arts in economics from the University of Washington. He is researching the behaviour of firms in supply chains involved in urban deliveries, and their responses to changes in levels of service. Sean, who is supervised by Professor David Hensher, and has a particular interest in congestion charging and interactive agency choice experiments, which will play key roles in his research.
Part-time PhD Students

_Seu Cheng, BA MA (Econ) University of Manitoba, Canada, PhD (USydney)_

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 submitted her PhD in early 2003 and it was accepted in November 2003. Seu will graduate in early 2004.

Visiting Research Scholars

_Kwang Sik Kim, BA, PhD (from July 2002 – February 2003)_

Kim is a Professor, working with the Department of Public Administration, Sung Kyun Kwan University in Seoul, Korea. Kim visited ITS for seven months from July 2002 to February 2003. His research focus was on examining an integrated transportation, land use and environment model using TRESIS. The longer term plan is to apply TRESIS in a Korean city and eventually contribute to doing some comparative studies using data from Korean cities and their Australian counterparts. His visit was partially sponsored by the Korea-Australia Foundation. Kwang departed for Korea on 11 February 2003.

_Professor Juan de Dios Ortúzar, Visiting Professor (from 7 July – 15 August 2003)_

Juan de Dios Ortúzar (Ph.D. F SCIT, M CILT) is Professor of Transport Engineering, Pontificia Universidad Católica de Chile.

Professor Ortúzar has 30 years experience in transport planning, travel forecasting, travel-behaviour modelling, and associated areas. He has published six books (among these the best-selling Modelling Transport with Dr. L.G. Willumsen) and more than 50 papers in refereed journals. He has established an international reputation in travel-demand modelling, and the development of new procedures for travel forecasting. He was lucky to be an early rider on the wave of discrete choice models in transport, working with Prof. Huw Williams, and thus one of the first to use and apply the nested logit model in the 1970s. He is founding member of the Chilean Society for Transport Engineering, the International Association for Travel Behaviour Research and the World Conference on Transport Research Society, and has acted as Chairman of the Scientific and/or Organising Committees of all the Pan-American Transport Engineering Conferences. He has been Latin America Area Editor of Transport Reviews since its foundation in 1982, and member of the Editorial Board of Transportation Research A (1982-1998), Transportation (1982 onwards), and Transport Policy, International Planning Studies and Transport since 1994. In addition to work in travel demand forecasting, Dr. Ortúzar has also developed a useful reputation in the field of data collection, particularly for the support of travel modelling and analysis. He pioneered the use of travel diaries as a data-collection mechanism in Ibero-America, and has conducted research and directed the major mobility surveys in Chile since the late 70s, touching on issues of sample and questionnaire design, data expansion and non-response biases. He also developed the transport simulation game GUTS (again with Dr. Willumsen), which is used in more than 50 universities throughout the world. He is currently working on Stated Preference design issues, with particular reference to the effect of survey complexity on response, together with Prof. David Hensher at ITS. His main area of interest is the use of advanced discrete choice models and techniques for
the valuation of transport externalities such as accidents and environmental pollution, where he has rejoined forces with Prof. Williams.

**Prof. Dr.-Ing. D. Zumkeller, (November 2003)**

Professor Zumkeller was educated in engineering at the Technical University of Munich, and at the Technical University of Braunschweig from where he received his PhD. He is the author of over 100 publications in German, English, French and Hungarian and has worked in many countries: USA, Great Britain, Austria, France, Saudi Arabia, Spain, Burundi, Kenya, Australia, The Netherlands, Philippines, Taiwan, Thailand, Italy and the Czech Republic. He is the national coordinator of the European Science Foundation and a member of the German Association for Transport Research and the Road and Transportation Research Association.

**Dr Astrid Guehnemann, Dipl. Wirt-Ing. (University of Karlsruhe), Dr. rer. pol. (University of Karlsruhe) (from August 2003 until December 2003)**

Astrid joined ITS in August as a visiting scientist from the Institute of Transport Research (IVF) at the German Aerospace Centre (DLR) in Berlin, where she is head of the Department of Transport System Analysis, a group of people from social sciences, economics and engineering working on travel behaviour research as well as development and evaluation of transport concepts. Her research interests lie in transport and environment issues, evaluation methods and transport modelling. Astrid has published two books on “Environmentally oriented Transport Plans” (in German) and “Methods for Strategic Environmental Assessment of Transport Infrastructure Plans”. During her professional career in transport research she has worked on numerous projects for the European Union and other agencies on transport system evaluation and environmental impacts of transport. As a guest lecturer, Astrid is giving classes on transport policy and planning at the Technical University of Berlin.

**Professor Michiel Bliemer, (from November 2003 until March 2004)**

Michiel (Mike) is currently Associate Professor Transportation Modelling at Delft University of Technology (DUT) in The Netherlands. Michiel lectures the Transportation & Spatial Modelling course and the Transport Economics course in Delft. After his Masters degree in Econometrics and receiving his PhD in transportation planning and traffic engineering 3 years ago, he continued his main research on dynamic network modelling at DUT and TNO (the largest not-for-profit research institute in The Netherlands), leading to an operational analytical multiclass dynamic traffic assignment model called INDY. Furthermore, he is project leader of a project on dynamic road pricing in The Netherlands. Other research interests are dynamic queuing models, game theory, traffic simulation models, discrete choice theory, travel behaviour of heterogenous travellers with uncertainty.
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 Model*, currently offered in the program. In 2003 he has been preparing for a new unit in *Transport Planning and Policy*, which will be offered from the 2004 academic year. Active research projects relate to travel behaviour change programs, bicycle facility level of service, impacts of intelligent transport systems on travel behaviour and strategic planning of field service systems. Geoff was also involved in a major collaborative study in 2003 in conjunction with Dr Peter Cock from the Graduate School of Environmental Science at Monash University. That project focused on the regulation of power assisted bicycles in Australia and resulted in Geoff making presentations to the Australian Bicycle Council and the Victorian Bicycle Advisory Committee.

William Young, BE (Hons I) UNSW, GradDipMgt Deakin, MBA Deakin, MSc, PhD, FIEAust, FCIT, FITE, MACRS.
Head, Department of Civil Engineering, Monash University

Professor William Young is Chair of Civil Engineering, Monash University. He has a distinguished professional and academic career, having worked at Monash University for 29 years and prior to joining Monash in the transport industry in England, Germany and several states of Australia for four years. He has also held visiting positions at Oxford, Nanyang, Karlsruhe, Michigan State and Hong Kong Universities, and with the Australian Bureau of Transport and Communication Economics. He received his BE (with honours) degree from the University of New South Wales (1970), his Graduate Diploma in Management and MBA from Deakin University (1997, 1999), and his Master of Science (1990) and PhD (1982) from Monash University. Professor Young has wide-ranging interests and has researched, consulted and published widely in the areas of land-use/transport/environment interaction, parking, engineering management and education. He has worked on several international research projects with teams from Sweden, Hong Kong, Japan, the UK, Germany and Indonesia, and was an Associate Editor of the international journal Transportation for 12 years. He has published over 300 papers and co-authored four books on transportation. He has been awarded a Chartered Institute of Transport Excellence Award, Bureau of Transport and Communication Fellowship, Alexander Von Humboldt Fellowship, and Monash Postgraduate Award. He has 29 years experience in teaching at an undergraduate and postgraduate level, and has also developed and run many distance education programs, short courses and workshops for industry. Professor Young has held a number of senior administrative positions at Monash, including: Head of the Department of Civil Engineering (1999-date), Head of the Caulfield Division of the Department of Civil Engineering (1995-1997), Head of the Institute of Transport Studies (Monash) (1995-1998), Head of the Monash Transport Group (1994,5,6), Director of Graduate and Further Education in the Faculty of Engineering (2001-date) and Chairperson of the Monash University Advisory Committee on People with Disabilities (1997-2002).
is a Fellow of the Institution of Engineers, Australia (IEAust), the Institute of Transportation Engineers and the Chartered Institute of Transport, and a Member of the Australian College of Road Safety. He has been Chair of the Victorian Transport Committee (IEAust), the National Committee of Transport (IEAust), and the Institution of Transportation Engineers Australia.

**Graham Currie, BSc (Hons) Huddersfield, MSc Cranfield**  
Professor of Public Transport, Department of Civil Engineering

Professor Currie has over 20 years experience in public transport planning, research, management and operations, and has been based in Melbourne for the last 10 years. He is an internationally recognised advisor on public transport planning and has undertaken research projects in Europe, Asia, North America and throughout Australasia. He is a World Bank accredited consultant and has developed and managed training programs in public transport planning for them in Asia. Professor Currie specialises in public transport development strategies, public transport network design, strategies for public transport planning by local government, transit market research and demand forecasting, transport needs assessment, investment and performance appraisal in transit planning and transport for major special events. He is currently an advisor to the Athens Olympic Committee on transport planning for the 2004 Olympic Games. He has managed numerous recent public transport research and consultancy projects in Australia including a patronage forecasting review for the Melbourne airport rail link, studies of transport needs in rural and regional Australia, demand forecasting studies for the Victorian Fast Trains Project, integrated municipal transport strategies in numerous areas in Victoria and inter-state and a review of the Athens, Sydney and Atlanta Olympic Games transport systems.

**John Clements, BCom DipEd MEc MAdmin FCILT**  
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 Logistics and Transport and actively involved in the CILT (Victorian Section) General Committee and Passenger Transport Group. His major academic and research/consulting interests are in transport economics, policy and management and he is the author of the postgraduate unit *Transport Economics* which is offered by distance education as part of the ITS (Monash) postgraduate program in transport and traffic. 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 undertaken quality assurance auditing with Open Learning Australia.

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

Stephen joined Monash in 2001 after completing his undergraduate studies at Leeds University in England and his PhD at Louisiana State University in the United States.
Current research projects include using GPS data to provide greater insights into on-road behaviour, evaluation of driver behaviour training programs, and measuring personal exposure to pollution based on activity levels. Stephen will be joining ITS Sydney as a Senior Lecturer in Transport Management in early 2004.

**Majid Sarvi, BEng MEng Tehran PhD Tokyo**  
Research Fellow, Department of Civil Engineering

Majid’s masters degree was in highway and transportation engineering. He worked at Tokyo University on the subject of traffic and transportation with emphasis on human factors and freeway operation and obtained his PhD there. He worked as a research fellow at Tokyo University and was the Chief Engineer at the i-transport laboratory in Tokyo in 2002. Majid has also worked as the chief researcher of the ITS research group of the Social System Research Institute and as a transport analyst with the Hong Kong Transport Department. Majid’s research interests include traffic operations, traffic flow theory, transport modeling, micro simulation programming, intelligent transport study, application of GPS to transport studies, and highway operations. Majid’s appointment to the Lecturer in Civil Engineering position (created by the departure of Dr Greaves) was announced in December 2003 and he will take up that position early in 2004.

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

Astrid is a logistician and lecturer with a background in Transport Systems, which she has taught or practised for more than twelve years. She has worked as a transport consultant to several commercial organisations, and published key documents for some. 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 consulting interest in business systems and business development.

**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). This includes administering all aspects of ITS (Monash)’s industry distance education programs in the Transport Management Course in Bus and Coach Operations and the Education Program in Parking Management. She handles all general course enquiries, student enrolment and record keeping as well as all written communications with students throughout the semester. Brenda is also heavily involved with the role of administering all aspects of the Department of Civil Engineering’s off-campus postgraduate programs in Transport and Traffic and also the Infrastructure Engineering and Management program. This also includes handling all general course enquiries, processing enrolments, re-enrolments, withdrawals and completions and carrying out
extensive liaison with the Off-Campus Unit at Gippsland, other areas within the university system and the Faculty of Engineering's Postgraduate Officer. In her administrative support role, Brenda manages the production of all advertising and distance education material (which includes extensive liaison with printers and designers), and supports all other ITS (Monash) activities including seminars, workshops and public lectures. Brenda also undertakes website and webCT development and maintenance for ITS (Monash) as well as for the Department of Civil Engineering’s postgraduate programs.

**Julia Arnold**  
Administrative Officer (Finance)

Julia provides monthly income and expenditure reports, budgets, projections and other financial accounting services, as well as assisting with reports and other large administrative tasks.

**Adjunct Faculty**

**Ken Ogden, DipCE Ballarat, BE (Hons) MEngSci Melbourne, PhD, FIEAust, FITE**  
Manager (Public Policy), RACV  
Adjunct Professor

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 General Manager, Public Policy with the Royal Automobile Club of Victoria, Australia (RACV), where he is responsible for the RACV’s public policy and advocacy roles, in particular in the areas of road safety, the environment, transport and traffic, and consumer advice. He is an international authority on traffic engineering, road safety and transport studies. He is author or editor of several books, including “Urban Goods Movement: A Guide to Policy and Planning” “Safer Roads: A Guide to Road Safety Engineering” and “Traffic Engineering and Management”.

**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 Director of Akcelik and Associates Pty Ltd. He is a leading scientist and software developer in the area of traffic management, with over 200 technical publications in his area of expertise. His research and software development company specialises in the areas of road traffic operations, traffic engineering, management and control. Dr Akcelik is member of various US Transportation Research Board (TRB) Committees. Awards received by Dr Akçelik include the 1999 Clunies Ross National Science and Technology award for outstanding contribution to the application of science and technology in Australia, and the Institute of Transportation Engineers Australia and New Zealand Section Certificate of Commendation in recognition of an outstanding contribution to the advancement of the profession, and the Institute of Transportation Engineers (USA) 1986 Transportation Energy Conservation Award for research into energy savings from urban traffic management.
Rita Seethaler, MEc 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. Rita is currently undertaking a PhD with ITS.

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

Professor Nicholas J Garber, (April–May 2003)
Professor Garber is Chairman of the Department of Civil Engineering at the University of Virginia, Charlottesville. His distinguished career spans more than 20 years of teaching and research in the areas of traffic operations and highway safety, and he is the co-author of the widely used textbook “Traffic and Highway Engineering” which is now in its third edition. During his time at ITS (Monash), Professor Garber was co-leader of a two day workshop entitled “Unsignalised intersections: balancing safety and capacity considerations”.

Professor Ralf Roos, (April–October 2003)
Ralf Roos is the Professor and Director of the Institute of Highway and Railroad Engineering at the University of Karlsruhe in Germany. He also works as a managing partner of the Durth Roos Consulting Group in Darmstadt. His recent areas of research include highway design and maintenance, road safety and public-private partnership in financing, building and maintaining roads. During his six months at ITS (Monash), he was involved in research into highway geometric design and road safety audit.

Professor Avishai Ceder, (6–10 October 2003)
Professor Ceder is a senior research engineer at the Technion-Israel Institute of Technology, and a principal researcher in the PATH program at the Institute of Transportation Studies at the University of California (Berkeley). His fields of interest
include public transport, road safety, operations research and human factors. He has also worked at ITS (Sydney), Hong Kong University of Science and Technology and MIT. Professor Ceder has written three books and over 100 articles in refereed journals, and has also served as Chief Scientist of the Israel Ministry of Transport, as Israel’s delegate at the Transport Program of the EU and as President of the Israel Association of Transportation Research. Professor Ceder was involved in the Transport Policy Lecture Series while at ITS (Monash), and was also the co-leader of a two day course in Public Transport Operations Planning.

**Professor Peter Jones, (4–7 November 2003)**

Peter Jones is Professor of Transport Policy and Behavioural Analysis at the University of Westminster in London, and Director of its Transport Studies Group. He was previously Deputy Director of the Transport Studies Unit at Oxford University. He has carried out extensive research into travel behaviour and public attitudes, and has been involved in the road pricing studies in Hong Kong, Singapore, Trondheim (Norway), London and Edinburgh. He is directing the stakeholder involvement exercises in Edinburgh, and is a Special Advisor to Transport for London on the monitoring program accompanying the introduction of congestion charging in London. While in Australia, Professor Jones’ presented at ITS (Monash) as part of the Public Transport Lecture Series and was also a speaker at the Dandenong Public Transport Forum organized jointly by ITS Monash and the City of Greater Dandenong.

**PhD Students**

**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. He submitted his thesis in November 2003.

**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 components of uncertainty in predicting pavement performance at a road network and road program level.

**Tan Yan Weng, BE MEngSc MCILT MIES’pore MREAAA**

Yan Weng is an Associate Professor in the School of Civil and Environmental 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.

Rita Seethaler, MEc Berne

Rita graduated with a Master of Economics and Political Science from the University of Berne, Switzerland, in 1994 and is presently a Director of the Urban Transport Institute, Victoria and an Associate of the Institute of Transport Studies (Monash University). She was awarded a PhD scholarship by the Victorian Minister for Transportation to develop evaluation approaches for “total transport” strategies. Rita is currently looking at this concept from the perspective of developing and measuring the impact of psychological persuasion techniques on peoples’ travel choices.

MEngSci Students

Ruimin Li, Bachelor of Highway and Railway Engineering, Inner Mongolia Polytechnic University, Masters of Transportation Civil Engineering SEU China

Ruimin has worked as a professional engineer in Beijing in highway and intersection design. Previous research interests included pavement management and the evaluation of paving on steel decking, and her current interests are in developing and improving various travel time prediction and estimation models. She hopes to transfer to the PhD program.

Dudung Purwadi, Master of Engineering Science (Transportation), University of Michigan

Dudung is head of the transportation laboratory and a senior lecturer in the Department of Civil Engineering at the Surabaya Institute of Technology in Indonesia and is an external student at Monash University. His consultancies include projects in transportation planning and modeling and highway engineering design. His masters project is entitled “Using stated preference method to examine travel preference in Indonesia”. A ‘state preference’ approach will be used to investigate transport mode preference in the east-west corridor of Surabaya. Dudung hopes to transfer to the PhD program.

6. RESEARCH AND POLICY

Sydney: New in 2003

ARC Discovery Program Grant on Freight Transport and Supply Chain Alliances (David Hensher and Sean Puckett)

ITS Sydney was successful in securing a 5-year ARC-DP grant (2002-2006) to investigate the relationship between urban freight transport and the environment. The aim is to develop a new approach to modelling the key travel choices associated with
the movement of urban freight. A central focus is on understanding the interactive agency aspect of the supply chain within which freight movement decisions are made. Thus the decision on choice of supply chain alliance and structure precedes the specification and modelling of trip decisions such as routing and chaining. The long term goal is to have a suite of choice models that can be used to evaluate the impact of transport policies such as congestion pricing on freight movements. A particular short run focus is on the development of a time of day of freight distribution model in which congestion charging (cordon based and kilometre based) is assessed.

ARC Discovery Program Grant on the Mobility and Accessibility Expectations of Seniors in an Aging Population (2004-2006) (David Hensher and Rahaf Alsnih)
Populations of post-industrial nations are aging. With a growing number of people living well into their 80’s and maintaining active lives, the transportation system will have to start focussing more closely on understanding their mobility and accessibility needs, so as to ensure that specific requirements of this large segment are not being ignored through the promotion of traditional ‘solutions’ and historical assumptions. This research takes a close look at the evidence on the mobility needs and travel patterns of individuals over 64, distinguishing between the “young” elderly (aged 65 to 75 years) and the “old” elderly (over 75 years). This distinction is particularly useful in recognising the threshold of health change that impacts in a non-marginal way on mobility needs. This distinction also focuses transport planning and policy on a commitment to understanding the different needs of these subgroups of the population, identifying services and facilities that better cater for these groups. We review the evidence, in particular, on the mobility characteristics of the over 75 year age group, including how they secure support through migration and settlement patterns. We use the empirical evidence from a number of western nations to identify the role of conventional and specialised public transport as an alternative to the automobile in meeting mobility and accessibility needs.

Seniors in an ageing population (SAPS) are a significant and growing segment of the population. As (relatively) cash rich and time poor, they have very high expectations in respect of levels of accessibility and mobility required from the transport system, as well as from other supporting networks. We currently lack policy-rich travel demand models to assist in understanding the complex dynamics that influence the travel activities of SAPS. Using ideas from stated choice methods, interactive agency choice experiments, panel econometrics and behavioural discrete choice models we propose a research program designed to understand these demands. Special focus is given to support networks and the ways in which these impact on the demand for car and public transport use, as well as meeting the access needs to health-support and leisure facilities and to supporting networks of family and friends.

