



Planning and Transport Research Centre

# ANNUAL REVIEW 2004



Department for Planning  
and Infrastructure



MAIN ROADS  
Western Australia

*The Planning and Transport Research Centre (PATREC) is a collaboration between the four public universities of Western Australia, Curtin University of Technology, Edith Cowan University, Murdoch University and The University of Western Australia. It also receives financial support from the Government of Western Australia (through the Department for Planning and Infrastructure and Main Roads WA).*

## ***The Planning and Transport Research Centre (PATREC)***

is a unique collaboration between Western Australia's four universities. Established in May 2003, it offers high quality post-graduate education and research programs in transport, logistics and land use / transport interaction.

*PATREC's 'founding sponsors'* are Curtin University of Technology, Edith Cowan University, Murdoch University, The University of Western Australia, the Western Australian Department for Planning and Infrastructure and Main Roads WA.

*Its role is to build professional and academic capability* by offering postgraduate professional education programs and expanding the number and quality of researchers in its specialist fields. PATREC's strong governance structure involving universities, founding industry partners and an independent chairman, ensures independence and a high level of attention to quality outcomes.

*PATREC brings together people with very strong national and international experience in research, industry and government*, so its programs are highly relevant to contemporary public policy, planning and business issues. Able to use resources from all four public universities in the State, it can address a wide range of research issues. Academic resources can be supplemented by other resources from industry.

*PATREC associates with national and international stature* include Stuart Hicks (Chairman of the National Transport Commission and former WA Director General of Transport), Greg Martin (member of the Australia's intergovernmental Standing Committee on Transport, the Australian Logistics Council and WA Director General for Planning and Infrastructure), Professor Fred Affleck (Professor of Transport Studies and Chairman, Midland Redevelopment Authority, former General Manager in the National Rail Corporation Ltd, former CEO of the Australasian Railway Association Inc, and advisor to the Australian Transport Council and the Commonwealth Grants Commission), Professor John Taplin (Professor of Information Management and Marketing, former WA Director General of Transport, Deputy Secretary of Australia's Department of Transport and Director of the Bureau of Transport Economics), Carey Curtis (Senior Lecturer, School of Urban and Regional Planning, Curtin University of Technology and Member of the WA Planning Commission), and Assistant Professor Jeffrey Kenworthy of Murdoch's Institute of Sustainability and Technology Policy.

*PATREC's strongest areas of educational and research focus* are integrated transport and land use planning, transport economics, logistics management and business logistics systems and tools, transport modelling and data management, transport sustainability, and transport safety and risk management. In a number of these areas, PATREC has created long-term industry-supported post-doctoral research programs and PhD-level degree programs. In 2005 PATREC will also begin offering a new professional Masters Degree in Transport Studies. Students can enrol in any of the four universities and will undertake significant research as part of their degree.

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## 2004 - PATREC's first full year

After commencement in May 2003, 2004 was the first full calendar and academic year of activity for the new Planning and Transport Research Centre. It has been a busy and productive 12 months. Key achievements during PATREC's 2004 were:

- Research and consulting supported by grant income of \$261,847 paid to collaborating universities during 2004 (\$239,735 was received in the seven months to 31 December 2003).
- Laying the foundations for a broader and much larger research program commencing in 2005.
- Agreement between collaborating universities to offer the Master of Transport Studies collaborative degree to domestic students from the first semester of 2005.

Key objectives for 2005 will be:

- To obtain agreement from collaborating universities to admit overseas students (those on student visas) to the Master of Transport Studies degree, and to a suitable fee structure for all students.
- To ensure the long-term permanence of PATREC by establishing administrative, academic and other policies and procedures, improving office accommodation and expanding administrative capability.
- To establish a broader and larger research program by obtaining a number of national and state-based competitive research grants, and grants from industry.
- To expand the number of academic staff in the collaborating universities who are affiliated with PATREC's research and teaching programs.
- To increase government, industry and community recognition of and participation in PATREC's programs by participation of the Director in public forums and by staging academic and/or industry-based conferences on topics of public and academic interest.

### Purpose and objectives of PATREC

PATREC was established to provide broad-based professional education in transport, and to combine the resources of its four 'founding sponsor' universities to enhance their capability for quality independent academic research. In its educational role, the main emphasis is on developing and sustaining vital analytical skills and knowledge required for integrated transport and land use planning and freight policy formulation in the public sector.

PATREC offers a Masters degree in Transport Studies (with options to follow pathways to the degree via Certificate and Diploma qualifications), and on-demand short courses in transport topics. Academic staff from the four universities will be supplemented by experienced professionals and other practitioners from the industry where appropriate.