Predicting Financial Distress Using Reported Cash Flows: an Ordered Mixed (Random Parameter) Logit Model (Stewart Jones and David Hensher)
Previous research examining the incremental information content of operating cash flows (CFO) and traditional accrual measures in financial distress prediction has been inconclusive. Many studies have employed some estimate of CFO, rather than reported CFO of firms. In most cases modelling has been confined to a simple binary logistic analysis, discriminant analysis or a rudimentary multinomial approach. Using a more robust four-state random parameter (ordered) logit design, ratios based on reported CFO were found to have higher predictive value than estimated CFO, including a cohort of
traditional accrual ratio measures. The advantages of using advanced discrete choice models by researchers in this field, including their econometric implications, are discussed.

*Contract Areas and Service Quality Issues in Public Transit* (David Hensher)
The introduction of contract regimes for the provision of bus services such as competitive tendering and performance-based contracts is usually premised on a prior assumption that the size of the physical contract area is given and that any policies related to interactions between contract areas such as integrated ticketing and fares are agreed to. This research reviews the evolving arguments that promote a review of contract area sizes before re-contracting and the positions supporting the benefits of service quality-related issues such as an integrated fares policy. Given that a number of analysts (in Sydney) are promoting the appeal of increasing physical contract area size to facilitate, amongst other reasons, an integrated fare regime, it is timely to set out the pros and cons for such reform to ensure that they are not counter-productive to the desired outcomes of the reform process. The arguments herein caution the support for too small a number of large contract areas on grounds of internal efficiency losses and limited gains in network economies (but support amalgamating very small contract areas). The existing empirical evidence tends to support contract areas currently services by fleet sizes in the range 30-100 regardless of urban development profile. Alternative ways of delivering cross-regional and broad-based network benefits are proposed.

*Deriving Bayesian-Like Individual Parameters from Classical Inference Methods* (David Hensher, John Rose and William Greene)
A number of studies have recently contrasted classical inference estimation methods for logit models with Bayesian methods and suggested that the latter are more appealing on grounds of relative simplicity in estimation and in producing individual observation parameter estimates instead of population distributions. It is argued that one particularly appealing feature of the Bayesian approach is the ability to derive individual-specific willingness to pay measures that are claimed to be less problematic than the classical approaches in terms of extreme values and signs. This research takes a close look at this claim by deriving both population derived WTP measures and individual-specific values based on the classical ‘mixed logit’ model. We show that the population approach may undervalue the willingness to pay substantially; however individual parameters derived using conditional distributions can be obtained from classical inference methods, offering the same posterior information associated with the Bayesian view. The technique is no more difficult to apply than the Bayesian approach – indeed the individual specific estimates are a by-product of the parameter estimation process. Our results suggest that while extreme values and unexpected signs cannot be ruled out (nor can they in the Bayesian framework), the overall superiority of the Bayesian method is overstated. This research is joint with Prof Bill Greene of the Stern School of Business, New York University.

*Mixed Logit Models: the State of Practice*  (David Hensher and William Greene)
The mixed logit model is considered to be the most promising state of the art discrete choice model currently available. Increasingly, researchers and a few practitioners are estimating mixed logit models of various degrees of sophistication with mixtures of revealed preference and stated preference data. It is timely to review progress in model estimation because the learning curve is steep and the unwary are likely to fall into a chasm if not careful. Although the theory is relatively clear, estimation and data issues
are far from clear and indeed there is a great deal of potential mis-inference consequent on trying to extract increased behavioural realism from data that is often not able to comply with the demands of mixed logit models. Possibly for the first time, we now have an estimation method that requires extremely high quality data if the analyst wishes to take advantage of the extended behavioural capabilities of such models. This research focuses on the new opportunities offered by mixed logit models and some issues to be aware of to avoid misuse of such advanced discrete choice methods by the practitioner. This research is joint with Prof Bill Greene of the Stern School of Business, New York University.

Models of Organisational and Agency Choices for Passenger and Freight-Related Travel Choices: Notions of Inter-Activity and Influence (David Hensher)

The study of traveller behaviour has in the main treated each agent in a decision-network as an independent decision maker conditioned typically (and exogenously) on the socio-economic and demographic characteristics of other agents and at best on a set of exogenous variables representing the (perceived ‘equilibrium’) influence of other agents. In many literatures it has long been recognised that agency interaction plays a (potentially) significant role in the actions of individuals. Examples at the household, community and business level abound. McFadden (2001a,b) recently stated that a high priority research agenda for choice modellers is the recognition of the role of social and psychological interactions between decision makers in the formation of preferences. Manski (2000) came to a similar conclusion and offered a plea for better data to assist in understanding the role of interactions between social agents (promoting the role of experimental choice data). While the interest in (endogenous) interactions between agents involved in passenger travel activity is generally neglected, the absence is particularly notable and of greater concern with the renewed interest in the study of (urban) freight travel activity where a supply chain of decision-makers have varying degrees of influence and power over the freight distribution task. This research reviews the broad literature on interactive decision making with a specific focus on choices made by interactive agents and the role of individuals in networks. A number of modelling perspectives are presented that use well established discrete choice paradigms. We highlight the challenges in designing data collection paradigms that are comprehensive, relevant and comprehendable by participating agents and suggest an agenda for ongoing research.

Respondent Burden in Choice Experiments: Does Temporal Burden-Spreading Help? (John Rose, David Hensher and Ian Black)

A feature of choice experiments that continues to concern many analysts is the impact of the choice task itself on choice responses. As we show the behavioural merits of increasingly more demanding choice tasks to evaluate, we impose additional burdens on respondents. While in reality individuals seem able to make decisions by evaluating alternatives in complex (often sub-conscious) ways, we still struggle with how best to replicate that process in a way that captures the data necessary to formally model the choice process. This research investigates the variability in choice response when we offer choice experiments under a number of alternative data collection paradigms. The alternatives are based on the number of choice experiments and the elapsed time between requests for data response. Holding the actual design alternatives and attributes fixed, we compare a 32 choice set in which we offer all 32 at one time, 16 sets over two sittings, and 8 sets over four sittings. We space the sequenced interviews apart by 7, 14 and 21 days. The main hypothesis is the impact on variability of choice response and a
range of valuation outputs of exposure to a specific number of choice sets over a period of time ranging from all at once to a spread of 21 days. We use a convenience sample of 90 respondents (yielding 960 observations per setting or 2880 in total) and a toll vs free road trade off on toll cost, travel time, and travel time variability (ie reliability) for three unlabelled alternatives.

Congestion Pricing and the Optimal Provision of Public Infrastructure Goods: With Reference to Toll Roads (Truong Truong and David Hensher)
The research provides a theoretical framework within which to analyse the effects of private sector participation in the provision of public goods and suggests a way of applying the theory in the context of a transport network, where the focus is on recovering from users the financial outlays made by investors in toll roads. We also look at the effects of public infrastructure investment on private sector productivity from a public goods point of view. Public infrastructure is assumed to be a (partially congested) public good. This project aims to develop a simple and practical way of setting individualised prices for users of public goods to achieve short run optimality. The research addresses the issue of free-riding in the case of a public good provision and suggests that, rather than assuming free riding will naturally lead to 'market failure' and government intervention, it can be shown that an appropriate and practicable set of Lindahl prices for toll road charges can be devised which will help to restore the power of the invisible hand. Dr Truong from the University of NSW contributed to the research.

A Latent Class Model for Discrete Choice Analysis: Contrasts with Mixed Logit (William Greene and David Hensher)
The multinomial logit model (mnl) has for many years provided the fundamental platform for the analysis of discrete choice. The basic model's numerous shortcomings, most notably its inherent assumption of independence from irrelevant alternatives (iia), have motivated researchers to develop a variety of alternative formulations. The mixed logit model stands as one of the most significant of these extensions. This research proposes a semi-parametric extension of the mnl, based on the latent class formulation, which resembles the mixed logit model, but which relaxes its requirement that the analyst makes specific assumptions about the distributions of parameters across individuals. An application of the model to the choice of long distance travel by three road types (2-lane, 4-lane without a median and 4-lane with a median) by car in New Zealand will be used to compare the mnl latent class model with mixed logit. This research is joint with Prof Bill Greene of the Stern School of Business, New York University.

Stated Choice Design Generator (John Rose, David Hensher and Andrew Collins)
Stated Preference (SP) techniques are becoming increasingly popular amongst both practitioners and academics and are enabling users to elicit utility functions based on multi-attribute decisions, such decisions covering product choice, course of action selection or an individual’s future intentions. SP methodologies allow the researcher to estimate from a number of hypothetical situations presented to respondents, individual, segment or market level utility estimates, as well as allowing the evaluation of possible attribute level trade-offs being made within the context of the decision under study. Through examination of the trade-offs facing the decision maker, researchers are able to derive predictions as to the likely outcome for given decision makers. ITS has developed an internet based capability to automatically generate stated choice designs
for online surveys as well as to use the design in any data collection mode. The research is continuing with refinements and applications to assess the robustness of the technology.

*Choice Analysis: A Primer for Beginners* (David Hensher, John Rose and William Greene)

Over the last 30 years (at least) there has been a steadily growing interest in the development and application of quantitative statistical methods to study choices made by individuals (and to a lesser extent, groups of individuals). With an emphasis on both understanding how choices are made and forecasting future choice responses, a healthy literature has evolved. Recent reference works by Louviere, Hensher and Swait (2000) and Train (2003) synthesise the contributions. However while these two sources represent the state of the art (and practice), they are technically advanced and often a challenge for the beginner. This primer sets out to divest the expert of their ownership of choice modelling. Through the use of a single case study each step of the process undertaken by the expert in developing models of choice is explained, beginning with the derivation of choice models and moving through to model estimation. An attempt has been made to stay true to the target market, the beginner, by keeping the language and explanations as simple as possible as well as by providing as much practical advice, taken from our own experiences, as is possible. Professor Ken Train (University of California, Berkeley) writes:

> I have read the first chapter of the proposed book, and I have also of course read many other works by these authors. Their writing is fluid and compelling. The first chapter attains nearly a story-telling voice, drawing the reader (even me who knows the topic) into the issues naturally. Important information and concepts are conveyed, and ways of seeing things that are essential to the procedures in the field without the reader feeling that teaching is going on. It all just seems so logical. A quite amazing feat. Needless to say, the authors are absolute leaders in the field and so they know what needs to be conveyed. Their expertise coupled with this excellent mode of transmission will make the book unique and highly valuable.

*STA Pilot GPS Study* (Philip Bullock and Qingjian Jiang)

Global Positioning System (GPS) technology provides highly accurate information on travel times and traffic conditions, however, data processing and analysis are often difficult because of the vast number of records that are collected by GPS devices. Although raw GPS track points can be viewed on most standard GIS packages, on-screen visual analysis is extremely time consuming for even small amounts of data. The State Transit Authority (STA) and ITS are jointly undertaking a Pilot Travel Time Study of the L90 bus route using passive GPS devices, with the aim of developing a standard methodology for processing and analysing bus based-GPS data that can be applied to other routes. A specialised GIS-based software application will be written by ITS to measure on-time running, travel time variability by time of day/day of week, out-of-service time, as well as travel under congested traffic conditions.

*Emergency Evacuation* (Peter Stopher, John Rose and Rahaf Alsnih)

Very little research has been done on the ability of transport systems to cater for emergency evacuations in large urban areas. One of the key difficulties in planning for emergency situations is that the peak demand for travel occurs at a point in time which is unknown in advance. This study involves revealing the preferences made by
households, in relation to emergency evacuation, and subjecting these preferences to a Stated Choice Experiment. A model will be devised that forecasts when people will evacuate in an emergency situation. This information will allow policy makers and planners to assess the capabilities we have in terms of transport planning for evacuations and the community plans are currently in place to tackle this issue. A pilot experiment conducted in the US on hurricane emergency will be adopted and a sample of Sydney households will be drawn from both evacuated areas during the 2001 bushfire season and those not evacuated. This project is being funded by the Emergency Management Administration in the Attorney General’s Office, NSW Government.

Using Passive GPS to Collect Household Data (Peter Stopher, Philip Bullock and Qingjian Jiang)

Data on the daily travel of people living in metropolitan areas are essential for developing models, policies and determining where transport problems are likely to occur in the future. However, people generally have difficulty in providing precise information about the geographic locations of the places to which they travel (aside from home, work, and school/university). Obtaining information about routes people use, the duration of their travel and their time spent under congested conditions through questionnaires is extremely burdensome, and is also notoriously inaccurate. This project is being undertaken on behalf of the New South Wales Roads and Traffic Authority (RTA) and 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 interview to obtain additional information about the travel that cannot be recorded on the GPS device, such as trip purpose and mode of travel. This research will allow us to determine how such data from a sub sample 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. Current status: This study will be integrated with the much larger Sydney HTS, which is administered by the Transport Data Centre. This integration make will allow the results to be directly comparable to the Sydney HTS. The project has been on hold since late last year, mainly due to restructuring with the TDC, however it is set to recommence as part of the next wave of the Sydney HTS, beginning in July/August

Measuring Bus Performance using GPS Technology (Philip Bullock and Qingjian Jiang)

Assessing the performance of bus services tends to be a difficult and expensive task for the majority of bus operators in Australia. Measuring running times, for example, generally requires bus arrival and departure times to be collected by time keepers positioned at key points along a given route or service corridor. Data collected by time keepers then need to be manually collated before any kind of analysis can take place. The time consuming nature of this process restricts the ability of operators to collect large and meaningful samples of data. Furthermore, it is difficult, if not impossible, to identify congestion points from such data, and to evaluate the impact that they might have on overall service levels. Passive Global Positioning System (GPS) technology offers a low-cost means of collecting large amounts of highly accurate data, which can be used in an on-going performance assessment program. Although raw GPS track points can be viewed on most standard GIS packages, on-screen visual analysis is extremely time consuming for even small amounts of data. Programming skills are
therefore required to break continuous GPS data into records that are more meaningful to an operator. A number of important tasks need to be undertaken before analysis can take place. Firstly, periods of in-service or out-of-service running need to be defined, and routes need to be identified. This can be a complicated task because operators often design shifts so that buses may switch between different areas and routes, from run to run, to maximise vehicle utilisation. Once routes are identified, records must then be separated into individual runs and matched with a timetable to compare scheduled and actual running times. In late 2002, ITS was awarded a grant from a major bus operator in Sydney to develop a specialised GIS-based program to process and analyse GPS data collected on buses. Current status: The program has been developed, and ITS is currently in the process of finalising reporting and other documentation.

**Sydney: Continuing from 2002**

*Bus Reform in NSW*

The bus and coach sector in New South Wales (NSW) is under review as part of a Bus Reform initiative of the NSW government. One matter central to the review is the establishment of a value for money (VM) regime to ensure that operators deliver to the market the best possible service levels consistent with stakeholder needs and the objectives of government. In developing a VM regime, one must recognise the potential conflict between the operator’s profit maximisation objective and the government’s social surplus maximisation objective. ITS has proposed an incentive-based performance contract regime delineated by the quantity and quality of service delivered (represented by service quality weighted patronage), the financial outlays by operators and non-operator sources in delivering this service level, and an implementation plan that delivers monitored information as well as a holistic commitment by all stakeholders. Assoc. Professor Erne Houghton from the Department of Econometrics and Business Statistics, The University of Sydney, is actively participating in this project. Four papers have been completed to date including a major assessment of alternative ways of specifying performance-based contracts, based on global experiences.

*The Design of Designs in Stated Choice Experiment, Large ARC Grant*

ITS Sydney entered the third year of 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. The Design of Designs (DoD) software, fieldwork and data cleaning and base analysis has been completed and four papers prepared. The data is rich in new information with ongoing research investigating information processing strategies for handling differential degrees of choice complexity. Funding concludes in February 2004.

*Valuation of Travel Time Savings (VTTS): A New Sydney Study*

The valuation of travel time savings estimates used in Sydney have been updated for many years from relatively old data sources and methods. Commissioned by Transfield, ITS developed a state of the art laptop based stated choice experiment in which a sample of car commuters, car non-commuters, and organizations using light commercial and heavy vehicles for goods and services distribution were interviewed to identify willingness to pay for various toll charges and collection/payment mechanisms. The setting is the current and future toll roads in Sydney. In 2003 we continued to refine VT
estimates using new choice models and applying the findings to a range of new toll road infrastructure proposals in Sydney and Melbourne. ITS was part of the successful joint venture to build and operate the Lane Cove Tunnel in Sydney.

**Simulating Household Travel Data in Australia**

Household travel data is a critical component of the travel demand forecasting process. Travel surveys have always been a problematic, high cost activity for metropolitan planning organisations. In research undertaken by Professor Peter Stopher, a method was developed to synthesize 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 of pertinent variables (numbers of trips by purpose, mode of travel, etc) from NPTS data and applying them to a sample of local region residents (drawn from Census data). The results of the simulation were then compared with actual travel surveys undertaken in the simulated regions. This research represents a continuation of this work. Using a similar methodology, household travel data are being 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 and more expensive samples of household travel data, particularly for small and medium sized urban areas.

**ARC Research Equipment Grants**

ITS was awarded a major equipment grant for a "Global Positioning System (GPS) Vehicle and Person Tracking Program" from the SESQUI R&D program in the University. With this grant, ITS has purchased 20 GPS devices for use in vehicles, with a storage capacity of 4 Mb of data, and also a powerful desktop computer for processing and displaying the data from the GPS tracking. In addition, ITS has provided specifications to a firm in the U.S. -- GeoStats in Atlanta, Georgia -- for a new wearable GPS device with rechargeable batteries. These devices are being used in a number of applications of measuring personal and vehicle travel in the Sydney area and elsewhere.

**Warringah Travel Time Study**

In response to on-going traffic problems in the Warringah area, the Federal Bureau of Transport and Regional Economics (BTRE) recently commissioned ITS to assess the feasibility of a number of strategies for improving transport in the area, including several tunnel options and a dedicated busway, as well as other measures to improve traffic flow at intersections. In the first stage of the project, ITS will collect detailed up to date travel time data on major arterial roads in the area using Global Positioning System (GPS) technology. This information will then be used in ITS’s Transport and Environment Strategy Impact Simulator (TRESIS) model to evaluate the impact that each option will have on patterns of travel demand. Output detailing changes in travel times, accidents, noise and residential amenity will be used to analyse the costs benefits of each option.

**Use of Passive GPS to Collect Household Travel Data**

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 aims to test and refine the protocol for using passive GPS instruments, 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, the project will also explore questions of route choice, congestion impacts on travel, and the day to day variability of travel. 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. ITS recently completed a pilot study for this project and is currently in the process of planning the main survey which will be undertaken in 2003.

NCHRP 8-37: Standardising Personal Travel Surveys
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. Compilation of a draft report is now in progress.

An Empirical Investigation into Critical Success Factors in Agile Supply Chains
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.
Quality Partnership with the BCA NSW

The quality partnership between ITS Sydney and the Bus and Coach Association of NSW (BCA) commenced in 2000. It is a five-year (renewable) 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 2003, these activities included the development of a new costing model for non-commercial bus contracts (known as the ITS costing model), contribution to the submission to IPART on commercial contract fare increases, and 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 on a range of policy agendas.

TRESIS (Transport and Environmental Strategy Impact Simulator)

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 and Cam Ngo.

The new version of TRESIS (Tresis V1.4) was released in February 2004 for Sydney only. It is a version for evaluating at a strategic level, impacts of a large number of transport and non-transport policy instruments on the performance of cities as measured by changes in accessibility, greenhouse gas emissions, modal shares for commuting, car use, consumer surplus and many more outputs indicators. TRESIS version 1.4 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 is a major overhaul of V1.2, extending it to include a joint mode-departure time choice model, expansion from commuting to all trips, more detailed methods of incorporating synthetic households and a new user interface for inputs and outputs. Version 2.0, with capability to forecast patronage in the Sydney context at a traffic zone level is in progress. The current team will be concluding its activities at the end of 2003 given the lack of funding.

Road and Public Transport Networks circa 1998

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.
**Monash: New in 2003**

**Monash: Continuing from 2002**

*Transit Frequency Setting Using Social Cost Benefit Analysis* (Currie/Kinnear/Wallis)
Development of an innovative approach to determine heavy rail, tram and bus route service frequencies based on the minimization of user travel costs, operating costs, road congestion relief impacts and social and economic costs.

*Identification of Spatial Gaps in Public Transport Provision in Relation to Transport Needs in the Community* (Currie)
A major requirement of public transport in median and smaller urban centres is that they are provided effectively in relation to social need for transport. However, no techniques are available or used to assess the effectiveness of public transport in catering for needs, particularly on a spatial basis. This project develops an innovative set of techniques in this area and has been applied in recent work in Tasmania.

*Trade-Offs in Transit Network Design and Service Levels* (Currie)
A review of Tasmania’s metropolitan bus services has established they have a very high density of route services running at low frequency. This is contrary to general commercial practice and may be a poor use of resources. This project includes a review of transit network design literature to establish the case for and against network density and service levels trade-off options. It includes outline modelling of these trade-offs in Tasmanian conditions. The study is funded by the Department of Infrastructure Energy and Resources, Tasmania.

*Exposure to Pollution* (Greaves)
This project assesses how people’s travel choices (mode, time etc) impact on their potential exposure to respirable particulate matter.

*Modelling of Weaving Phenomena Observed During Traffic Congestion* (Young/Sarvi)
This work focuses on a little researched area of modelling vehicle acceleration-deceleration behaviour during weaving manoeuvres under congested traffic situation. Traffic congestion frequently occurs at weaving bottleneck sections. It is therefore vital to investigate traffic behaviour and characteristics during traffic weaving processes under congested traffic flow in order to design safer and less congested weaving points as well as a more efficient control at these bottleneck sections.

**Monash: Continuing from 2002**

*Investigation into the Use of Persuasion Techniques in Transport Policy* (Seethaler/Rose/Greaves)
Policies aiming to increase the sustainability of urban transport often face the problem of overcoming unsustainable behaviour patterns that are principally centred around the car and largely dominated by routine choices that do not take sustainability considerations into account. To overcome the barrier of habitual behaviour patterns,
awareness campaigns, principally based on the provision of information about the effects of modal choice, are insufficient for stimulating change. Social psychology offers a series of persuasion techniques that are able to reach beyond the mere raising of awareness. For example, involving the target population in a process of personal commitment is likely to increase the up-take of the policy intervention and will therefore have a better chance of creating lasting changes in behaviour.

Based on the travel behaviour change (TBC) policy currently under development by the Victorian DOI, the present project attempts to study the effect of different persuasion techniques individually and in combination by using an appropriate experimental design and evaluation techniques.

**Travel Behaviour Change Opportunities of Major Events** (Rose)
This study is exploring the potential of major events (specifically a “ride to work” day) to provide a basis for longer term travel behaviour change. The research is being conducted in conjunction with Bicycle Victoria and the Victorian Department of Infrastructure.

**Development of a National Resource Kit for TravelSmart Officer Training** (Rose)
This study is developing a national resource kit for training TravelSmart officers who work in local government. These TravelSmart officers are appointed to deliver travel behaviour change programs targeted on workplaces, schools, households or communities. The study is being funded by the Sustainable Energy Authority of Victoria as part of a project which it is undertaking for the Australian Greenhouse Office.

**Mobile Phones as Traffic Probes** (Rose/Sekercioglu/Ygnace)
This study is exploring the scope for using mobile phones as traffic probes to collect traffic data. This technology has application to parts of the road transport network which is not instrumented with traditional data collection equipment. This is a collaborative project involving A/Prof Geoff Rose from ITS (Monash) along with Dr Ahmet Sekercioglu from Electrical and Computer Systems Engineering at Monash University and Dr Jean-Luc Ygnace from INRETS, France. The study is being supported by an Engineering Faculty Small Research Grant in 2003.

**Using GPS Data to Build Drive-Cycles for Urban Buses** (Greaves)
This project explores the potential to build drive-cycles for urban buses collected from on-board GPS data. These drive-cycles will be compared to those currently used in emissions modelling and necessary adjustments made. This project is being supported by a New Staff Member research grant awarded to Stephen Greaves.

**Evaluation of Environmentally-Focussed Driver Behaviour Change Programs** (Rose/Greaves)
The Victorian EPA is shortly to introduce the first environmentally-focussed driver behaviour change program in Australia. The outcome evaluation of such a program must be rigorous and robust. This project uses automatic data loggers to provide a set of performance measures indicative of driving style that could be used as part of a ‘before’ and ‘after’ study.
Quantification Of Road Pavement Performance At A Road Network Level And A Road Project Level (Martin/Young)
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 program level roughness deterioration models, including identifying the components of uncertainty associated with these 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 program 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).

Parking in Multi-use Facilities (Tan/Young)
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.

Accuracy and Traffic Simulation Modelling (Young)
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.

Modelling Small Area Traffic Networks (Young)
This project investigates the relationship between parking, traffic flow and pedestrian movements in retail developments by developing a microsimulation model.

Environmental Impacts of Transport (Young)
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.

Modelling Transport Demand and Parking Management (Young)
This project models urban travel on a city-wide scale using activity analysis.


*Sustainability and Urban Transport* (Young)
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.

*The Modelling and Intelligent Optimisation of Field Service Territories* (Youngman/Rose/Greaves)
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* (Chan/Rose)
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 GPS data collected from a field study. Private car drivers will be recruited to receive a trial usage of an IVNS for up to four 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, a routing exercise will be conducted to understand the decision process employed by each participant when following the routes advised by the IVNS. The last part of data collection requires the participant to indicate their stated choices of destination and trip timing in a self-completion questionnaire.

*Level of Service on Roads* (Young)
Knowledge of drivers’ 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** (Young)
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.

**Road Space Allocation** (Currie/Sarvi/Young)
This project examines previous approaches to allocating road space for all users and also reviews approaches to giving public transport priority in road space allocation. A new approach to determining ‘optimum’ road space allocation is developed using a Social Cost Benefit approach. Advanced micro-simulation approaches to model traffic impacts of alternative public transport priority designs is used to determine guidelines for ‘optimal’ road space allocation in relation to public transport.

**FINAL YEAR UNDERGRADUATE PROJECTS IN 2003 (ITS Monash)**

**Driver attitudes to speed enforcement** (Doran/Greaves)
This project involved an internet survey of 400 Melbournian drivers to determine their attitude to speeding and speed enforcement devices.

**Development of Drive-Cycles for Public Buses** (Francis/Greaves)
This project developed measures of bus operating characteristics (stop durations, acceleration/deceleration characteristics) for selected routes in Melbourne from Global Positioning System (GPS) to develop drive-cycles for predicting emissions and fuel consumption.

**Aggressive Driving Behaviour: Reality or Myth** (Heitman/Greaves)
Are today’s drivers as aggressive and discourteous as some would have us believe? This project involved an internet survey of how motorists’ view their own and other’s driving based on several criteria (e.g. red-light running, weaving, tail-gating).

**Impact of travel mode choice on pollution exposure** (Banks/Greaves)
Limited evidence suggests that a traveller’s exposure to pollutants is impacted by their choice of travel mode (train, bus, car, bike, walk). This project compared the levels of pollutant exposure to toxic particulate matter for a ‘typical’ commute journey to Monash University made by each of these modes.

**Improving the accuracy of walking measurement with electronic pedometers** (Garlick/Seethaler/Greaves)
Measurement of walking trips has traditionally been a difficult and inaccurate phase of data collection. This project investigated the potential for and issues associated with using a small electronic pedometer for recording walking distances.
Emissions from Heavy Vehicles  (Matheson/Greaves)
Emissions from heavy vehicles are expensive and problematic to monitor. This project entailed a literature review of available options and a proposal for a heavy vehicle emissions monitoring program in Melbourne.

Bicycles and intermodal transport  (So/Rose)
This project is exploring experience in Australia and overseas with the provision of infrastructure to encourage intermodal journeys on bicycle – particularly bicycles and public transport. The review is being initially focused on the provision of racks on buses to accommodate bicycles.

Analysis of bicycle count data  (Stephenson/Rose)
This project is exploring the trends in bicycle counts at particular locations around Melbourne and trying to relate the growth in bicycle usage to the investment in on- or off-road bicycle facilities.

Bicycle facility Level of Service  (Cheung/Rose)
The level of service provided by bicycle facilities is an important determinant of user satisfaction and route choice behaviour. The aim of this project is to apply U.S Highway Capacity Manual methods to a series of case studies in order to determine the level of service provided by Melbourne bikeways.

Power assisted bicycles  (Smith/Reed/Rose)
Legislation in Australia limits the power assistance which can be provided on a bicycle to 200W. This is now well below the power limits which are allowed overseas. This project is exploring dimensions for a performance based standard for the regulation of power assisted bicycles. Field data is being collected to examine the health and mobility tradeoffs associated with power assisted bicycles.

Shared pedestrian and traffic zones  (Pownell/Rose)
This project is comparing local and overseas experience with shared use zones where pedestrians and vehicles have equal rights of way.

Access plans for shopping centers  (Pham/Rose)
This project is explored the development of access plans for major shopping centres. These centres often have a high proportion of staff and customers travelling by private motor vehicle and this study is exploring the potential to encourage greater use of walking bicycle and public transport access.

Panel travel surveys  (Verlaan/Rose)
This project is examined the role of panel surveys in travel behaviour research. A skirmish test of a five day travel survey was used to refine a survey instrument to be used in a panel study in Melbourne.

Inner city public transport rights of way  (Somers/Rose)
This project investigates the issue of allowing buses to access tram rights of way. The investigation searched for examples of shared operations both within Australia and
internationally. This was followed by extensive consultation with a wide range of stakeholders and visits to a number of sites to examine specific issues. The findings and the process of this investigation are relevant to a number of shared use situations specifically and to transit priority broadly.

*Public transport stop design* (Grant/Ryan/Currie/Young)
This study investigates the efficiency of the design of public transport interchange designs. It compared these designs with international standards on interchange design.

*Road Space Allocation* (Saville/Yuen/Young)
This project looked at the allocation of space to trams and how this can be justified in an environment of competition with other vehicles.

*Public Transport Provision In Suburban Melbourne* (Scanlon/So/Jayakodi/Young)
This project investigates the level of provision of public transport in suburban Melbourne, focusing on retail and commercial centres.

*Pedestrian Crossing Analysis* (Sia/Lees/Young)
This project investigates the use of signalised or unsignalised pedestrian crossings, and examines the base parameters for measuring the performance and the legal use of crossings.

**MASTER OF ENGINEERING SCIENCE BY COURSEWORK AND MINOR THESIS (ITS Monash)**

The following student submitted her thesis and completed in 2003. This was the last student enrolled in this course.

*Transport for people with disabilities* (Sigrid Sanderson/Professor William Young)
The project looked 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 was investigated.

**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. Four handbooks have been published under the Pergamon imprint over a period of 4 years. The first handbook on Transport Modelling was published in 2000, the second on Logistics and Supply-Chain Management, the third on Traffic Systems and Control have been published in 2001 and the fourth on Transport and the
Environment published in 2003. An additional 2 volumes to complete the series are in progress. The themes are spatial planning systems, and transport policy and institutions. These will be published in 2004 and 2005.

“Handbook of Transport Modelling is a superb resource for transport researchers, planners, operators and educators, covering all aspects of transport – demand, costs, performance, valuation – and a wide range of modelling techniques in one comprehensive volume. The editors have called on a group of experienced modellers to report the state-of-the-art of a range of models and their application to passenger and freight transport, across all modes.

“The handbook is a valuable contribution at a time when the need for sound data and rigorous analysis of transport proposals are essential antidotes to projects promoted through hyperbole and/or ideology. Recommended for University libraries, consultants’ offices and government agencies.” – PROFESSOR DEREK SCRAFTON, TRANSPORT SYSTEMS CENTRE, UNIVERSITY OF SOUTH AUSTRALIA AND FORMER DIRECTOR GENERAL OF TRANSPORT, SOUTH AUSTRALIA.

“Edited by two of the leading figures in transportation research and dissemination, these handbooks are likely to become the essential reference work in the field.” – DR JOHN PRESTON, DIRECTOR, TRANSPORT STUDIES UNIT, UNIVERSITY OF OXFORD.

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Transport provides the technological means to facilitate movement of passengers and goods, but it also is at the centre of the growing concern about environmental degradation in the form of air pollution, global warming, noise, and safety. Combined with traffic congestion in major conurbations - at the ports, at the airports, and on the roads, the transport sector has been cited as a major contributor to the ills of twenty-first century society. Roads in particular, which provide the infrastructure for moving cars and trucks, have come under increasing criticism on environmental grounds. The question has been raised whether they are the servant of technology rather than whether they offer a positive opportunity to mould the environment.

Despite the concerns about adverse environmental effects, it cannot be overlooked that there are however many positive features of transport. The challenge is to manage the benefits of transportation better so that the broad set of environmental impacts are reduced to acceptable levels while ensuring acceptable outcomes in terms of economic performance and equity. Civic pride embellished in the design of transport systems must be given a centre stage in the deliberations. A challenge of sustainable transport will require careful consideration of technological innovation and increasing consumer awareness.

This volume was constructed using a meta-analysis of relevant journal contributions to identify the key themes it would have to address. The outcome was 43 chapters. These chapters cover environmental concepts (physical and economic); key environmental concerns (global warming, air quality, noise, safety, amenity and severance); the role of fuel sources and vehicle technology (including intelligent transport systems) as means of reducing environmental externalities; appraisal, valuation and impacts of externalities; institutional and political settings and policies designed to combat growing environmental concerns; and the role of environmental legislation. A number of chapters highlight some specific themes that cut across many of the topic areas listed above (for example travel and tourism, gender, public attitudes and greening of the local environment). Early in the handbook seven chapters overview the contribution of each main transport sector to the consumption of energy and creation of emissions.

Each chapter was specially commissioned from an acknowledged world expert on its topic. Each offers an overview and useful insights to those familiar with the area as well as those new to it. Systematic and thorough in its creation, current and accessible in its content, and authoritative and international in its authorship, the Handbook of Transport and the Environment will be the definitive reference work on this important subject.

“[Transportation is] strongly implicated in many major environmental problems: air and water pollution, heavy energy use, fragmented farmlands and habitats, wildlife and biodiversity losses, and community disruption. In turn, these problems are adversely affecting human and ecosystem health and overall quality of life.

In addition, the negative effects of transportation are unevenly distributed. The results of transportation investment decisions – facilities and networks – frequently have a disproportionate impact on inner-city neighbourhoods and older suburbs. Outward movement often proves costly to the communities and businesses that are left behind. People who cannot drive have limited access to jobs, services, education, and recreation. Older people, low-income populations, persons with disabilities, and minorities bear a disproportionate share of these adverse impacts.

Policy-makers and transportation professionals [will be expected] to provide the transportation facilities and services needed to accommodate growth efficiently, at low cost, and in a socially and environmentally responsible manner. They must find ways to deliver a transportation system that simultaneously promotes growth, adds to the health of communities and individuals, uses energy efficiently, is inclusive, and enhances the natural and built environments.”


“Each Party included in Annex I in achieving its quantified emission limitation and reduction commitments under Article 5, in order to promote sustainable development, shall: (a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as: [...] (vi) Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector.”


Edited by Professor Kenneth J. Button and Professor David A. Hensher
Professor David Hensher and Dr Shams Rahman prepared a proposal for the Food Management Institute and were shortlisted. This led to a more detailed proposal with a focus on food logistics.

In the role of Associate Dean (Postgraduate Coursework Programs) Professor Hensher has undertaken a number of Faculty-wide strategic initiatives:

- Acting Dean from 3-13 February 2003.
- Audit and review of the Faculty web presence, incorporating qualitative research into the site’s strategic intent, content, structure, responsibilities and currency of information. (Completed 25 February)
- Pre-pilot research into the introduction of a peer support program for postgraduate students, conducted with students studying transport and logistics in Semester 1, 2003. (Completed 29 May)
- Introduction of up to four new scholarships to be awarded each year to local postgraduate students participating in study abroad through the University exchange program. (Completed 13 June)
- Implementation of a Faculty-wide pilot study into the provision of a combined peer support and mentoring program for postgraduate students, involving 50 mentors and 250 new postgraduate students in Semester 2 (Current)
- Review of postgraduate student feedback mechanisms and opportunities for benchmarking. (Ongoing)
- Implementation of an upgrade to the Faculty web site, partnering with Major Projects Group to deliver enhanced content management, navigation, look and feel and management of the web site. (Launched November 1)
**Chair of Public Transport (ITS Monash)**

Australia’s first chair of Public Transport, Professor Graham Currie, started work at ITS (Monash) in June 2003. The chair is jointly funded by the Victorian Department of Infrastructure, VicRoads, the Bus Association of Victoria and Monash University. The aim of the position is to increase learning and knowledge within the public transport industry through education and research.

Professor Currie will play a crucial role in ensuring Melbourne meets its increasing transport demands in the coming decades. In an interview with Monash News in August 2003, Professor Currie said that his new role was particularly significant given Melbourne’s growing portfolio of major events, such as the 2006 Commonwealth Games and the 2007 World Swimming Championships. He went on to say that an effective public transport system was vital to any major city, and even more so when that city was home to events that would attract visitors in the millions. Clever cities used the experience gained from hosting events such as these as part of planning for more effective urban transport in the future.

**Traffic Engineering and Management Book reprint (ITS Monash)**

Professor Bill Young and Brenda O’Keefe have been heavily involved in 2003 with the re-editing of the “Traffic Engineering and Management” book, which was reprinted in December. The book, which consists of a number of specialized chapters covering a variety of topics, was due for a major update. Professor Young has worked closely leading experts within the profession in Australia to update the contents of this book which has become a standard reference text for the traffic engineering profession in Australia. The reprint will be ready for the Traffic Engineering and Management workshop to be held in Melbourne in March 2004.

**Pilot On-line Registration System (ITS Monash)**

Brenda O’Keefe, Administration Manager at ITS (Monash), has been involved in piloting an on-line registration system run by Monyx, the company that runs Sports and Recreation, the food outlets and the bookshop at Monash University. ITS (Monash) will be using the on-line system for their Traffic Engineering and Management workshop in March 2004. It is anticipated that the registration system will promote efficiencies in enrolment procedures and provide added convenience for workshop registrants which will have a positive impact on the workload of the Administration Manager when running workshops for ITS (Monash).
7. EDUCATION

ITS: Sydney

The Education program at ITS Sydney includes:

- PhD program;
- Masters by Research Program;
- Graduate transport & logistics management program;
- Certificate and Advanced 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

Students in the PhD program at ITS (at the end of 2003) include:

**Full-time**
Sean Puckett (2003) Interactive agency choice, supply chain alliances and urban freight systems.

**Part-time**

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).

The demand for the units of study is very high. In 2003 we had a 300% increase in students numbers (with class sizes in the range 45-80 students). Many of the students are doing a major or minor in logistics and/or transport management via the MBus, MCom and MIB as well as the transport and logistics degrees.

Courses

ITS taught the following transport and logistics management courses in 2003:
(Student in each unit of study are given in parenthesis)

**Summer Session (4-21 February)**
- Logistics Management (133)
- Traffic Systems Management and control (12)

**Semester 1 (10 March – 29 May)**
- People, Work and Organisation (208)
- Strategy and Supply Chain Management (213)
- Transport Economics and Management (89)
- Transport Policy, Decision Making and Environment (65)

**Winter Session (2 July – 1 August)**
- International Logistics (204)
- Land Use and Transport Planning (14)

**Semester 2 (4 August – 20 October)**
- Survey Design and Management (27)
- Logistics Systems (254)
- Geographical Information Systems for Planning and Marketing (105)
- The Industry Laboratory (177)
- International Logistics (142)

Student awards

**ITS 2003 ANNUAL EVENING OF AWARD PRESENTATIONS**

The Institute of Transport Studies (ITS) Annual Presentation of Awards 2003 was held on Saturday 29 March at the Forum Restaurant, Darlington Centre, The University of Sydney. The function, attended by 110 guests, was an opportunity for the industry, guests and the Institute to acknowledge the significant achievements of the students in the Institute’s graduate and industry programs.
During the evening a number of graduands were presented with their Certificate of Transport Management by Mr Darryl Mellish, Executive Director, Bus & Coach Industrial Association who also announced that the Association’s prize for the best student in the 2002 CTM program was Cathy Dyer, Inverell Bus Service.