To provide research services to its sponsors and others in the public and private sectors PATREC is building its research capability by engaging academic staff in the four universities, and will add to these expert specialist resources from the private sector. Where appropriate, these practising professionals are invited to participate more directly in PATREC by appointment as 'adjunct' academic staff.

### Establishment of PATREC

During 2002 a small group of interested people in the public, private and academic sectors came together to establish a university-based research and teaching capability in Western Australia. A business plan was developed and industry sponsors were invited to provide financial and 'moral' support. All four public universities agreed to be founding sponsors through a formal Memorandum of Understanding. Western Australia's Department for Planning and Infrastructure and Main Roads WA also agreed to be founding sponsors. PATREC commenced operation on 5 May 2003 with appointment of its inaugural Director.

The six 'founding sponsors' have generously agreed to support the establishment and operation of PATREC with annual subscriptions totalling \$347,500, made up as follows:

Curtin University of Technology	\$60,000
Department for Planning and Infrastructure	\$100,000
Edith Cowan University	\$7,500
Main Roads WA	\$60,000
Murdoch University	\$60,000
The University of Western Australia	\$60,000

## Collaborative knowledge management networking

PATREC is a collaborative 'knowledge management network', and does not directly employ academic staff. It has created a network to promote collaboration and interaction between academic teaching and research people, who share skills, knowledge and intellectual property where appropriate with each other and with industry partners. Where there are shared interests, we also work closely with academic researchers in other universities.

Researchers associated with PATREC are of three kinds: Full-time academic staff who combine teaching and research at our sponsor universities; full-time academic staff who devote all their time to research and are generally attached to a specialised research institute at one of our sponsor universities; and part-time 'adjunct' academic staff who are appointed by one of the universities to undertake research (and often also teaching), whose appointment is based on extensive industry or other experience and expertise.

'Planning and transport' span very diverse academic fields, but the linkages are strong through a broad commonality of policy concerns and a skill base with many shared elements. The field includes study of interaction between transport infrastructure and land use, travel behaviour, sustainability, urban land use and regional development planning. This broad web of knowledge, skills and policy interests provides the basic structure for PATREC's Master's degree course, and for collaboration on many research projects.

The major focus for PATREC's research program is the policy and social sciences and business and public management, not engineering.

Virtually all PATREC post-graduate students and post-graduate and post-doctoral research fellows conduct their studies within faculties or research institutes located within one of our four founding sponsor universities. Often they work in partnership with industry sponsors. All are affiliated with PATREC for funding, capacity building and research collaboration. An important objective of PATREC's Board and management is to foster and support this collaboration and capacity building.

## PATREC governance

The Planning and Transport Research Centre is an unincorporated entity established by a *Memorandum of Understanding* between four universities: Curtin University of Technology, Edith Cowan University, Murdoch University and The University of Western Australia.

### *The PATREC Board*

PATREC is governed by a Board representing its sponsoring universities and the Government of Western Australia which meets three times per year.



*The PATREC Board L to R: Dr Paul McLeod, Prof John Wood, Greg Martin, Prof Andris Stelbovics, Stuart Hicks, Prof Barney Glover, Prof Fred Affleck (Director).*

At 31 December 2004 the members of PATREC's Board were:

Mr Stuart Hicks	Chairman
Prof Barney Glover	Representing Curtin University of Technology
Prof John Wood	Representing Edith Cowan University
Prof Andris Stelbovics	Representing Murdoch University
Dr Paul McLeod	Representing The University of Western Australia
Mr Greg Martin	Representing the Government of Western Australia

*Mr Stuart Hicks*, BEc, FAIM, FCILT, FAICD, MIMC, is Chairman of the National Transport Commission and Chairman of the John Curtin Institute for Public Policy at Curtin University. He is a former Director General of Transport in Western Australia.

*Professor Barney Glover*, BSc (Hons), Dip Ed, MSc, PhD, is Pro Vice-Chancellor Research and Development at Curtin University of Technology.

*Professor John Wood*, BEc (Hons), DPhil (Oxon), is Deputy Vice-Chancellor Students, Advancement and International at Edith Cowan University.

*Professor Andris Stelbovics*, BSc (Hons), PhD, FAIP, is Pro Vice-Chancellor Research and Development at Murdoch University.

*Dr Paul McLeod*, BEc, PhD, is a Lecturer in the School of Economics and Commerce at the University of Western Australia, and former Dean of the Faculty of Economics and Commerce (UWA Business School).

*Mr Greg Martin*, BEng (Hons), BCom, MS, Grad Dip (Urban Systems), FIE (Aust), FAIPM, FCILT, FAIM, MAICD, MPMI, is Director-General of the Western Australian Department for Planning and Infrastructure.

### ***PATREC management***

During 2004, the PATREC 'management team' comprised one full time person, Professor Fred Affleck, a part-time Business Manager, Mr Philip Marsh (employed on behalf of PATREC by Curtin University of Technology), and a clerical assistant, Mr John Davis (a casual employee of Murdoch University).

Income and expenditure in calendar year 2004 are shown in the table below.

<b>Income</b>	
Sponsors' Subscriptions	320,000
Research (Net)	24,873
Interest on accounts	37,825
Other	6,566
<b>TOTAL INCOME</b>	<b>389,264</b>
<b>Expenses</b>	
Salaries & on-costs	203,740
Scholarships	78,234
Memberships and subscriptions	6,909
Travel & accommodation	7,349
Hardware and software	8,942
Other	12,544
<b>TOTAL EXPENSES</b>	<b>317,718</b>
<b>Surplus / deficit (-)</b>	<b>71,547</b>

The Director of the Planning and Transport Research Centre is Professor Fred Affleck, BA (Hons) (Brit Col), PhD (London), FAICD, FCILT. Dr Affleck has worked in a several areas of transport – rail, port access, roads and road transport, urban public transport and aviation. He has held government, management and consulting roles in Australia and Canada since 1969, among these as Advisor to the Commonwealth Grants Commission on railways and public transport (1978-1985) and General Manager Corporate Affairs in the National Rail Corporation Ltd (1992-2000).

During 2004 the Director was appointed to be Chairman of the Midland Redevelopment Authority, a State Government statutory authority in Western Australia.

From the commencement of PATREC on 5 May 2003, accommodation was provided by Murdoch University, and Professor Affleck was engaged on behalf of PATREC, on a contract of employment with Murdoch University. This continued throughout 2004. At the time of writing this report, the PATREC Board had agreed that Professor Affleck and his office would transfer to Curtin University of Technology.

During 2004, PATREC continued to employ Mr John Davis, who is a part-time PhD candidate at Murdoch University, to assist with administration, and this has been indispensable. The Centre's Business Manager, Mr Philip Marsh, was located at Curtin University of Technology.

### ***Academic Advisory Board***

The Memorandum of Understanding between PATREC's four sponsoring universities establishing the collaborative Master of Transport Studies degree requires the establishment of an Academic Advisory Board. The Board comprises the Director of PATREC, and one member appointed by each university. Its function is to advise the Director and the universities on academic matters, including student admissions and awarding of degrees. It meets as required. It also advises the Director on the selection of scholarships awardees and other matters. The members of the Academic Advisory Committee are the PATREC Director and the following representatives of the four collaborating universities:

***Carey Curtis*** BSc (Hons) Geog; MSc Rural Planning; DipTP Urban Planning; Certificate of Teaching in Higher Education (SEDA UK), Senior Lecturer, School of Urban and Regional Planning, Faculty of Built Environment and Design, Curtin University of Technology. Carey Curtis is a member of the Western Australian Planning Commission.

***John Georgiades*** BSc (UWA), BEc (UWA), Diploma in Computing (Postgrad)(UWA), Adjunct Research and Teaching Fellow, School of Management, Faculty of Business and Public Management, Edith Cowan University.

***Assoc Prof Jeffrey Kenworthy*** BSc (Hons) (Murdoch), PhD (Murdoch), Institute of Sustainability and Technology Policy, Murdoch University. Dr Kenworthy is a member of a number of public advisory committees, including the Public Transport Authority's Customer Advisory Council (Urban Rail), the Walking WA Committee of the Department for Planning and Infrastructure and the Western Australian Land Information System Advisory Committee.

***Prof John Taplin*** AM, PhD (Cornell), MAgEc (New England), BA (Economics and Philosophy)(New England), School of Economics and Commerce, The University of Western Australia. John Taplin is Adjunct Professor at Tongji University (Shanghai) and is a former Director General of Transport in WA.

### ***Associated academic staff***

Each member of academic staff who will be teaching units in the Master of Transport Studies, supervising post-graduate research and/or contributing to the Centre's research program is employed by one of the four sponsoring universities. From time to time others from outside the universities are invited to participate in teaching and research activities, in order to widen the resource pool available.