In presenting the award Darryl Mellish congratulated the Institute of Transport Studies for its active and important contribution to the bus and coach industry in New South Wales and mentioned the enormous value that the state receives from the quality partnership with ITS. The substantial contribution of ITS, particularly Professor David Hensher, in the preparation of the 2002 submission to IPART was given a special mention. Having been introduced in 1992, those who graduated in the 2002 CTM course were the 10th group to do so in what Darryl described as a hugely successful joint venture in education and training between the BCA and ITS. The signs are that the program will continue to thrive and operators are encouraged to enrol their new management and operations staff in the July 2004 program (for further details email Loloma Wren on: lolomaw@its.usyd.edu.au).

As part of the joint venture with BCA, ITS also offers a Certificate of Coach Management program. Aimed at small tourist bus and coach operators, this course attracted 180 enrolments in the three CCM courses in 2002 whilst the number of enrolments in the three courses offered in 2003 total 156.

In addition to the CTM graduands, the top students in the ITS graduate transport and logistics management programs were recognised with awards given by professional organisations. Since the early 1990’s over 20 operators in NSW have graduated with a Masters degree in transport management from The University of Sydney.

The awards were presented at the Institute of Transport Studies annual presentation cocktail party on 29 March 2003 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 Arne Walter, International student.
- The Chartered Institute of Logistics & Transport Ken Hillyar award for best Year 1 student in the MTM program was awarded to Hena Mohini Gill, International student.
- The Chartered Institute of Logistics & Transport Sir Hudson Fysh award for best Year 2 student in the MTM program was awarded to Frederic Horst, Cargolux, Luxembourg.
- The Australian Institute of Traffic Planning and Management prize for best student in the Graduate Diploma program was awarded to David Bean, Danzas.
- The Logistics Association of Australia Industry Logistics Prize was awarded to Philip Bullock, ITS.
- The Bus and Coach Association (NSW) prize ($250) for the best student in the 2002 Certificate of Transport Management was awarded to Catherine Dyer, Inverell Bus Service.
PhD Student Travel Awards

- $800 for Wafa Dabbas – to assist in purchase of books and software and attendance at CAITR2003.

......‘Congratulation to ITS for another successful year. The presentation of Awards was a fantastic event and I enjoyed the evening. Thanks for your invitation. Best regards, Baojin Wan, PhD (2001)’......

Certificate programs

Certificate of Transport Management – Bus and Coach (CTM)
Established in conjunction with the Bus and Coach Association (NSW), this program is designed to meet the requirements of accreditation for NSW bus and coach companies operating under the 1990 Passenger Transport Act. This comprehensive course enables operators to be accredited for all route bus, coach and tourist vehicle operations.

The July 2003 course attracted 33 enrolments.

Comments on program from participants:

- A short and direct approach to our industry and one that offers interesting and relevant topics
- The overview of accreditation requirements and what my responsibilities are as owner will be of immense help
- Including how to handle discrimination and how the discrimination act works is useful
- As a new entrant into the industry the knowledge provided was fantastic
- Every session was interesting
- Presenters were well versed in their respective topics
- All speakers were very enlightening, informative and showed a warmth to their subject matter
- Good practical information and advice
- All the information was very clear and easy to understand
- The presenters explained themselves very well and could answer the questions asked simply and succinctly
- Congratulations on having an excellent lineup of lecturers who have industry experience and who addressed the issues we really need to know
- Meeting other people seeking accreditation and the opportunities for networking
- Speakers were very good and presented their material very well.
Certificate of Coach Management (CCM)

The Certificate of Coach Management has also been developed in conjunction with the Bus and Coach Association (NSW) to meet the requirements of accreditation for NSW bus and coach companies operating under the 1990 Passenger Transport Act. It was designed specifically for operators accredited for long distance and tourist vehicle services.

In 2003 three courses were held (February, June and October) with a total of 143 students enrolled.

Following legislative changes in the bus and coach industry, a comprehensive review and rewrite of the material for both of these courses has been undertaken and will be ready for the first Certificate of Coach Management program scheduled for February 2004.

The Institute wishes to acknowledge the support it has received from the Bus & Coach Association and the team of industry professionals who are not only involved in the CCM and CTM courses as lecturers, but who are also reviewing and rewriting the material for future courses.

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.

Advanced Certificate in Transport & Traffic Management (ACTTM)

In 2003 the Advanced Certificate in Transport & Traffic Management was specifically tailored to the needs of the staff of the Roads & Traffic Authority. The course comprised four modules: Transport and Traffic Systems, Traffic Systems Control and Management, Transport Economics, Travel Choice, Demand and Valuation, and Transport Policy and Decision Making. Out of 63 RTA applicants, 15 were selected to undertake this 10 day intensive program. Of these 15, 11 passed, two deferred and 2 failed.

The 2004 course will be modified for cater for students coming from other transportation areas.

Module 1 – Transport and Traffic Systems

Definition of a transport system; passenger and freight transport systems; the transport task; roles and responsibilities in the transport systems of Australia; planning, design, construction, maintenance, and operation of transport systems. We introduce 30 key points of transport systems to illustrate the issues in this module and to set the stage for
the subsequent modules. We introduce the basics of traffic analysis: speed, volume, density, capacity, interrelationships among these, and the development of level of service concepts. Participants will solve some simple problems relating to traffic analysis and will review selected key points.
Duration: 2 days.

**Module 2 – Traffic Systems Control and Management**
This module introduces issues of safety, traffic flow, gap acceptance, and the construction and use of time-space diagrams. We introduce the need for control of the transport system; elements of control: lane markings, signs, signals, geometric designs; intersections and intersection problems; vehicle actuated and fixed time signals; signal progression and area control; freeway controls. We introduce the issue of facilities for and accommodation of bicycling and walking. We discuss the need to estimate highway capacity and discuss some of the methods to estimate capacity. We also introduce levels of service for the highway system; AustRoads standards and procedures; vertical and horizontal alignments and impacts on safety and control; traffic calming; high occupancy vehicle lanes; and parking provision. We introduce Intelligent Transport Systems: definition, types, discussion of value and contribution to traffic control and management. Participants will solve some simple problems relating to traffic signal timing, capacity estimation, and level of service.
Duration: 3 days.

**Module 3 – Transport Infrastructure Planning and Forecasting**
This module introduces the issues relating to infrastructure planning and risk sharing for passenger and freight transport. It covers some of the financing options, such as joint ventures, Build-Own-Operate-(Transfer) (BOO(T)), and other types of private-public financing ventures. It deals with institutional settings to deliver transport infrastructure. We introduce concepts related to traffic forecasts, revenue projections, value of travel time savings, trip purposes, time of day issues, etc. Induced travel and its effects on investment decisions and planning is discussed. The Sydney travel model is introduced with a discussion of how trip tables are developed for use in traffic planning and forecasting. Key behavioural parameters of the model are discussed.
Duration: 2 days.

**Module 4 – Transport Policy, Decision Making, and the Environment**
This module introduces transport policy development and the relationship of transport to other sectors of the economy; the nature of decision making and models of decision making; effect of decision making characteristics on technical transport planning and engineering; performance measurement and policy; external policies and their impact on the transport sector. The impact of human activity on the environment. Key environmental themes are: air quality, noise pollution, traffic congestion, greenhouse gas emissions, social alienation and quality of life. We outline the EIS process and the legislation behind it. We also provide an overview of the main methods to evaluate projects that have an environmental impact (e.g., cost-benefit analysis, cost effectiveness analysis, multi-criteria evaluation). We introduce various Economic Analysis Manuals. We also introduce TRESIS (the Transport Environmental Strategy Impact Simulator) as a useful decision tool to evaluate the systemwide and local
impacts of transport initiatives such as infrastructure provision (roads, tollroads, busways, light rail, heavy rail etc), pricing (congestion charging, automobile prices, GST, fuel taxes, carbon tax, parking prices), and public transport service and fare levels. Participants will get a hands-on experience in planning Sydney. Duration: 3 days.

**ITS: Monash**

The educational activities and programs at ITS Monash include:

- PhD program
- Master of Engineering Science by research
- Graduate Certificate in Transport and Traffic
- Postgraduate Diploma in Transport and Traffic
- Master of Transport
- Master of Traffic
- Master of Infrastructure Engineering and Management (course management responsibility)
- Transport Management Course in Bus and Coach Operations
- Education Program in Parking Management

In this section, details are also provided on student awards (both undergraduate and postgraduate) as well as the undergraduate student scholarship.

**PhD program**

Students engaged in PhD research at ITS Monash at the end of 2003 were:

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

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

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

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

*Rita Seethaler:* Investigation into the use of persuasion techniques in transport policy

**Master of Engineering Science by research**

Students engaged in Masters research at ITS Monash at the end of 2003 were:

*Ruimin Li:* Improving travel time estimation models

*Dudung Purwadi:* Using stated preference method to examine travel preference in Indonesia
Master of Engineering Science by coursework and minor thesis

The following student submitted her thesis and completed during 2003:

*Sigrid Sanderson*: Transport for people with disabilities

Note that 2001 was the last year that this course was offered in this form. The section below provides details of the revised course structure.

Postgraduate degrees by coursework

The revised distance education postgraduate program in Transport and Traffic came into effect in 2003 following revisions made to the program during 2002. Although similar in structure to the original program, there are now two Masters degree options (Master of Traffic and Master of Transport) which require eight subjects to be completed by students who enter with a four year undergraduate degree. A double Masters degree option (Masters of Traffic and Master of Transport) is also available for students who complete 12 subjects. As part of the course changes, two new units were added to the program: CIV5315 Transport Economics, which was first offered in semester 2, 2003, and CIV5314 Transport Planning and Policy will come on line in semester 1, 2004.

The course continues to attract strong interest from throughout Australia and increasingly overseas. A preliminary review undertaken during 2003, has laid foundations for more detailed development to be undertaken in 2004 on additional units and specialisations for the program.

Units

Transport and traffic related units offered in 2003 as part of the distance education postgraduate coursework degree programs are listed below along with details of the unit co-ordinator:

- CIV5301 Traffic Engineering Fundamentals (Rose)
- CIV5302 Traffic Engineering and Management (Young)
- CIV5303 Quantitative Methods (Greaves)
- CIV5304 Intelligent Transport Systems (Rose)
- CIV5305 Transport Network Modelling (Greaves)
- CIV5306 Road Safety Engineering (Daly)
- CIV5307 Parking Policy and Design (Young)
- CIV5308 Case Studies in Transport (Greaves, Rose, Young)
- CIV5310 Infrastructure Project Management (Seethaler)
- CIV5311 Infrastructure Project and Policy Evaluation (Richardson)
Master of Infrastructure Engineering and Management

Using the same format and operational methods as the ITS (Monash) postgraduate programs, the Department of Civil Engineering developed a distance education masters program in infrastructure engineering and management in 2001. The course consists of eight units dealing with asset management, project management and project and policy evaluation, with specialisations in traffic, transport and water engineering. As a result of the experience gained in running the Bus and Coach and Transport Masters courses, it is managed by the Administration Manager of ITS (Monash), Brenda O’Keefe, on a contract basis for the Department. The course was offered for the first time in 2002 and there are 17 students enrolled in 2003.

Student awards

Monash University awards

The following prizes were awarded in 2003:

The Egis Highway Design Prize – awarded to the group of BE students who submitted the best highway design – Duong Hong Lee, Jonathan Lam, Vlad Myrsikov, Nguyen Phan Anh and Catherine Rossignoli

The Richardson Prize in Transport – awarded to the BE student showing the greatest proficiency in one transport elective and project – Naomi Langdon

The Traffix Group Prize – awarded to the BE student showing the greatest proficiency in level 4 transport engineering elective subjects – Naomi Langdon

The National Transport Student Paper Prize

The National Committee on Transport of The Institution of Engineers, Australia awards a student prize annually to encourage original Australian research on current transport issues. In 2003, the best paper was awarded to Christopher de Gruyter from ITS (Monash). Chris had been the recipient of the ITS (Monash) undergraduate student scholarship in 2001/2002. His winning paper, titled “Exploring bicycle level of service in a route choice context”, was based on his final year research project.

Undergraduate student scholarships

The ITS (Monash) Undergraduate Student Scholarship

This scholarship was initiated in 2001 to encourage the outstanding undergraduate students to consider a research career in transportation.
Two students, Andrew Somers and Patrick Reed, were awarded scholarships from December 2002 to February 2003. Andrew worked with Stephen Greaves on a project using GPS data to form profiles of “real” driver behaviour. Pat worked with Professor Bill Young on road space allocation on two arterial roads in Melbourne, developing performance criteria for different travel modes. Both these projects were funded by a Faculty Research Grant.

In 2003, David Young was awarded a scholarship to undertake an international review of education and research activities in the Public Transport industry. He will work with Professor Currie from December 2003 to February 2004.

**The Traffix Group Scholarships**

The Traffix Group (formerly Turnbull Fenner Pty Ltd) has generously offers two scholarships to students who have an interest in and intend to pursue careers in transport engineering. The students must be in levels two and three of the Bachelor of Engineering (Civil Engineering) degree at the time of application, and are awarded $1,000 and $1,500 respectively as well as six to twelve weeks’ work experience with the company. The inaugural presentations were made in 2003, with the level two scholarship being awarded to Anthony Mirabito and the level three scholarship to Adam Smith.

**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 3263 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. 1227 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 Developments

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. From mid 2001 the majority of new enrolments in the TMC came from new entrants to the industry and additional staff from larger operators.

Feedback from course participants has been excellent, indicating the modifications to the course undertaken since its inception have further improved its relevance and service delivery, especially to meet the needs of new participating groups i.e. industry entrants, additional management and supervisory staff (or aspiring managers) of large operators, and small operators wanting to expand their range of services.

With fewer unit enrolments, efficiencies in course delivery have recently been achieved and financial viability of the program improved with the fee increase introduced in January 2002. To maintain financial viability in a rising cost environment, annual unit fee changes have been introduced.

In response to participant feedback, in 2003 a revised schedule for offering the management subjects was introduced. One management subject is now available in each of the three semesters, with the introductory subject 4101 continuing to be offered in all three semesters. Subject manuals have been revised to enable the management subjects to be taken in any order, thereby enabling participants to complete the course in minimum time. The Department of Infrastructure and the Bus Association of Victoria have supported these changes as a means of continuing to provide efficient service to operators in an environment of naturally declining enrolments.

Presentation of Awards

In 2003, the presentation of the 2002 best performance awards for the Transport Management Course in Bus and Coach Operations was held in conjunction with the third annual Ogden Lecture on 11 September in the Hotel Sofitel. The keynote address was given by Professor Graham Currie, newly appointed Professor of Public Transport at ITS (Monash). Nearly 80 people attended, and the audience included Carlo Carli, Parliamentary Secretary for Infrastructure, senior officers from the Department of Infrastructure, and Keith Foote, Deputy Executive Director of the Bus Association of Victoria. 120 bus and coach operators completed the course in 2002, taking the total number of completions to more than 1200 since the inception of the course in 1999.
Industry and government sponsored awards for outstanding performance in the course in 2002 were:

The Bus Association of Victoria Overall Award for best performance in all units was awarded to Kym Driver, Driver Group, Mt Waverley.

Department of Infrastructure Small Operator Award for Unit 4101, Introduction to Legislation and Operations, was awarded to Carol Hooper, Mornington Peninsula Shire Council.

Audit Enterprises, AC/AO Operator Award for Unit 4101 Introduction to Legislation and Operations was awarded to Michael Oaten, MPO Pty Ltd, Charter Coach Operators, Oakleigh.

The Pitcher Partners Large Operator Award for Unit 4102, Financial Management, was awarded to George Scott, Seasight Tours, Apollo Bay.

The Eastside Truck and Bus Service Centre Award for Unit 4104, Marketing, Planning and Operations was awarded to Kym Driver, Driver Group, Mt Waverley.

The Grenda Group Award for Unit 4103 Human Resource Management was awarded to Larry Langford, Cobram Secondary College.

Best Performance (Unit 4103: Marketing, Planning and Operations) 
sponsor : Eastcoast Truck and Bus Service Centre (Ventura Buslines), represented by Nick Lines, and winner Kym Driver
Education Program in Parking Management

The Education Program in Parking Management was initiated by ITS (Monash) in February 1998. It is a national course offered via distance education. The program was developed by ITS (Monash) and the Parking Association of Australia Inc., in consultation with parking operators, equipment manufacturers, consultants and local government engineers. The course is aimed at operators, managers, engineers, analysts and planners working in the parking area. The education program aims to develop knowledge and understanding of parking specialisations which will assist participants to advance their careers in the parking industry by providing knowledge of management, policy, design, technology and information systems. The program enables participants to bring together knowledge from the many disciplines involved in the parking industry and to communicate effectively with other people in the industry and the wider community, and also addresses issues related to local government, regional and state authorities, consultancies and others in the parking profession.

The four units are each comprised of 12 topics, and there are self assessment review questions for each topic and an assignment for each unit. A prize of $200 is made each year to the top student completing the program. There were six enrolments in the course in 2003. The units offered are as follows:

- Unit 1101 Introduction to parking
- Unit 1102 Parking management
- Unit 1103 Parking design & policy
- Unit 1104 Parking technology & information collection.
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 almost 3000 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. 1476 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 Developments

During 2001/2002, the ITS Monash team, with financial assistance from DOI and reference to BAV and other industry specialists, implemented the recommendations of the November 2000 Course Review, by:

- Simplifying the course structure to four subjects, with accreditation stream requirements met by specialist exam questions.
- Providing more opportunity in exam questions for application of learning materials to the operator’s own business, including applications to school bus operations.
- Revising the content of all units, especially in relation to recent legislative and regulatory changes, and adding new material in important areas such as school bus safety, workplace safety, national driving hours and chain of responsibility.
legislative developments, internal review/compliance auditing and risk management, yield management and probability analysis.

- Updating the Marshco case study and associated maps (originally developed by ITS-Sydney).
- Maintaining the course standard and level but with simpler, less technical language in the subject manuals, a more user friendly logical flow of topics and with more responsive tutorial support and exam feedback.

Feedback from course participants has been excellent, indicating the modifications to the course have further improved its relevance and service delivery, especially to meet the needs of new participating groups i.e. industry entrants, additional management and supervisory staff (or aspiring managers) of large operators, and small operators wanting to expand their range of services.

Continuing review and improvement of the course, in conjunction with advice from DOI, BAV and industry participants, remains an ongoing priority.

In response to participant feedback, beginning in 2003, a revised schedule for offering the management subjects will be introduced. One management subject will be available in each of the three semesters, with the introductory subject 4101 continuing to be offered in all three semesters. Subject manuals will be revised to enable the management subjects to be taken in any order, thereby enabling participants to complete the course in minimum time. This scheduling will be better related to the needs of participants now that the large group of operators who were in the industry when operator accreditation was first introduced has now completed the course.

Awards dinner

The Institute of Transport Studies held its third annual Transport Management Course awards night and dinner at the Monash Club on 30 August, 2002. Carlo Carli MP, Parliamentary Secretary for Infrastructure, provided the keynote speech.

Over 130 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 43 operators. Industry sponsors announced the nominees and winners of six awards for outstanding performance in the course.

Over 200 bus and coach operators completed the course in the last year.

Industry sponsored awards for outstanding performance in the course in 2001 were:

- The Bus Association of Victoria Overall Award for best performance in all units was awarded to Gregory Condon, Wodonga.
- Department of Infrastructure Small Operator Award for Unit 4101, Introduction to Legislation and Operations, was awarded to Leanne Swain, Horden Vale.
• Audit Enterprises, AC/AO Operator Award for Unit 4101 Introduction to Legislation and Operations was awarded to Kym Driver, Driver Group, Mt Waverley.