It is a requirement of Murdoch University that this report list Murdoch academic staff "involved in the Centre (including an estimate of time commitment to the Centre)". This is provided as follows:

<b>Murdoch University Staff Member</b>	<b>Nature of involvement with PATREC</b>	<b>%-age commitment to PATREC</b>
Prof Fred Affleck	Director	100%
Prof Andris Stelbovics	Member, PATREC Board	1%
Assoc Prof J Kenworthy	Member, Academic Advisory Board	5%

## **Master of Transport Studies**

A collaborative Masters degree by coursework, the Master of Transport Studies is offered through PATREC for either full-time or part-time study. The degree program of 18 months' duration full time (up to 5 years part-time) is offered jointly by the four participating universities. Students successfully completing the course will be awarded the degree by the university where they formally enrol, but the participation of the other three will be acknowledged on the degree testamur. It is planned that a more

complete academic 'pathway' to the degree, including Certificate and Diploma level qualifications will also be offered commencing in 2006.

The course syllabus requires students receiving the Masters degree to have completed eight units of coursework and a major research assignment:

There are five mandatory 'core' units of required study:

- Cities and Sustainability (Murdoch University)
- Planning for Accessibility (Curtin University)
- Transport Assessment and Evaluation (Edith Cowan University)
- Transport Systems and Policy (University of Western Australia)
- Research methods (to be taken at the university where the student enrolls)

Students will be required to complete three 'elective' units chosen from the following:

- Integrated Plan Making (Curtin University)
- Advanced Transport Modelling (University of Western Australia)
- Transport Safety (University of Western Australia)
- Risk Management (Murdoch University)
- Logistics and Supply Chain Management (University of Western Australia)
- Global Distribution and Transportation (Curtin University)
- Principles of Enterprise Logistics Management (Curtin University)
- Contemporary Issues in Aviation Management (Murdoch University)
- Business Strategy (Edith Cowan University)
- Managing Change (Edith Cowan University)

In addition, one semester (or its equivalent for part-time students) will be devoted to a significant supervised research project.

As at 31 December 2004, no students had graduated from the Master of Transport Studies degree. Commencement of units in the degree was set to commence in Semester 1:2005.

## Doctoral scholarships

Five full or part scholarships for doctoral study were provided by PATREC during 2004:

**Farookh Hussain**, Information Systems Department, Curtin Business School, supervisor Prof Elizabeth Chang. Farookh's research is developing a methodology for establishing trust in logistics peer-to-peer environments

**Vidyasagar Potdar**, Information Systems Department, Curtin Business School, supervisor Prof Elizabeth Chang. Vidy's research concerns 'information hiding' (for protecting intellectual property) and is focussed on developing digital watermarking for use in the logistics industry.

**Luke Stange**, Institute of Sustainability and Technology Policy, Murdoch University, supervisor Assoc Prof Jeffrey Kenworthy. Luke is studying the processes, policies and outcomes of main-street revitalisation in Western Australia within a sustainability framework

**Sharif Siddique**, Information Management and Marketing Department, Faculty of Economics & Commerce, University of WA, supervisor Prof John Taplin. The title of Sharif's PhD thesis is "Joint development of a genetic algorithm and a stated preference survey to optimise policies for ameliorating the environmental impacts of transport".

**Hui (Clare) Yu**, Information Management and Marketing Dept, Faculty of Economics and Commerce, The University of Western Australia, supervisor Prof John Taplin. Clare's research will examine the integration of economic, environmental and social factors into formulating and prioritising transport policies, with a focus on determining appropriate relative weights for these factors.

As at 31 December 2004, there had been no PhD completions by students associated with PATREC.

## Post-doctoral and post-graduate research fellowships

During 2004, three research fellows were engaged directly by PATREC or through arrangements made by PATREC:

**Dr Terri Pikora**, PhD (UWA), MPH (UWA), BHSc (Health Promotion)(ECU), AssDipAppSc (Library Media)(ECU). Dr Pikora is *Marine Safety Research Fellow* employed by the University of Western Australia in the Injury Research Centre (School of Population Health). This fellowship is fully

funded by the Department for Planning and Infrastructure to support its marine safety programs. The substantial program of research led by Dr Pikora produced several publications during 2004.<sup>1</sup>

**John L. Renne**, MURP (Colorado), BEnvDes (Colorado).<sup>2</sup> John Renne is a PATREC *Visiting Fellow* conducting research part-funded by the Department for Planning and Infrastructure to develop a framework for measuring the performance of transit-oriented developments in Western Australia. While holding this visiting fellowship, he is working in the Institute for Sustainability and Technology Policy, Murdoch University. He is a doctoral candidate at Rutgers University (New Jersey, USA) conducting research to measure the benefits, analyze trends and evaluate policies relating to transit-oriented development, and has been appointed Assistant Professor and Associate Director of the Maritime and Intermodal Transportation Center in the University of New Orleans, commencing in 2005. PATREC will maintain its relationship with John Renne in UNO, where there is an active research program in freight logistics.