• The Pitcher Partners Large Operator Award for Unit 4102, Financial Management, was awarded to James Garrett, Action Tours, Glenroy.

• The Eastside Truck and Bus Service Centre Award for Unit 4104, Marketing, Planning and Operations was awarded to John McCarthy, Lancefield Bus Service, Lancefield.

• The Grenda Group Award for Unit 4103 Human Resource Management was awarded to Gregory Condon, Wodonga.

Generous door prizes for the night were donated by Konica and Accor Hotels.

**Education Program in Parking Management**

Bill Young continued to present 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.

“ITS leads the way in publication productivity in the School of Business”

ITS: Sydney
Refereed Publications:

A1. Books (including edited books) (Refereed)
Published


In Press


B1. Book Chapters (Refereed)
Published


**In Press**


**C1. Journal Articles (Refereed)**

**Published**

Hensher, DA & Sullivan, C 2003, ‘Willingness to Pay for Road Curviness and Road Type’, *Transportation Research D*, vol. 8, no. 2, pp. 139-155.


Stopher, PR, Bullock, P & Jiang, Q 2003, ‘Visualising Trips and Travel Characteristics from GPS Data’, Road & Transport Research, vol. 12, no. 2, pp. 3-14.

Stopher, PR, Bullock, P, Rose, JM & Pointer, G 2003, ‘Simulating Households Travel Survey Data in Australia: Adelaide Case Study,’ Road and Transport Research, vol. 12, no. 3, pp. 30-44.


In Press


**Proceedings of Conferences (Refereed)**

**Published**


In Press


**Material Completed under Editorial Consideration (Refereed Sources)**

**Journal Articles**

Hensher, DA ‘Accounting for Stated Choice Design Dimensionality in Willingness to Pay for Travel Time Savings’, (ARC VTTS Grant 01-03).


Hensher, DA, Greene, WH & Rose, JM ‘Using classical inference methods to reveal individual-specific parameter estimates and avoid the potential complexities of WTP derived from population moments’.


Hensher, DA ‘Information processing strategies in stated choice studies: the implications of respondents ignoring specific attributes’.

Jones, S & Hensher, DA ‘Predicting Financial Distress: a Mixed Logit Model’.

Hensher, DA & Jones, S ‘Predicting the Financial Distress of Firms: An Assessment of the Performance of Conditional and Unconditional Distributions within a Mixed Logit Framework’.

Jones, S & Hensher, DA ‘Predicting Corporate Failure: Do Reported Cash Flows Matter?’

Hensher, DA, Greene, WH & Rose, JM ‘Deriving WTP Estimates from Observation-specific Parameters using Classical Inference Methods’.


Hensher, DA ‘How do Respondents Handle Stated Choice Experiments? - Information Processing Strategies under Varying Information Load’

Alsnih, R & Stopher, PR ‘Estimating Eligibility Rates’ A Crucial Component of the Calculation fro Response Rates’ submitted to the Transportation Research Record.


Stopher, PR, Bullock P & Horst, FNF, ‘Conducting a GPS Survey with a Time-Use Diary’ paper submitted to the ASCE Journal of Transportation Engineering (May).


Books, Book Chapters, Journal Articles and Conference Papers (in progress)

Hensher, DA & Fitzgerald, C ‘Elasticities of Demand for Public Transport Fares and Service Levels: A Meta Analysis’.

Hensher, DA & Houghton, E ‘Integration of Commuter and Non-Commuter Mode Choice Models into The PBC Framework’.


Jones, S & Hensher, DA ‘Credit Risk: Quantitative Methods And Analysis (A Reference Work)’.

Hensher, DA & Jones, S ‘Combining Data Sources In The Assessment Of Business Risk’.

Puckett, S & Hensher, DA ‘Design of an Interactive Agency Choice Experiment for the Distribution Chain’.

Hensher, DA & Puckett, S ‘Agent Interaction and Choice Revelation in the Freight Distribution Chain’.


Hensher, DA, Shore, N & Train, K ‘Willingness to Pay For Water Services’.

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Hensher, DA & Rose, J ‘Development of Commuter and Non-Commuter Mode Choice Models For Sydney’.

Hensher, DA & Puckett, S ‘Freight distribution in urban areas: the role of supply chain alliances in addressing the challenge of traffic congestion for City logistics’.

Hensher, DA & Rose, J ‘Respondent burden in stated choice experiments: does temporal burden-spreading help?’

Truong, TP & Hensher DA ‘Free-riding and the invisible hand in the optimal provision of public infrastructure goods: with reference to toll roads’.


Rahman S, ‘World class logistics: estimating its influence on environmentally focused logistics practices’.

Rahman S, ‘Integrating Thinking Process and Six Sigma for identification, measurement and improvement of supply chain metrics: A case study’.

Rahman S and Hsiao, M, ‘Structural equation modelling in logistics research’.

Rahman S, ‘Positioning and integration of supply chain and their effect on agility: a structural equation model’.


Material Presented to Conferences and other Venues (Non-refereed)


Other Publications

The following title ‘Classics in Transport Analysis’ – Urban Transport – Piet Rietveld, Kenneth Button & Peter Nijkamp, ISBN: 1 84064 550 4 – contains the following two articles:


ITS: Monash

Books & Book Chapters


Journal Articles


Journal Articles (in progress)


Conference Proceedings


Stopher, PR, Greaves, S.P. & Bullock, P. 2003 Simulating Household Travel Survey Data: Application to Two Urban Areas *Proceedings of the 82nd Annual Meeting of the Transportation Research Board, Washington DC.*


**Conference Proceedings (in press)**


**Project Reports**


**ITS: Monash**

**Books and Book Chapters**


Journal Articles


Journal Articles (in progress)


Conference Proceedings


Conference Proceedings (in press)


Project Reports


ITS Working Papers*

All Working Papers may be purchased from ITS. Working Papers from 2002 to current are available as .pdf files from the ITS website (www.its.usyd.edu.au/publications).

**ITS-WP-03-01**  

**Abstract:**
The paper provides a theoretical framework for analysing the effects of public infrastructure provision on private sector productivity using the example of a transport network. Public infrastructure such as a transport network is assumed to be a (congested) public good. When the provision of this good is at the long run equilibrium level, consumers pay a price which reflects the (individually-determined) marginal productivity of the good and the supplier is also recovering all its opportunity costs. In the traditional literature on transport congestion (Walters, 1961; Mohring and Harwitz, 1962), the concept of infrastructure capacity is often defined in term of the maximum level of traffic flow, which is more of a usage concept rather than a ‘capacity’ concept. Congestion is then defined in terms of the difference between the marginal social cost of this traffic flow and the marginal private costs. There has been some debate in the literature on the way travel demand in general, and traffic congestion in particular, has been defined in terms of traffic flow because this will tend to give an ambiguous definition of the concept of ‘congestion’ in some cases. An alternative measure for the concept of traffic demand (and supply), and of ‘congestion’, is in terms of traffic density or volume rather than in terms of traffic flow. In this paper, we explore this alternative definition of ‘capacity utilisation’ and of ‘congestion’ in terms of traffic density. We arrive at an alternative definition for the concept of optimal congestion tax that turns out to be more robust. This is because it can be applied, not only to the situation of ‘low congestion’ but also to the case of bottleneck or ‘hyper-congestion’ which is not well analysed in the traditional literature. The paper also illustrates this new concept with some numerical calculations based on empirical observations on an actual road network.

**ITS-WP-03-02**  
*Wearable GPS device as a data collection method for travel research* (de Jong and Mensonides)

**Abstract:**
Global Positioning System (GPS) devices are emerging as a potential means to collect improved data on the spatial aspects of personal travel. This paper builds on earlier work by Stopher and others on the use of passive GPS devices, for which additional non-GPS data may be added through a subsequent prompted recall survey. This paper presents sets of rules which can be applied to the raw data acquired by wearable GPS devices to determine the modes of travel used and the trip ends.
Experiments have been performed in which the devices were tested for a range of different situations, including collecting data on trains, buses, and ferries, collecting data in urban canyons and also with respect to the cold start phenomenon. The paper also describes the procedures undertaken to download and analyse the data.

**ITS-WP-03-03**

*Contract Areas and Service Quality Issues in Public Transit Provision: Some Thoughts on the European and Australian Context* (Hensher)

**Abstract:**
The introduction of contract regimes for the provision of bus services such as competitive tendering and performance-based contracts is usually premised on a prior assumption that the size of the physical contract area is given and that any policies related to interactions between contract areas such as integrated ticketing and fares are agreed to. This paper reviews the evolving arguments that promote a review of contract area sizes before recontracting and the positions supporting the benefits of service quality-related issues such as an integrated fares policy. Given that a growing number of analysts (especially in Europe and Australia) are promoting the appeal of increasing physical contract area size to facilitate, amongst other reasons, an integrated fare regime, it is timely to set out the pros and cons for such reform to ensure that they are not counter-productive to the desired outcomes of a reform process. The arguments herein caution the support for too small a number of large contract areas on grounds of internal efficiency losses and limited gains in network economies (but support amalgamating very small contract areas). The existing empirical evidence, limited as it is, tends to support contract areas (and depots) currently serviced by fleet sizes in the range 30-100 regardless of urban development profile. Alternative ways of delivering cross-regional and broad-based network benefits are proposed.

**ITS-WP-03-04**

*Environmental Justice Applications in Transport: The International Perspective* (Alsnih and Stopher)

**Abstract:**
This paper focuses on the application of environmental justice principles specifically in the transport context. It begins by giving a background of the environmental justice movement and a definition, and proceeds to describe current legislative mandates in the United States. A holistic approach to transport planning is introduced to highlight the importance of the interrelationships between transport and land use planning. Current practices adopted in terms of environmental justice are illustrated from the Mid-Ohio Regional Planning Commission report as well as a description of the data limitations that result from the models used in current analyses. The paper concludes by providing some recommendations on the areas that need to be developed to address environmental justice principles.
adequately, and the applicability of these principles internationally.

**ITS-WP-03-05**

*Models of Organisational and Agency Choices for Passenger and Freight-Related Travel Choices: Notions of Inter-Activity and Influence* (Hensher)

**Abstract:**

The study of traveller behaviour has in the main treated each agent in a decision-network as an independent decision maker conditioned typically (and exogenously) on the socio-economic and demographic characteristics of other agents and at best on a set of exogenous variables representing the (perceived ‘equilibrium’) influence of other agents. In many literatures it has long been recognised that agency interaction plays a (potentially) significant role in the actions of individuals. Examples at the household, community and business level abound. McFadden (2001a,b) recently stated that a high priority research agenda for choice modellers is the recognition of the role of social and psychological interactions between decision makers in the formation of preferences. Manski (2000) came to a similar conclusion and offered a plea for better data to assist in understanding the role of interactions between social agents (promoting the role of experimental choice data).

While the interest in (endogenous) interactions between agents involved in passenger travel activity is generally neglected, the absence is particularly notable and of greater concern with the renewed interest in the study of (urban) freight travel activity where a supply chain of decision-makers have varying degrees of influence and power over the freight distribution task. This paper reviews the broad literature on interactive decision making with a specific focus on choices made by interactive agents and the role of individuals in networks. A number of modelling perspectives are presented that use well established discrete choice paradigms. We highlight the challenges in designing data collection paradigms that are comprehensive, relevant and comprehensible by participating agents and suggest an agenda for ongoing research.

**ITS-WP-03-06**

*The Mobility and Accessibility Expectations of Seniors in an Aging Population* (Alsnih and Hensher)

**Abstract:**

Populations of post-industrial nations are aging. With a growing number of people living well into their 80’s and maintaining active lives, the transportation system will have to start focussing more closely on understanding their mobility and accessibility needs, so as to ensure that specific requirements of this large segment are not being ignored through the promotion of traditional ‘solutions’ and historical assumptions. This paper takes a close look at the evidence on the mobility needs and travel patterns of individuals over 64, distinguishing between the “young” elderly (aged 65 to 75 years) and the “old” elderly (over 75 years). This distinction is
particularly useful in recognising the threshold of health change that impacts in a non-marginal way on mobility needs. This distinction also focuses transport planning and policy on a commitment to understanding the different needs of these subgroups of the population, identifying services and facilities that better cater for these groups. We review the evidence, in particular, on the mobility characteristics of the over 75 year age group, including how they secure support through migration and settlement patterns. We use the empirical evidence from a number of western nations to identify the role of conventional and specialised public transport as an alternative to the automobile in meeting mobility and accessibility needs.

**ITS-WP-03-07**  
GPS Measurement of Travel Times, Driving Cycles, and Congestion (Bullock, Stopher, Pointer and Jiang)  
**Abstract:** In the past few years, various types of GPS devices have been developed for use in connection with travel surveys of various types. This paper describes an application in Sydney, Australia, in which GPS devices were used to collect data on automobile trips within the urban area, with the goal of developing information about travel times, driving cycles, and the incidence and severity of congestion. The paper describes steps taken in designing the sample in both cases, and presents the results of the data collection, together with estimates of the sampling errors on segment, link, and corridor travel times. It is concluded that GPS technology represents an accurate and inexpensive method for collecting travel time and speed information, even if samples are relatively small.

**ITS-WP-03-08**  
Revealing Differences in Willingness to Pay due to the Dimensionality of Stated Choice Designs: An Initial Assessment (Hensher)  
**Abstract:** Stated choice (SC) methods are now a widely accepted data paradigm in the study of behavioural response of agents (be they individuals, households, or other organizations). Their popularity since the pioneering contributions of Louviere and Woodworth (1983) and Louviere and Hensher (1983) has spawned an industry of applications in fields as diverse as transportation, environmental science, health economics and policy, marketing, political science and econometrics. With rare exception, empirical studies have used a single SC design, in which the numbers of attributes, alternatives, choice sets, attribute levels and ranges have been fixed across the entire design. As a consequence the opportunity to investigate the influence of design dimensionality on behavioural response has been denied. Accumulated wisdom has promoted a large number of positions on what design features are specifically challenging for respondents (eg the number of choice sets to evaluate); and although a number of studies have assessed the
influence of subsets of design dimensions (eg varying the range of attribute levels), there exists no single study (that we are aware of) that has systematically varied all of the main dimensions of SC experiments. This paper reports the findings of a study that uses a Design of Designs (DoD) SC experiment in which the ‘attributes’ of the design are the design dimensions themselves including the attributes of each alternative in a choice set. The design dimensions that are varied are the number of choice sets presented, the number of alternatives in each choice set, the number of attributes per alternative, the number of levels of each attribute and the range of attribute levels. This paper details the designs and how they are used in the search for design impacts on willingness to pay (ie attribute valuation), using a sample of respondents in Sydney choosing amongst trip attribute bundles for their commuting trip.

**ITS-WP-03-09**

*Modelling Agent Interdependency in Group Decision Making: Methodological Approaches to Interactive Agent Choice Experiments* (Rose & Hensher)

**Abstract:**
The past thirty years has seen a growing interest in the development of statistical methods to model choices made by individual agents. The dominant method to emerge, discrete choice modelling, has been applied to a wide number of applications in the areas such as transportation, marketing, environmental science, health economics and public utility regulation. Yet despite the wide level of acceptance, those who employ discrete choice models have often failed to acknowledge that such models assume independency between decision makers. The assumption of independence has significant implications in terms of which contexts discrete choice models should appropriately be applied to. This paper begins by establishing the rationale behind interactive agency choice experiments (IACE), an extension to the traditional discrete choice method that is designed to model agent interdependence. The paper then proceeds to discuss how to model both independent and interdependent decision making processes using the IACE methodology in order to capture information on preferences for all agents within a decision making group. The empirical case study used to illustrate the IACE method focuses on distributive work practice choices.

**ITS-WP-03-10**

*Transnational Corporations, Local Adaptation and Inter-Firm Linkages in Developing Countries: Some Contrasts with Local Enterprises in India.* (Ray & Rahman)

**Abstract:**
The issue how transnational corporations (TNC) affiliates adapt locally within emerging markets while sustaining their global competitive advantage has been debated and discussed in international business literature. Even so, the actual response of TNC-affiliates to this contradiction has not been systematically explored. Using a rich dataset of over 300
companies in India, we examine if the ability of TNC-affiliates to adapt and strike linkages in host countries is in any way different to those of their local counterparts. Our results show that TNC-affiliates and local enterprises (LE) behave differently across a majority of dimensions predicted. But whereas this difference is robust for mature industries like chemicals, the same cannot be claimed for high technology global industries like electronics and transport equipment. This suggests that the behavioural differences between the two groups of firms may be strongly influenced by market structural variables impinging upon the industries in which they compete. The results have implications for TNC-affiliates striving to streamline their strategy with pressures in their task environment and also for nation-states as to how to best devise policy mechanisms to assist the same.

**ITS-WP-03-11**  
*Quality Management in Logistics: A Comparison of Practices Between Manufacturing and Retail Companies and Logistics Firm* (Rahman)

**Abstract:**
In February 2002, the Institute of Transport Studies (ITS), The University of Sydney, initiated a study to investigate world class logistics (WCL) practices in Australia. This research is part of the wider WCL study investigating the state of quality practices in logistics in Australian companies. The study examines the extent to which quality management practices are adopted, impediments to implementation of quality improvement processes, quality management tools (simple) employed, methods used to measure customer expectations, and the extent of satisfaction with quality programs. In addition, the study compares the extent of quality practices between manufacturing and retail organizations, and logistics firms. The results show that manufacturing/service organizations are ahead of logistics firms in the application of quality management practices in the logistics functions.

**ITS-WP-03-12**  
*Using values of travel time savings for toll roads: Avoiding some common errors* (Hensher & Goodwin)

**Abstract:**
There are many empirical studies on the estimation of values of travel time savings (VTTS), with varying degrees of rigour and relevance, mostly based on the observation that travellers are prepared to spend money to save time. These values are applied both to forecasting the effects of speed changes on behaviour, and also to estimation of the social benefit of such savings, in order to calculate value for money of spending public funds on transport investments. The sources of empirical information on such values are not always compatible with the models and software within which the results are used. In recent years, an increasingly important application has been to calculate the potential revenue from tolled roads, and networks with user charges, which offer high speeds at a higher price:
here the important issue is not hypothetical willingness to pay, but the actual money which will be handed over. This changes the focus from hypothetical to *bankable* values of travel time savings. It is shown that some common practices risk substantial error in calculation, affecting the sharing of risk between public and private sectors. A particularly important case is where an average value is taken as representative of a skewed distribution of values – in these circumstances there will be a tendency to overestimate the revenue, and underestimate the traffic impact, of a charge, because for a given mean VTTS, there will be a smaller number of individuals who are prepared to pay the toll. To correct this bias, the main tasks are: establishing a relevant set of trip-purpose specific VTTS distributions and selecting a way of handling the distributions in patronage forecasting, growing VTTS through time, treating the VTTS of car passengers, and establishing an appropriate set of rules for converting disaggregated (or heterogeneous) components of travel time values into a single trip value appropriate to the project being evaluated. Other related problems of the use of values of time relate to the assumption that these values grow in proportion to income, and the extent to which they are confounded with other effects.

One troublesome feature is that most, and perhaps all, of the problems discussed tend to produce biases in the same direction, namely to risk overestimating revenue, in the short and long run. This produces a tendency to appraisal bias, which can distort the contractual confidence between partners. Overall, it is likely that current assumptions are underestimating the degree of toll-avoiding behaviour, and overestimating the financial viability of projects.

**Abstract:**

For some little while now, the flavour of the month in transport policy seems to have been to set goals for massive relative increases in public transport ridership, reduction of car use, all resulting in a hoped-for reduction in road congestion. As a result of this policy focus, we have seen various government entities at the metropolitan, state, and national levels set goals for such activities as increased ride sharing, increased use of public transport, implementation of high occupancy vehicle lanes, and, at least in Australia and the U.K., thinking about congestion pricing of some form.

Through political rhetoric, it seems that use of the private car, congestion, and declining shares of the market for public transport are all labelled as negatives that should be set right by some type of policy intervention. Since the first introduction of ideas of demand management in the late 1970s, the idea of
trying to change behaviour of car users has been an increasingly significant focus of transport policy. This paper seeks to check the reality of these policy directions and questions whether these are desirable, let alone achievable end states. It is noted that major changes in transport market share have never been achieved in the past, and as such, it seems unlikely that such policies will be successful in the long term. Even if such policies can be achieved, it is questionable whether the end results will have desirable consequences or not.

**ITS-WP-03-14**

*TravelSmart: A Critical Appraisal* (Stopher & Bullock)

Travel behaviour modification, also called TravelSmart®, Indimark® and Travel Blending®, has been offered as a solution to the dependence of urban populations on the car. Travel behaviour modification is a voluntary programme aimed at changing travel behaviour through providing better information about transport options, rather than through investments in public transport, or through disincentive programmes for the car. The policy has been implemented in Australia in Perth, Adelaide, and Brisbane, and is under active consideration at least in Melbourne and Sydney. The basis of this increasingly widespread potential application of travel behaviour modification is the claim that the program can deliver a shift of travel mode choices through the provision of better information about travel behaviour and travel choices. The claims that are made for this programme are that it can lead to reductions in car use of the order of 10 to 14 percent. If these claims are real, then travel behaviour modification is an enormously valuable programme, with the potential to achieve what has never been done before, i.e. provide a doubling or more of public transport ridership and a significant drop in car use. Such a program would be the answer to the dilemma of how to reduce car use significantly and consequently reduce congestion and vehicular emissions. It is, therefore, appropriate to undertake a critical appraisal to determine if travel behaviour modification is able to deliver these major mode shifts, as its proponents claim.

In this paper, we review a number of published articles, primarily based on the Australian experience with travel behaviour modification, and also review several reports, and materials from the application areas. From these reviews, analyses are performed to see what the actual expected shift is in mode use for the whole population. It is found that there appears to be evidence that the claims of 10 or more percent shift out of car driver are over-stated, and that real shifts may be of the order of six to seven percent. Second, some sampling issues are discussed that indicate that the numbers reported to date may not be as reliable as one would like. Third, the locations of the test applications are examined and discussed,
and it is suggested that there may be some significant bias in these locations towards a larger uptake of the shifts into environmentally-friendly modes of travel. In sum, the paper concludes that travel behaviour modification is capable of making changes in the use of environmentally-friendly modes, but not at the rates that have often been claimed. It is suggested that the target populations may need to be limited and that expectations of the size of the shifts in mode use need to be tempered.

ITS-WP-03-15

Measuring Bus Performance Using GPS Technology (Bullock & Jiang)

Abstract:

Assessing the running times of bus services has traditionally been a difficult and expensive task for the majority of bus operators in Australia, and in other parts of the world. Up until recently, travel times have been collected by time keepers positioned at key points along a given route or service corridor who record bus arrival and departure times. These data then need to be manually collated before any kind of analysis can be undertaken. The time consuming nature of this process restricts the ability of operators to collect large and meaningful samples of data. Furthermore, it is difficult, if not impossible, to identify congestion points from such data, and to evaluate the impact that they might have on overall service levels.

Passive Global Positioning System (GPS) technology offers a low-cost means of collecting large amounts of highly accurate data, which can be used in an on-going performance assessment program. Although raw GPS track points can be viewed on most standard GIS packages, on-screen visual analysis is extremely time consuming for even small amounts of data. Programming skills are therefore required to break continuous GPS data into records that are more meaningful to an operator. A number of important tasks need to be undertaken before analysis can take place. Firstly, periods of in-service or out-of-service running need to be defined, and routes need to be identified. This can be a complicated task because operators often design shifts so that buses may switch between different areas and routes, from run to run, to maximise vehicle utilisation. Once routes are identified, records must then be separated into individual runs and matched with a timetable to compare scheduled and actual running times. This paper provides an overview of a number of software applications developed for processing and analysing large GPS data records collected by a bus operator in Sydney in late 2002/early 2003. The data collection process is described, and some examples are presented of output produced by the main trip processing and timetable query program. It is concluded that passive GPS is a highly attractive
method of collecting data on performance, even for very small operators.

**ITS-WP-03-16**  
*Road Safety Valuation under a Stated Choice Framework* 
(Rizzi & Ortúzar)

**Abstract:**
The value of fatal risk reductions is a vital input for road safety cost-benefit analysis. It has been traditionally estimated by means of contingent valuation in spite of growing criticism surrounding this approach. Furthermore, many believe that risk-money trade-offs are not well understood due to the difficulty in internalizing tiny risks. We have succeeded in applying the Stated Choice (SC) approach to tackle this problem, using as one of the attributes the number of accidents with fatal victims (i.e. a proxy for risk). To assess the robustness of SC, we conducted an external validity test based on results for three different studies. We investigated if preferences were well defined according to economic theory (i.e. as initial risk increases, the marginal willingness-to-pay should be higher). We also addressed the generally ignored issue of whether there should be a unique value of fatal risk reductions.

We found that people can internalize risk consistently from an economic viewpoint, and that although each sample yields different values of risk reductions, there was a relationship between the risk level and the value of risk reductions in each context examined; this evidence could be most helpful within the context of developing countries. Finally, we offer an hypothesis to explain the differences between our values with those obtained in industrialised countries, highlighting the importance of doing local studies rather than transferring imported values.

**ITS-WP-03-17**  
*Valuing Noise Level Reductions in a Residential Location Context* 
(Galilea & Ortúzar)

**Abstract:**
The noise levels measured in metropolitan streets are on many occasions over the norms but the consequences of this as a health hazard are only starting to be questioned; this is obviously worse in the large cities of the second and third worlds. A stated preference (SP) experiment was designed to estimate the willingness-to-pay (WTP) for reducing the noise level in a group based residential location context. Important issues were the proper definition of the context and the variable metric for the environmental attribute. The experiment considered variations of the attributes travel time to work, monthly house rent, position of the dwelling with respect to the sun and subjective noise level inside it; objective levels were also measured after the experiment. With this data we estimated Multinomial Logit and Mixed Logit (ML) models based on a consistent microeconomic framework, with linear and non-linear utility functions and allowing for various stratifications.
of the data. The more flexible ML models also allow to treat the repeated observations problem common to SP data and, as expected, gave a better fit to the data. Based on these models we estimated subjective values of time, that were consistent with previous values obtained in the country, and also sensible values for the WTP for reductions in the subjective noise level at a given location.

**ITS-WP-03-18**

*Using Classical Inference Methods to reveal individual-specific parameter estimates to avoid the potential complexities of WTP derived from population moments.* (Hensher, Greene & Rose)

**Abstract:**

A number of papers have recently contrasted classical inference estimation methods for logit models with Bayesian methods and suggested that the latter are more appealing on grounds of relative simplicity in estimation and in producing individual observation parameter estimates instead of population distributions. It is argued that one particularly appealing feature of the Bayesian approach is the ability to derive individual-specific willingness to pay measures that are claimed to be less problematic than the classical approaches in terms of extreme values and signs. This paper takes a close look at this claim by deriving both population derived WTP measures and individual-specific values based on the classical 'mixed logit' model. We show that the population approach may undervalue the willingness to pay substantially; however individual parameters derived using conditional distributions can be obtained from classical inference methods, offering the same posterior information associated with the Bayesian view. The technique is no more difficult to apply than the Bayesian approach – indeed the individual specific estimates are a by-product of the parameter estimation process. Our results suggest that while extreme values and unexpected signs cannot be ruled out (nor can they in the Bayesian framework), the overall superiority of the Bayesian method is overstated.

**ITS-WP-03-19**

*Encouraging E-bike use: the need for regulatory reform in Australia* (Rose & Cock)

**Abstract:**

This working paper examines the regulation of power assisted bicycles in Australia and overseas. The current regulations are reviewed and reasons for revising the regulations in Australia are outlined. Recommendations are made on key features for revised regulations.
Project Reports

The Multimodal Transport Report for the IV International Conference on Freight Transportation. Conjoint team work between academics and practitioners from Argentina and two ITS PhD students (John Rose and Alejandra Efron). The whole work lasted 14 months (March 2002- May 2003) and has been published in the Blue book. Report is in Spanish, however it has been requested by the UN to be translated into English because of its quality. The conference hosted more than 300 people from transport organisations and governments.


David Hensher contributed to the Submission by the Bus Industry Confederation to the House of Representatives Standing Committee on Environment and Heritage's Inquiry into Sustainable Cities 2025. (October 2004).
9. INDUSTRY PARTICIPATION

Conferences Chaired

(ITS Sydney)

- Peter Stopher has been elected as the co-chair of the 7th International Conference on Travel Survey Methods, which is to be held in Costa Rica. In connection with this, Peter visited Costa Rica at the end of July, together with co-chair Cheryl Stecher and Local Organising Committee Chair Carlos Arce, to inspect possible sites for the conference and to kick off preliminary planning for the conference, (August, 2004).

- David Hensher, Executive and International Chair, International Conference on competition and ownership of land passenger transport in Rio from Sunday to Thursday, (15-18 September, 2003).


(ITS Monash)

- Dandenong Public Transport Forum November 7th 2003 (Currie, Co-chair).


Conference, Seminar and Forum Presentations and Attendance

(ITS Sydney)

- Stopher, PR, Bullock, P & Horst, FN ‘Conducting a GPS Survey with a Time-Use Survey’ paper presented to the 82nd Annual Meeting of the Transportation Research Board, (January).


- Kothuri, S, Stopher, P & Bullock, P ‘Monte Carlo Simulation of Household Travel Survey Data with Bayesian Updating: Dallas and Salt Lake’, paper presented at
the 9\textsuperscript{th} TR Transportation Planning Applications Conference, Baton Rouge, LA, (April).

- David Hensher attended, by invitation, the Third National Conference of the Bus Industry Confederation held in Queenstown, New Zealand, and presented a paper on Day 1 on \textit{Performance Based Contracts - The Way Ahead}, (5-10 April).

- Melody Hsiao attended a seminar ‘The Effect of the Internet on International Trade’, at The University of Sydney. The speaker was Diana Weinhold (London School of Economics), (17 April).

- Alejandro Efron attended the \textit{IV International Conference on Freight Transportation}, Buenos Aires, Argentina where she presented two papers, (May).

- Melody Hsiao attended a seminar ‘Workplace Governance? The diffusion of lean logistics in Australian grocery retailing’ at The University of Sydney. The speaker was Dr Chris Wright, from the University of New South Wales, (2 May).

- Alejandro Efron and Ann Brewer presented a paper at the conference ‘Negotiating in the Cross Cultural Supply Chain: Issues and Implications’. Seminar, School of Management, University of Auckland, New Zealand. Hosted by Associate Professor Jay Sankaran, (16 May).

- Peter Stopher presented a paper, co-authored by Graham Pointer, entitled ‘Monte Carlo Simulation of Household Travel Survey Data with Bayesian Updating’, at the 11\textsuperscript{th} REAAA (Roads Engineering Association of Asia and Australasia) Conference in Cairns, (18-23 May).

- Alejandro Efron was invited by the Argentine Logistics Association to attend XII Workshop of Logistics in Buenos Aires, Argentina, (20 May).


- Peter Stopher presented a seminar on ‘Travel Behaviour Modification: A Critical Appraisal’ at The Transport Studies Unit of University College, London, (11 June).


- Shams Rahman presented two papers, entitled ‘Reverse Logistics: A Theoretical Framework and Research Propositions’ and ‘Quality Practices in Logistics in Australia’ at the 8\textsuperscript{th} International Symposium on Logistics, Sevilla, Spain, (6-8 July).

- Phil Bullock presented a paper entitled ‘GPS Measurement of Travel Times, Driving Cycles and Congestion’ to the ‘SatNav 2003 – the 6\textsuperscript{th} International Conference on Satellite Navigation Technology Including Mobile Positioning and Location Services’, Melbourne, (22-25 July).

• Peter Stopher attended the IATBR Triennial Meeting in Lucerne, Switzerland, where he presented a paper ‘Standards for Household Travel Surveys – Some Proposed Ideas’, written by Stopher, P.R., Wilmot, C, Stecher, C and Alsnih, R (11-14 August)


• David Hensher attended the 8th International Conference on ‘Competition and Ownership of Land Passenger Transport’, Copacabana, Rio de Janeiro, (15-18 September). Executive and International Chair of Series, opening address, chaired three plenary sessions including closing session, chaired Workshop A on Performance Based Contracts over three days of workshop (incl. presenting a paper with Erne Houghton on Performance Based Contracts. Prepared the workshop report. Editor of a volume from the conference to be published by Elsevier, Oxford.

• David Hensher attended the ‘Travel Demand Management Seminar’, Carlton Crest Hotel, Sydney, (3 September).

• David Hensher gave a keynote address at the 2nd Annual National Travel Demand Management Seminar ‘Transport Solutions for the Living City’, Sydney, (3 September).

• Shams Rahman presented a paper "Costs and impacts of maritime security measures on global supply chains" at the CSCAP Maritime Cooperation Working Group/PECC Special Meeting, Manila, (6-7 September).

• David Hensher attended the National Workshop on Urban Transport Modelling and Urban Freight Forecasting and Analysis, Surry Hills, Sydney, (11 September).

• Executive and International Chair of Series, opening address, chaired 3 plenary sessions including closing session, chaired workshop A on performance based contracts over 3 days of workshop including a paper with Erne Houghton on performance based contracts and prepared the workshop report. Will be editor of a volume from conference to be published by Elsevier, Oxford, (15-18 September).

• David Hensher participated in workshops on metropolitan planning and integrated bus based systems, hosted by UPCC and URBS, part of Parana regional government planning agency, Curitiba, (19-20 September).

• David Hensher was invited to the Pontificia Universidad Catolica de Chile to meet staff in Transportation Engineering Department. The visit was hosted by Professor Juan de Dios Ortuzar. Professor Hensher gave a seminar on road user charges and bankable projects, (21-24 September).

• David Hensher presented a seminar on buses at SECTRA in Santiago, ‘Performance Based Contracts’ (the planning agency responsible for the transport system), (25 September).
• Alejandra Efron attended the Australian Registrars Committee Conference ‘Challenging Collections: rising above the Registrars Lot’, National Museum of Australia, Canberra, (October).

• Philip Bullock and Qingjian Jiang presented a paper titled 'Measuring Bus Performance Using GPS Technology’ at the 26th ATRF, Wellington, New Zealand, (1-3 October).

• Peter Stopher and Philip Bullock attended the ATRF Meeting in Wellington, New Zealand, and presented a paper, ‘Travel Behaviour Modification: A Critical Appraisal’, (1-3 October).

• David Hensher participated in the Showcase Program, at The University of Sydney, Eastern Avenue Complex, (5 November).

• David Hensher, the host session, ‘Infrastructure Development for Passenger Transport in Sydney: The Critical Role of Systems Thinking’ the keynote address at the 5th UITP Asia Pacific Assembly & Celebration of the 10th Anniversary of Asia-Pacific Division Oceanic West Room, Crowne Plaza, Coogee Beach, Sydney, (5-7 November).

• Alejandra Efron, John Rose and D Roquero attended the conference and presented a paper, ‘Truck or Train? A Stated Preference Study on Intermodalism in Argentina’, XVII ANPET- Congresso de Ensino e Pesquisa em Transporte. (Conference on transportation teaching and research), Rio de Janeiro, Brazil, (10-14 November).

• Sean Puckett attended the 25th Annual Conference of Australian Institutes of Transport Research (CAITR), Adelaide, and presented a paper, ‘Measuring Influence in Groups of More than Two Agents over Multiple Rounds of Negotiations: An Application to Transport Research’, (3-5 December).

• David Hensher and John Stanley co-wrote a paper, ‘Melbourne’s Public Transport Franchising: lessons for PPPs’, which was presented by John Stanley at the Forum on Public Private Partnerships, which was held at The University of Sydney, Darlington Centre, (8 December).

• Alejandra Efron & John Rose attended the XVII ANPET conference in Rio de Janeiro, (November).

(ITS Monash)


• 6th International Conference on Satellite Navigation Technology, Melbourne, July 2003 (Greaves, Rose, Chan).
• 21st Australian Road Research Board (ARRB) & 11th REAAA Conference, May 2003 (Greaves, Young).
• Signalised intersection analysis using SIDRA software (Rose) (Melbourne, May 2003).
• SMART urban transport conference (Young) (Sydney, May 2003).
• Public Transport Evaluation Workshop (Young) (Sydney, May 2003).
• International ITS world congress, Madrid, Spain, 2003 (Sarvi).

Media and Meetings

(ITS Sydney)

• Stephen McIntyre and Lori St John of RTA Corporate Development met with David Hensher to discuss ITS’s input into the development of the RTA’s Executive Briefing on 26 February, (14 January 2003).
• Jenny Rollo met with David Hensher to discuss web design, (17 & 30 January 2003).
• David Hensher interviewed live on Radio National with Peter Thompson on a hook up with London on the introduction of congestion charging in the City of London, (21 January 2003).
• David Hensher met with Dr R K Saggar, Senior Consultant (Economics), Consulting Engineering Services (India) Pvt. Ltd, (7 February 2003).
• David Hensher interviewed by Joseph Kerr, Transport Reporter, Sydney Morning Herald regarding Sydney traffic, (3 March 2003).
• David Hensher interviewed by William Verity, Sydney Morning Herald, for story regarding the state of the private bus industry in Western Sydney, (7 March 2003).
• Alejandra Efron interviewed by Webpicking (www.webpicking.com) (May 2003).
• David Hensher wrote an opinion piece for the SMH “Side effects of a script to relieve congestion – Charging to enter the CBD could result in more cars on the roads elsewhere in Sydney” (Joseph Kerr, Sydney), (10 September 2003).

• Shams Rahman and David Hensher met with a delegation of six high ranking Russian academics from the St Petersburg Transport University. The delegation included vice-rectors (equivalent to DVC), a Professor of “automatics and telecommunications on railway transport”, and the deputy director general of the St Petersburg Metro System Co, (24 October 2003).

• Shams Rahman met with a large Thai delegation (10) at ITS. The delegation included experts from the office of the Industrial Economics, Electrical and Electronics Institute and EI Square Co. Ltd, (17 November 2003).

(ITS Monash)

• Monash News, August 2003 – article on the newly appointed Professor Graham Currie, chair of Public Transport.

• ABC Radio National – Earthbeat - Alexandra De Blas – interview with Professor Currie 28-05-03 on bus service development projects internationally and in Australia

• ‘Transport Chair for Uni’ - Herald Sun 22/7/03 – article on the newly appointed Professor Currie

• ABC 774 Radio Interview – Virginia Trioli - Drive Time 22/07/03 interview with Professor Currie

• ‘Taking a Bus to Freedom’, Graham Currie in the Herald Sun 9/9/03 - opinion article on Public Transport Planning in Melbourne

• ‘Impose City Car Park Tax’ - The Melbourne Times 3/9/03 including interview with Professor Currie

• ‘Push to pedal boulevards of dreams’- The Age 11/10/03 including interview with Professor Currie

• SBS Radio Interview 23/09/03 – Alchemy – interview with Professor Currie on public transport and young people.

• ‘Transport Plan Justified’ - The Herald Sun 13/11/03 - opinion letter from Professor Currie.

• ‘Fare rises empty seats’ – Herald Sun 2/12/03 – opinion letter from A. Professor Geoff Rose.
Other

(ITS Sydney)

- David Hensher and Shams Rahman prepared a proposal for the Food Management Institute (FMI) which was shortlisted. This lead to a more detailed proposal with a focus of food logistics, (2003).

- Shams Rahman was invited to meet a group of researchers from the Netherlands (REVLOG) who are working in the field of Reverse Logistics, (14 July 2003).

(ITS Monash)

- Professor William Young is an external examiner for Nanyang University of Technology, Singapore (2002-2004).
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.

PricewaterhouseCoopers Australia PhD Scholarship in Transport Studies

The Institute of Transport Studies (ITS) at the University of Sydney has established the PricewaterhouseCoopers (PwC) PhD scholarship in Transport Studies as part of a collaborative initiative between PwC and ITS.

We are now seeking applicants with a strong academic record in areas such as economics, commerce, finance and econometrics to undertake a PhD in Transport Studies.

We will consider a variety of transport related topics with a focus on real world issues such as increasing operational or financial performance, demand forecasting, risk management, institutional reform, improving cost recovery or capital funding costs, optimisation of asset management expenditure, pricing strategies etc. Successful applicants are likely to have a particular interest in the rail, road, ports, airports or logistics sectors.

The scholarship is valued at $A20,000 per annum (tax exempt) for 3 years and may be renewed for a further year. Additionally, the successful applicant will receive:

- Access to PwC resources including data sets, IT equipment and office accommodation.
- Support from PwC Partners and senior staff to facilitate completion of the PhD.
- The opportunity to earn additional income by working up to 20 hours a week (with permission) with the PwC transport economics team on consulting projects.

- Further information can be obtained from:
  - Professor David Hensher, ITS (C39) The University of Sydney NSW 2006 (Phone: 93510071; Fax: 93510081 E-mail: Davidh@its.usyd.edu.au); or
  - Scott Lennon, Director Transport Economics – PwC (Phone: 02 8266 2765 E-mail: scott.lennon@au.pwcglobal.com)

Applications (ie a covering letter outlining reasons for applying, CV, two referees, academic transcript) should be emailed to Professor David Hensher at the above address.

**CLOSING DATE: FEBRUARY 19 2003**
David Hensher was appointed by the NSW Roads and Traffic Authority to facilitate at the RTA Executive Planning Workshop (26 and 27 February 2003) and to prepare and present a paper on Challenges for Land Transport in the next 10 years.

**Positions**

**Conference Organisation**

- Conference Chair, International Steering Committee for Transport Survey Conferences, International Conference on Transport Survey Quality and Innovation (Stopher).
- Executive and International Chair, 8th International Conference of Competition and Ownership of Land Passenger Transport, Rios de Janeiro, 15-18 September (Hensher).
- Member, Scientific Committee, 25th Australasian Transport Research Forum, Canberra, September (Hensher, Stopher).
- Member, Scientific Committee of the International Association of Travel Behaviour Research Conference 2003, Luzerne, Switzerland.
- Dandenong Public Transport Forum – ‘Melbourne 20% 2020 – Fact or Fiction’. ITS Monash organised a Victorian public transport summit in association with the City of Greater Dandenong. The aim of the summit was to review the current transport policy position with regards to the aim of increasing public transport usage to 20% by 2020. Some 100 people attended the summit which was held on November 7th. Professor Currie was co chair of the summit and Professor Peter Jones, a visitor to ITS Monash, made presentation as part of the summit.
- City of Yarra Workshop on Sustainable Transport. This workshop, held in Melbourne in November 2003, was jointly organised by Professor Graham Currie of ITS (Monash) and Professor Peter Newman from Western Australia. It dealt with public transport issues and sustainability of cities, and was attended by nearly 100 people.

**International Positions**

- Member, World Conference on Transport Research Society (Hensher, Stopher)
- Founding member, US Transportation Research Board Committee on Traveller Behaviour and Values (Hensher).
- Member, US Transportation Research Board Committee on Travel Forecasting (Hensher).
- Past President, International Association for Travel Behaviour Research (Hensher).
- 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).
- Fellow, Chartered Institute of Logistics and Transport, United Kingdom (Clements, Young, Hensher).
- Fellow, Institute of Transportation Engineers, U.S.A. (Young).

**Australian Positions**
- Member, Faculty of Economics and Business Executive Committee (Hensher).
- Chair, Graduate Studies Board, Faculty of Economics and Business, The University of Sydney (Hensher).
- Member, School of Business Executive and Research Committee (Hensher).
- Member, The University of Sydney Faculty Restructuring Working Party (Hensher).
- Member, Transport Data Centre, Technical Advisory Committee, NSW (Hensher).
- Member, The University of Sydney Faculty of Economics and Business, Research Committee (Stopher).
- Member, Advisory Committee of the Australian Retailing Committee (Hensher).
- Executive Committee Member, Inland Freight Railway Study (Melbourne to Brisbane) (Hensher).
- Core Member, Faculty Promotions Committee to Professor (Level E), University of Sydney, Central (Hensher).
- Member, Institute of Transportation Engineers (ITE) Australia and New Zealand Section (Young, Rose).
- Member, Advisory Committee, NRTC Committee on Performance Based Standards (Young).
- Member, Institute of Transportation Engineers Committee and Student Chapter (Greaves).
- Member, PhD Dissertation Prize Committee, International Association of Travel Behaviour Research (Rose).
- Fellow, Australian Institute of Traffic Planning and Management (AITPM) (Hensher).
- Fellow, Chartered Institute of Logistics and Transport (Hensher)
- Member, Australian Institute of Traffic Planning and Management (AITPM) (Rose).
- Member, Chartered Institute of Logistics and Transport (de Alwis, Young).
- Member, Chartered Institute of Logistics and Transport (Victorian section), General Committee and Passenger Transport Group Committee (Clements).
- Corresponding Member, National Committee on Transportation Engineering, Institution of Engineers, Australia (Rose).
- Member, Monash University Faculty of Engineering Board, Steering Committee (Young).
• Chair, Monash University Department of Civil Engineering Management Committee (Young).
• Chair, Monash University Faculty of Engineering Graduate and Further Education Committee (Young).
• Deputy Chair, Monash University Faculty of Engineering Education Committee (Young).
• Chair, Monash University Advisory Committee on People with Disabilities (Young).
• Member, Monash University Education Committee (Young).
• Member, Monash University, Car Parking Policy Committee (Rose).
• Member, Monash University Transport Planning Committee (Rose).
• Member, Monash University Faculty of Engineering Academic Exclusions Hearings Board (Greaves).
• Member, Monash University Faculty of Engineering Faculty Board (Greaves).
• Member, Monash University Faculty of Engineering OSP committee (Greaves).
• Member, Monash University Faculty of Engineering Senior Lecturer Promotions Committee (Rose).

Editorial Positions

• David Hensher is Area Editor of Transport Reviews; and is on the editorial boards of Transport Policy; Transportation; Transportation Research; International Journal of Transport Economics; Transportation Research Part E; 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 is also volume and series editor for Elsevier Handbooks in Transport.
• Peter Stopher is on the Editorial Board of Transport Reviews.
• Geoff Rose is a member of the editorial board of Transport Engineering in Australia.
• Bill Young is on the Advisory Board of the journal Transportation.
• John Clements is a member of the International Editorial Advisory Board of the International Journal of Logistics: Research and Applications.

Reviews of Papers

• Staff reviewed papers for a wide range of transport journals and conferences.
• Peter Stopher refereed papers for Transportation, Transportation Research, Transportation Research Board and Transport Reviews.

• Geoff Rose refereed papers for Road and Transport Research, and the ATRF Conference.

Seminar Series and Policy Workshops

ITS Seminar Series (ITS Sydney)

The following invited visitors to ITS gave seminars:

Characterising Driver Behaviour Using Global Positioning System (GPS) Data
by Dr Stephen Greaves, ITS Monash (May 2003).

Driving behaviour is a key determinant of motor vehicle fuel consumption and emissions levels. However, capturing this behaviour has proven particularly troublesome because of the difficulty of collecting the on-road observational data required particularly with respect to route choice, speeds and acceleration rates. The global positioning system (GPS), through its provision of second-by-second positional, speed, and time information offers the capability to collect these data accurately and efficiently. This seminar reports initially on the issues involved in using GPS data for such a purpose, particularly with respect to the level of accuracy we can expect with GPS speeds. Following this, a set of performance measures deemed indicative of driving style are developed from GPS data in an experimental setting. These measures are used to characterise the driving style of a sample of motorists based on data recorded over a two-week period. The application demonstrates that the GPS is capable of providing a wealth of insights on driver-behaviour and has considerable scope for expansion of such a role in the future.

New Approaches to Traffic Monitoring by Floating Car Data
by Dr Astrid Gühnemann, ITS-Sydney, (1 October 2003)

Intelligent traffic management is widely acknowledged as a means to optimise the utilisation of existing infrastructure capacities. A major requirement for intelligent traffic management is the collection of high quality data on traffic conditions in order to generate accurate real-time traffic information. Conventional data sources are based on traffic volume measurements, most often by inductive loops or infrared sensors. A shortcoming of these methods is the problem of reconstructing travel times and routes of vehicles in the road network. In our approach we generate this information by a large Floating-Car-Data (FCD) project in which we use data from taxi drivers in metropolitan areas. Based on this information, various applications such as real-time traffic monitoring, time dynamic routing and fleet management are established. In our paper we further discuss the additional benefit of this data base in building up dynamic emission models as a basis for integrating environmental aspects into intelligent traffic management systems.
Defining and Measuring Transport System Capacity and Flexibility: Some Recent Research at the University of Pennsylvania
by Professor Ed Morlock, ITS-Sydney, (14 October 2003)

The presentation summarizes the results to date from a multi-year research program directed at defining and measuring transportation system capacity and flexibility. Flexibility and capacity are closely related. Interest in both concepts is growing, due to traffic increasing faster than expansion of network infrastructure, changes in supply chains and traffic patterns, and the concern for the vulnerability of the system to both natural disasters and terrorist actions. Models for measuring capacity and flexibility were described, along with results of pilot applications and an assessment of their practicality given data and other contextual considerations. This work has been supported by grants from the US National Science Foundation, the US Dept. of Transportation, the UPS Foundation Fund, Boeing and other private sector firms.

Ed is UPS Foundation Professor of Transportation, University of Pennsylvania. He received the von Humboldt Foundation Senior Scientist Prize, the Distinguished Transportation Researcher Award of the Transportation Research Forum, and Intermodal Educator Award of the Intermodal Expo (now Intermodal Association of North America). His research has been sponsored by NSF, USDOT, various transport companies (including Conrail, “K”-Line) and transport users.

The German Mobility-Panel
by Professor Dirk Zumkeller, ITS-Sydney, (4 November 2003)

Recent years show that the transport development in Germany is increasingly characterised by external factors, e.g. the unification of Germany, the integration of Germany in Western Europe or the upheaval in Eastern Europe. In view of these developments, numerous endogenous interventions i.e. interventions in the transport system (telematics, public transport improvements, high speed rail, 30 km/h speed zones etc) have been conducted or are planned. It can be assumed that not only these endogenous interventions initiate the future intended behavioural changes but also exogenous transport-related aspects, e.g. types of housing, changes in working patterns and increasing leisure times. Changes in behaviour become clearer if one tries to understand them as the result of all these changes of the temporal, monetary and organisational budgets and regimes as well as the result of changes in the personal status. If one follows this logic for the estimation of future developments, then the panel survey method must be introduced alongside the cross-sectional snapshot. After a feasibility-study (Institute of Transport Studies of the University of Karlsruhe) for a mobility panel in 1992/93 such a panel has been established sponsored by the German Ministry of Transport. Because the special problems of panel surveys are well known (non response, panel mortality, panel attrition, panel conditioning) and as a result of the feasibility study, it was decided that the German panel survey would need to be planned slowly and with care.

Performance & Analysis of Carriers’ Technologies & Strategies in Sequential Auction Transportation Markets
By Miguel Andres Figliozzi, ITS-Sydney, (11 November 2003)

Sequential auctions can be used to dynamically match shipments (shippers’ demand) and transportation capacity (carriers’ offer). They create new classes of on-line decision problems that arise in the operation of dynamic stochastic transportation systems. These decision problems include both dynamic vehicle routing and strategic bidding.
Sequential auctions are used to study the impact of information availability on carriers’ behavior and learning as well as the performance of a wide range of dynamic vehicle routing technologies.

Miguel is a PhD candidate at the University of Maryland. His research focuses on dynamic transportation and logistics systems. He received his Masters degree in Transportation Engineering from the University of Texas at Austin.

**A Brief Introduction to Data Mining with CART Decision Trees**  
*By Dan Steinberg, ITS-Sydney, (November 2003)*  
*Salford Systems*  
Data mining is a fast developing research area in which a variety of highly effective modeling and data exploration tools have emerged. Although some major roots of data mining methodology can be traced back to applied econometricians in the 1960's (Morgan and Sondquist) and statisticians in the 1970's and early 1980's (Jerome Friedman, 1977; Breiman, Friedman, Olshen, and Stone, 1984), data mining has largely been the province of computer scientists and a separate breed of researchers blending machine learning, robotics, database, and statistical themes. This introduction is intended to give novices with classical statistical and econometrics backgrounds some insight into one of the most popular and accessible data mining methods.

**Dan Steinberg** (PhD Econometrics Harvard University, 1982) is an acclaimed data mining researcher and consultant specializing in financial services and credit risk scoring. Dr. Steinberg has been active in complex statistical modelling for over 20 years and has accumulated a number of awards for excellence in both theoretical and practical domains. In 1999 he was the first non-Japanese author to be awarded the Nikkei Prize by the Deming Committee for contributions advancing quality control, and in both 2000 and 2003 he led the teams that won prestigious international data mining competitions (KDDCup 2000 and the Duke University NCR/Teradata modelling competition). Dr Steinberg has extensive consulting experience, with clients including American Express, Chase Bank, in the United States and new clients in Singapore and Malaysia.

Dr Steinberg founded Salford Systems as an advanced analytics software and service provider in 1983, and he has been involved in the development of Salford Systems award winning technology since that time. Since 1990, he has worked closely with the world’s leading data mining specialists at the University of California Berkeley (Leo Breiman, Charles Stone), and Stanford University (Jerome Friedman and Richard Olshen), commercializing their groundbreaking technology in CART®, MARS®, TreeNet™, and RandomForests™, and continues to ensure that the company’s products remain best in class. Dr Steinberg has also taught at the University of California, San Diego and is Adjunct Professor at the University of Technology, Sydney.

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

**Unsignalised intersections: Balancing Safety and Capacity Considerations – 8-9 May 2003**  
This two day workshop examined emerging issues in the design and analysis of unsignalised intersections, which form the majority of intersections on the road network. The format of the workshop was a mix of presentations and hands-on
practical exercises, including design principles for balancing capacity and safety, capacity analysis, capacity and performance of roundabouts and a comparison of US and European practices, and concluded with a discussion forum. 29 delegates attended, and the workshop supported the continuing professional development requirements of the Institution of Engineers (Australia). Presenters were Professor Nick Garber (University of Virginia), Associate Professor Geoff Rose (ITS (Monash)) and Professor Rahmi Akcelik (adjunct Professor at ITS (Monash)).

Road Safety Professional Development Program - 24 - 26 June 2003
This course was developed to introduce the concepts of road safety at a local level to those who had not been involved in the area before, and also to provide an update for those who were already involved and wanted to improve their skills and stay abreast of the latest developments. The 19 delegates learned to interpret crash data on the VicRoads database in order to identify the road safety problems in their own area, examined what actually worked in developing road safety countermeasures, and learned how to deliver and evaluate a community road safety program. In the final part of the course, delegates prepared a real life case study from their own area, which was assessed by the program staff with a view to their gaining a Completion Certificate as an acknowledgment of the skills gained over the period of the course.

Speakers on the three day residential course were Associate Professor Geoff Rose, Director of ITS (Monash), Mr Bruce Corben, Senior Research Fellow at the Monash University Accident Research Centre (MUARC), and several specialist transport consultants. The course was facilitated by Dr Jim Jarvis.

Participants enjoying a dinner break in the three day residential professional development program in road safety.
Participants in the Road Safety Professional Development program with the course facilitator (Dr Jim Jarvis – RHS back row).

Planning Public Transport Services - at a Route Level - Short Course 7-8 October 2003

Public Transport service planners and operators face a range of financial, operational and social challenges in developing their services. They must balance desires for patronage growth against the operational and financial realities of their fleet and crew resources and their balance books. They are being asked to design services to attract new passengers whilst also being prudent with the Government funded resources this will require. This two day short course presented methods for professionals in the public transport industry to respond to these issues.

The short course covered bus and tram route operations planning, practical route level demand forecasting approaches and an introduction to social cost benefit analysis approaches to evaluating developments in bus and tram services. The format for the course included presentations and case study exercises. The course was attended by about 50 delegates and was led by Professor Graham Currie, Professor of Public Transport at ITS (Monash), and Professor Avi Ceder. Professor Ceder is a leading international researcher and lecturer in the field of public transport operations based at the Technion Israel Institute of Technology. He is a major author of and lecturer on public transport operations planning, and has managed short courses of this type in Hong Kong, Australasia, Europe and North America (MIT and Berkeley).
Third annual Ogden lecture
The Ogden Transport Lecture was initiated by the Institute of Transport Studies (ITS) to recognise Professor Ken Ogden’s role in founding Monash’s transport program in 1969. The 2003 Ogden Transport Lecture was delivered by Professor Graham Currie, Inaugural Professor of Public Transport, Monash University. His lecture was entitled “Road Space Management – Issues and Challenges” and explored what road space means to a range of stakeholders and how these views often conflict. It also identified how road space management would be put under greater pressure by future development in travel growth and urban development. The Victorian Parliamentary Secretary for Infrastructure was among the 80 key transport personnel who gathered in the Arthur Streeton room at the Hotel Sofitel in Collins Street on 11 September 2003 for the lecture.
**2003 Public Policy Lecture Series**

ITS (Monash) collaborates with the Victorian Department of Infrastructure and the Royal Automobile Club of Victoria in presenting a biennial series of public lectures on transport policy. The 2003 series commenced in September and was entitled *Road Space Management – Meeting Multi-User Objectives in a Limited Resource Environment*. The program was as follows:

- Thursday 11 September 2003: Road Space Management - Issues and Challenges. Professor Graham Currie, Institute of Transport Studies, Monash University (The Ogden lecture – see above)
- Thursday 25 September 2003: Road Space Management - Victorian Transport Policy Context. Mr Carlo Carli, Member for Brunswick, Parliamentary Secretary for Infrastructure and Cllr Meredith Butler, Chairperson of the Metropolitan Transport Forum.
- Thursday 9 October 2003: Road Space Management - VicRoads' Approach and International Perspectives. Mr David Anderson, CEO VicRoads and Professor Avishai Ceder, Technion-Israel Institute of Technology.
- Thursday 23 October 2003: Road Space Management - Parking Perspectives. Mr Robert Morgan, Traffic and Road Safety Consultant and Councillor Greg Barber, Mayor, City of Yarra.
- Thursday 6 November 2003: Road Space Management - The Future. Professor Peter Jones, Director, Transport Studies Group, Westminster University and Associate Professor Geoff Rose, Director, Institute of Transport Studies, Monash University

The 2003 lecture series retained its position as Victoria’s premier forum for the presentation of major challenges for society in the transport arena.
Maintaining Industry and International Contacts

- Peter Stopher has been active in building relationships with RTA (NSW), Department of Transport (SA), Department of Infrastructure (Vic) and Department of Transport (Qld).
- 2002-2004 - Professor William Young was appointed an external examiner for MSci at Nanyang University of Technology, Singapore for a two year term.

Overseas and Interstate Visits

Geoff Rose made a presentation to the Australian Bicycle Council meeting in Canberra in November. The presentation focussed on the key recommendations made from the study which reviewed the regulation of power assisted bicycles in Australia.

Other Activities

ITE Student Industry Night (ITS Monash)

Representatives of local and state government, private industry and Monash University presented an overview of the job potentials for transport graduates. The evening was attended by 80 students and was highly successful.

VicRoads Strategic Planning Retreat – 2003 (ITS Monash)

Geoff Rose attended a strategic planning retreat for the Vic Roads ITS group on February 27 and 28. As part of the retreat, Geoff made a presentation which focussed on opportunities for the group to increase its effectiveness both within VicRoads and externally. Geoff also contributed to a number of the brainstorming and discussion sessions at the retreat.

TravelSmart Officer Training – 2003 (ITS Monash)

Geoff Rose was convenor of a workshop held on 5 March to consider issues related to training TravelSmart officers. The workshop included a presentation from Dr Icacovine, from Methodos in Italy, about the training programs he runs there. Representatives from the Victorian Department of Infrastructure and local government authorities attended the workshop.

National ITS Architecture Seminar and Workshop – 2003 (ITS Monash)

Geoff Rose was one of the speakers at a one-day workshop on Intelligent Transport Systems Architectures, convened by ITS Australia on 12 March. The workshop was held in Canberra and was attended by representatives from public and private sector organisations from throughout Australia. Geoff used the day following the workshop to have meetings on current research initiatives with officers from the Australian Greenhouse Office and the Department of Transport and Regional Services.
National Travel Needs Seminar - 2003 (ITS Monash)
The Chartered Institute of Transport and Logistics held a national seminar on travel needs in rural and regional Australia in Hobart on 6 June. Professor Graham Currie provided the keynote speech of the seminar, covering issues in and solutions to transport needs in rural Australia.

National Travel Demand Management Seminar - 2003 (ITS Monash)
The 2003 National Travel Demand Management seminar was held in Melbourne on Monday 8 September 2003. This annual seminar is funded through the Australian Greenhouse Office. Associate Professor Geoff Rose was invited to speak on the research being conducted at ITS (Monash) on travel behaviour change.

Invited seminar at ITS Sydney – 2003 (ITS Monash)
Stephen Greaves was invited to present a seminar at ITS Sydney describing how GPS has been used to characterise the driving style of a sample of motorists.

EcoDrive Advisory Committee – 2003 (ITS Monash)
Stephen Greaves has been invited to join this committee, which is comprised of representatives from the Victorian EPA, VicRoads, and major vehicle fleet owners and has been established to provide guidance on the implementation and evaluation of EcoDrive, an environmentally-focused driver behavior change program.

Australian Bus Industry Confederation Advisory service – 2003 (ITS Monash)
Professor Currie advised the Bus Industry Confederation on its submission to the Federal House of Representatives enquiry into Sustainable Cities.

Department of Infrastructure Public Transport Safety Research Capability Study Tour – 2003 (ITS Monash)
Dr Edkins and Ms Powning of the Department of Infrastructures Public Transport Safety Division visited the Clayton Campus of Monash University to explore the transport research capabilities of Monash. The tour, organized by Professor Currie of ITS (Monash), included the Department of Civil Engineering Transport Lab, The Institute of Railway Technology and Monash University Accident Research Centre. Following the tour, all parties are exploring ways in which Monash can assist DOI in its management of public transport safety research.

Victorian Local Governance Association – Integrated Transport Seminars – 2003 (ITS Monash)
Professor Currie developed and implemented a series of seminars on Local Government approaches to sustainable integrated transport. This was part of the Melbourne 2030 metropolitan strategy plan. The seminars were presented to Mayors and Chief Executive officers of Melbourne metropolitan municipalities.
Workshop on Public Transport in the Frankston Region – 2003 (ITS Monash)
Professor Currie assisted the Peninsula Campus Management of Monash University in bringing together transport stakeholders in the Peninsula and Frankston region to discuss and develop an approach to public transport issues associated with the Peninsula Campus. As a result of the forum, an ongoing transport stakeholder committee has been formed to track and influence transport issues in the area.

Victorian Bicycle Advisory Council – 2003 (ITS Monash)
Geoff Rose presented a briefing to this body on 28 August on the regulation of power assisted bicycles.

Australian Bicycle Council – 2003 (ITS Monash)
Geoff Rose presented a briefing on 18 November on the regulation of power assisted bicycles.

AIITPM National Conference – 2003 (ITS Monash)
Professor Currie joined an invited Panel of Experts to discuss views on great transport planning disasters as part of the development of the Australian Institute of Transport Planning and Management’s national conference in Sydney.

Maintaining Industry and International Contacts

- Peter Stopher has been active in building relationships with RTA (NSW), Department of Transport (SA), Department of Infrastructure (Vic) and Department of Transport (Qld).

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.
11. MANAGEMENT STRUCTURE

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

The role of the Advisory Committees at each node 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.
ITS Sydney Advisory Committee

Prof. David Hensher
Director, Institute of Transport Studies

Prof. Peter Stopher
Professor of Transport Planning, Institute of Transport Studies

Mr Doug Dean
Managing Director, Collex Waste Management Pty Ltd

Mr Don Telford
Divisional Director, Logistics, Toll Logistics

Mr Darryl Mellish
Executive Director, Bus & Coach Industrial Association (NSW)

Dr Alastair Stone
Director, Stonecorp Pty Ltd

Mr Paul Forward
CEO, Roads & Traffic Authority

Mr John Stott
Executive Officer, State Transit Authority of NSW

ITS Monash Advisory Committee

The advisory committee for the Monash node is being reviewed following retirements by a number of individuals who served on the original committee. The composition of the new committee is still being finalised and the new committee is expected to meet early in 2004.
12. Financial Statements:

ITS: Sydney

The University of Sydney
N. S. W. 2006

Institute of Transport Studies

Consolidated Statement of Financial Performance for the year ending 31 December 2003
(University Account Codes: F0701 00000, 11111 & A5001, F0702 00000 & 11111)

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<th>INCOME</th>
<th>2003</th>
<th>2002</th>
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<tr>
<td>Operating Grant</td>
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<td>Student fees</td>
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<td>Other Fees - Short courses &amp; Conferences</td>
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<tr>
<td>- Testing and Consulting</td>
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<td>104,302</td>
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<tr>
<td>Donations</td>
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<tr>
<td>Allocations - Faculty of Economics &amp; Busi</td>
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<td>- PVC Research</td>
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<td>Sale of Publications</td>
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<td>Interest</td>
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<td>Miscellaneous Income</td>
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<td><strong>Total Income</strong></td>
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<td><strong>1,320,341</strong></td>
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<table>
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<tr>
<th>EXPENDITURE</th>
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<tr>
<td>Salaries and Oncosts</td>
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<td>Contractors - Casual Teaching</td>
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<td>Consultancy Fees</td>
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<td>Catering &amp; Hiring Charges - Conference &amp; Seminars</td>
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<td>Student Costs</td>
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<td>Staff Development &amp; Training</td>
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<td><strong>Total Expenditure</strong></td>
<td><strong>1,445,903</strong></td>
<td><strong>1,122,830</strong></td>
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Surplus/ (Deficit)                           | 435,723 | 197,510 |

Accumulated Funds as at 1 January 2003       | 334,518 | 327,514 |
Prior year adjustment                        | -  | 9,494 |
Transfer to Reserve                          | (200,000) | (200,000) |
Accumulated Funds as at 31 December 2003    | **570,241** | **334,518** |

Note: Research grant accounts are not included in the statement.

Sukumhar Narayanan, CPA
College Manager, Finance & Resources
College of Humanities and Social Sciences
15 March 2004

2003 Annual Report 115
## Statement of Financial Position as at 31 December 2003

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT ASSETS</strong></td>
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<td>Cash Balances (including Funds in Reserve Earning up to p/l interest)</td>
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<td>Petty Cash Advance</td>
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<td>Prepaid Expenses</td>
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<td>Total Current Assets</td>
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<td><strong>CURRENT LIABILITIES</strong></td>
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<td>Prepaid Income</td>
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<td><strong>EQUITY</strong></td>
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<tr>
<td>Accumulated Funds</td>
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<td>Reserves</td>
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<td>Total Equity</td>
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<td>1,334,518</td>
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</table>

Sukuraj Narayanan, CPA
College Manager, Finance & Resources
College of Humanities and Social Sciences
16 March 2004
ITS: Monash

*ITS (Monash) financial statements are prepared separately for direct submission to DEST.*
The Institute of Transport Studies (ITS) Annual Presentation of Awards 2003 was held on Saturday 29 March at the Forum Restaurant, Darlington Centre, The University of Sydney. The function, attended by 110 guests, was an opportunity for the industry, guests and the Institute to acknowledge the significant achievements of the students in the Institute’s graduate and industry programs.

During the evening a number of graduands were presented with their Certificate of Transport Management by Mr Darryl Mellish, Executive Director, Bus & Coach Industrial Association who also announced that the Association’s prize for the best student in the 2002 CTM program was Cathy Dyer, Inverell Bus Service.

In presenting the award Darryl Mellish congratulated the Institute of Transport Studies for its active and important contribution to the bus and coach industry in New South Wales and mentioned the enormous value that the state receives from the quality partnership with ITS. The substantial contribution of ITS, particularly Professor David Hensher, in the preparation of the 2002 submission to IPAART was given a special mention. Having been introduced in 1992, those who graduated in the 2002 CTM course were the 10th group to do so in what Darryl described as a hugely successful joint venture in education and training between the BCA and ITS. The signs are that the program will continue to thrive and operators are encouraged to enrol their new management and operations staff in the July 2004 program (for further details email Loloma Wren on lolomaw@its.usyd.edu.au).

As part of the joint venture with BCA, ITS also offers a Certificate of Coach Management program. Aimed at small tourist bus and coach operators, this course attracted 180 enrolments in the three CCM courses in 2002 whilst the number of enrolments in the three courses offered in 2003 total 156.

In addition to the CTM graduants, the top students in the ITS graduate transport and logistics management programs were recognised with awards given by professional organisations. Since the early 1990s over 20 operators in NSW have graduated with a Masters degree in transport management from The University of Sydney.
Frederic Horst and invited guest Marle Westerholt

David Bean, Karen Bullock and Felicity Pointer
Group of Certificate of Transport Management 2002 Graduands

Drs Shams Rahman (ITS) & Dr Rozina Rahman
Mr Joe Famularo, Professor David Hensher and Mr Steve Tewkesbury, Director Pacific E’Biz Solutions

Mr Alastair and Mrs Yolande Stone with Mr Paul Forward (CEO, RTA NSW)
Mr Fred Gennaoui, President, NSW Branch, Australian Institute of Traffic Planning & Management, presents the AITPM Award for best overall performance by a student in the Graduate Diploma of Transport Management 2002 to Mr David Bean.

Mr Joe Famularo, Vice President (Education), Logistics Association of Australia presents the Logistics Association of Australia 2002 Industry Logistics Prize to Mr Philip Bullock.
Ms Dorothy Koukari, Chairman NSW Section of the Chartered Institute of Logistics & Transport presents the CILT Sir Hudson Fysh Award for Best Second Year Student in the Master of Transport /Master of Logistics Management program 2002 to Mr Frederic Horst.

(L to R) Mr Paul Forward, Chief Executive Officer, NSW Roads and Traffic Authority and Professor David Hensher, Director, ITS, presents the Institute of Transport Studies Award for Academic Excellence for a Full Time Student in the Transport and Logistics Management program 2002 to Arne Walter.
Mr Darryl Mellish, Executive Director, Bus & Coach Industrial Association (NSW) presents a certificate to CTM Graduand Ms Nara Ballhouse.
13. WHAT ITS MEANS TO OUR STAKEHOLDERS...

"Dear Shams
Just a short note to let you know that ITS Logistics graduates are getting good jobs in the industry. Since 1 June I have been in charge of Mitsubishi Heavy Industries’ Air Conditioner business in Australia and New Zealand. I am responsible for their whole Supply Chain from the manufacturing (source) in Japan and Thailand down to the distribution here in Australia and New Zealand. This involves a lot of communication with our different 3PLs. We use AirRoad for warehousing and distribution in Australia for example.
I just wanted to take this opportunity to thank you again for the excellent education I enjoyed in your classes, (and other classes) at ITS. As MHI has only been operating in Australia for 3 years, the company is growing quickly. Therefore, one of my first tasks at the moment is to reorganise our third party warehousing network in Australia. The Logistics Systems class comes in extremely handy here. What a pleasure to actually apply the knowledge acquired in a real life situation.
I hope we stay in touch. Should there be any situation where I can be of assistance for ITS, please do not hesitate to contact me."

Arne Walter, student in 2002, now Logistics Manager (24 July 2003)

"Dear Jo
I was very appreciative in hearing this good news and i would like to say thank you very much for your help. I admire Professor David Hensher, you and all the staff (for your help) in this subject for whole my life. I don’t know what I should say further in this matter. Thank you very very much."

Antiga Tangkongyu.

“Dear Professor Hensher
Congratulations to ITS for another successful year. The presentation of Awards was a fantastic event and I enjoyed the evening. Thanks for your invitation.”

Baojin Wang (Ex Research Analyst and PhD student at ITS)

“Dear Professor Stopher
Thank you for your help all the way during the course, and the best lecturer that I have had. Hope to see you again. Take care!"

Yanyan

“Dear Professor Hensher
As a continuing student doing Master of Logistics Management, finally, I reached the opportunity to attend your lecture on this semester (11th March), which impressed me a lot. Like many of my class mates, I really enjoyed it. However, it is a real pity that we have only 4 day-intensive course, which means the chance we can share your abundant knowledge, broad perspective as well as great humour will be very limited. I wonder if there are any further chances for us.”

Yibin Yang (Denny)

“Dear David
Congratulations! I was told by one of your students in the Master program that you are the brightest and best teacher he has come across. What more would a teacher want than that kind of true compliment! The student does not know I know you and he just commented on his learning experience. Wonderful teacher! Thank you for your good work to our younger generation. God bless!”

Ada Chow (International Development Manager, Faculty of Economics and Business, The University of Sydney).

“Dear Professor Hensher
And again, thanks for such a wonderful class in Transport Economics, to tell you the truth, I didn't expect this much...I really enjoy the way you teach and it changed my perspective about how boring Economics (might be)."

Anawat Peng-udom.
“Dear Elizabeth
Time goes so fast! This semester is going to finish next week. At this moment, I would like to say thank you very much for your excellent lecture as well as specific instruction. Also, I'd like to let you know that I've really enjoyed my study for this unit and I think I've learnt a lot from you. After this semester, I'll only have one unit of study left, which is going to be completed in winter school. So I'm going to graduate in two months. How exciting! Although I've not made the decision about staying in Australia or going back home, I think I will try to get a job closely related to logistics management, which is also relevant to my previous work experience. So, hopefully I will still have opportunities to get your precious instruction after my leaving the Uni! Enjoy everyday in this beautiful autumn! See you next week!
Yibin Yang.

“Hey Jo!!
Tore Holvik here, the Norwegian student at ITS. Have just returned back home to Norway, and have worked for 2 weeks. Really busy at work, that's the way I like it. Want to personally thank you for being a fantastic person Jo, always nice to talk to you!! Thank you once again for contributing to such a memorable year in Sydney, also give my best regards to Shams and David Hensher as well. I had the best year of my life, and all of you played an integral part in this”.
Tore Holvik

“Dear Prof Hensher
I have just had the pleasure of reading your review article, “A bus-based transit way or light rail...Road & Transport Research” 1999 8 (3): 3-21. Have you or anyone else updated this review? If so, please direct me to it as soon as you can. I am in my second term as a city councillor in Vancouver, British Columbia. We are facing the imminent threat of a $1,700 million proposal for a Richmond-Airport-Vancouver transit line made conceivable by low-cost federal and provincial dollars that might be available because of pre-Olympic (winter 2010) preening by politicians. Your 1999 article is very sobering. I would like to circulate that article and others you would recommend to my colleagues on the Greater Vancouver Transportation Authority Board and on the board of the Greater Vancouver Regional District.
I am an epidemiologist who spent decades in tobacco control. I became a politician because of my concerns about global warming. If our species is going to begin to respond appropriately to our overuse of fossil fuels and of the automobile, we who are making transit decisions need "a funding regime that permits the development of maximum accessibility for a given sum" (to quote your page 18). We need to focus on who needs, and will need, to go where and who is ready to leave the car behind. If there's one thing I learned from tobacco control, it is that population measures of actual and intended behaviour should drive strategy.”
Sincerely Frederic Bass, MD, DSc
City Council, City Hall, 1453 West 12th Ave, Vancouver, BC, Canada V5Y 1V4

“Elizabeth
Firstly thank you for your kind praise, I believe if we had tried to write this paper in January we would have presented a very sub standard effort, this work is a reflection of your teaching. Thanks for the inspiration to think outside the square and not just to hand over information to be regurgitated. I found your lectures and your wealth of knowledge very stimulating and informative. I hope that I can call on you for direction in the future when I am standing at the crossroads or stumped at the dead end. You have a tenacity that I think is rare to those of us lucky enough to share an upbringing “in the sticks”. Once again, thank you very much.
Tony.
Hi all of Group 20 members. (Tony please pass on to all members) . I have just finished marking your Strategy and Supply Chain report and was so impressed that I just had to email you all and congratulate you on a wonderful report. It really excelled my expectations. I gave you 90% not just a HD of 85% but even better than that. It really is an excellent study - I haven't marked the risk assignments as yet but just wanted to let you know how good you all are. Well done and congratulations!!!!”
Regards Elizabeth
Elizabeth Barber, ITS Lecturer (email to students

“Dear Shams
How are you doing? This is Sirirat, hopefully, you still can remember me. I got back to Bangkok a few weeks ago and the weather here, as you experienced, is very hot. Well actually, I should say that it is very wet, since it has been raining for 2 days already.
I told you before I left Australia that my plan was to go to China to find a logistics job; however, I had to change the plan since my whole family strongly disagreed with me. They said they needed me here in Thailand and my mom was so upset when I told her what I planned to do. So, I have to stay here for awhile.
Last week, I mailed my application letter and resume to several companies and TNT rang me for an interview. They are looking for senior supervisor. Oh, I have to tell you what they are doing. TNT is looking after IBM (Thailand)’s warehouse, they are kind of 3pl and they want someone to supervise the warehouse. After finishing the interview, they told me that I have knowledge but lack of experience. They said I will be good for this job; however, they have to interview some more people to find the most suitable one. So, I’m kind of scared. I like this job. I know the theory, so I want to practice. I want to really work and use my knowledge and my brain - hopefully they choose me. Well, this is all that happened to me so far. Just want to tell you. How is it going there? Don’t work too hard, take care of yourself. If I’ve never told you, You are the best teacher, I’ve have ever had.”
  Sirirat Srerattanamongkon.

“Here just a few comments on your teaching in ITS:
As a student of ITS completing a master degree of transport management during the year 2003, I was really happy to have chosen the University of Sydney and attended the classes offered by my different lecturers. Moreover, I was particularly impressed by the teaching methods of Professor Peter Stopher, who was always available and was taking care of student comments. He was able to adjust his teaching according to his student needs, in order to make them learn in the best way. Moreover, he was always clear and ready to explain more in details when necessary. On the whole, Professor Stopher appears to be my best lecturer I ever had during my student life. Furthermore, I am also very grateful to him since he allows me to work with him on one of his research topic, which was totally in accordance with what I expected to work on; and I have learned a lot from his experience by working with him, which will be very helpful for my future work as a transport modeller. That is why today I just want to say thank you Professor Peter Stopher for teaching me, and tell him to keep going in the same way!”
  Jean-Baptiste Ferey

“Hi David,
Before leaving two weeks ago, I did not see you to thank you for all that you and your faculty have brought to me this year; so thank you very much for what you are doing for ITS and for allowing students to attend the different classes proposed by your faculty: just keep going! It was for me a fabulous experience that I will never forget. I hope to see you again in the future.”
  Jean-Baptiste Ferey

“Overall, I thought the entire Bus and Coach Accreditation Course was a fantastic experience – a real eye opener for me and a credit to those involved in putting the course together”
  Student about to complete the ITS (Monash)
  TMC in Bus and Coach Operations, February 2003

“I thoroughly enjoyed the course. Very useful and practical. The industry networking was valuable”
  Industry participant, ITS (Monash)
  “Planning Public Transport at a Route Level” Short Course October 2003.

“The unit covered, in the right amount of depth for a master’s degree unit, all the important concepts and issues in transport economics. The subject notebook was well written and organised logically and the recommended reading was excellent. John gave useful feedback on the assignments and provided very helpful study guidance prior to the final examination. I found the subject to be important, challenging and stimulating. I highly recommend this unit to any transport planning practitioner interested in the big issues of the day including road pricing, privatisation of transport services, transport’s contribution to the economy and evaluating transport demand.”
  Postgraduate Student who had just completed the inaugural offering of the new distance education unit CIV5315 Transport Economics, November 2003.