**Emeritus Professor Trevor Heaver**. During November and December 2004 Prof Heaver was appointed *Visiting Senior Fellow* in The University of Western Australia, on behalf of PATREC, and while in Perth was keynote speaker at PATREC's conference on Maritime Logistics. Trevor Heaver is Emeritus Professor in the Centre for Transportation Studies, Sauder School of Business, in the University of British Columbia.<sup>3</sup>

## Affiliations with other research organisations

PATREC facilitates research by initiating research projects with government and industry partners. Research projects are then conducted by academic staff in the four sponsoring universities, often in collaboration across institutions. A key role for PATREC therefore is to identify appropriate centres of research excellence that can become affiliated with its research program. The following bodies have been affiliated with PATREC in this way during 2004:

Curtin Business School  
School of Urban and Regional Planning, Curtin University of Technology  
School of Management, Edith Cowan University  
School of International, Cultural and Community Studies, Edith Cowan University  
Institute for Sustainability and Technology Policy, Murdoch University.  
Murdoch Business School  
School of Psychology, Murdoch University  
Centre for Labour Market Research, The University of Western Australia  
Injury Research Centre, The University of Western Australia  
School of Economics and Commerce, The University of Western Australia  
Cooperative Research Centre in Railway Technology, Central Queensland University  
Cooperative Research Centre for Sustainable forest Landscapes

## Research and publications

During 2004 PATREC continued its embryonic research program, receiving grants from several organisations in the public and private sectors in Western Australia and interstate.

The total amount of grant funding facilitated by PATREC for research projects initiated or completed in 2004 and paid to PATREC's sponsoring universities was \$261,847. Appendix A at the rear of this report contains information on the background and purpose of research projects initiated, continuing or completed in 2004. Appendix B shows grants received during 2004 and their distribution among sponsoring universities.

### *Proposed future research grants*

During 2004 PATREC submitted applications for \$2.05 million in research grants (see Appendix C).

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1 <http://www.irc.uwa.edu.au/etc/pageview.cfm/PageID/37/SectionID/3>.

2 <http://www.acsp.org/students/cv-jobbank.f04/John%20Renne%20ACSP%20CV%20Sept%202023.doc>;  
<http://www.uno.edu/cupa/pages/faculty.html>

3 <http://www.sauder.ubc.ca/faculty/directory/faculty/heaver.cfm>.



## **Publications**

Publications, reports and presentations conferences and short courses by academic staff and students affiliated with PATREC appearing in print or presented in 2004 are listed below. It should be noted that not all of these were published as outcomes of research facilitated by PATREC, and some relate to research conducted by academic staff of the four collaborating universities who are affiliated with PATREC, but outside PATREC's research program shown in Appendices A and B.

- Affleck** F (2004) "Contribution of Rail Transport to Gross National Product, Australia", presented to *MAPS 2004* conference of the International Union of Railways, Tunis, March 2004.
- Affleck** F (2004) "Developing a Security Risk Management System for your Freight Terminal", presented to conference on *Transport Terminals Risk Management*, Sydney June 2004.
- Affleck** F (2004) *Perth's South West Metropolitan Railway: Balancing benefits and costs*. Report for the Public Transport Authority of Western Australia by the Planning and Transport Research Centre, Perth, February 2004.
- Affleck** F (2004) "Rail and Intermodal Freight Performance", in *Short course on Measuring Multi-Modal Transport System Performance*, presented by The University of Queensland and Queensland University of Technology, Brisbane, 9-11 June 2004.
- Affleck** F (2004) *Report on Future Directions*, to the Australian Logistics Council, Perth, 2004.
- Curtis** C and **Holling** C (2004) "Travel Demand Management of Australian Universities: Recognition, Contemplation or Action?" *27th Australasian Transport Research Forum*, Adelaide, 29 September - 1 October 2004 (15 pp).
- Curtis** C and **Holling** C (2004) "Just How (Travel) Smart are Australian Universities when it comes to implementing sustainable travel?" in *World Transport Policy and Practice*, vol. 10.
- Curtis** C and **James** B (2004) "An Institutional Model for Land Use Transport Integration", in *Urban Policy and Research*, vol. 22 (3)
- Curtis** C and **Punter** JV (2004) "Design-Led Sustainable Development: The Liveable Neighbourhoods Experiment in Perth, Western Australia", in *Town Planning Review* Vol 75 (1) pp 116-150.
- Kenworthy** J and **Townsend** C (2004) A Comparative Perspective on Urban Transport and Emerging Environmental Problems in Middle Income Cities, in *Scaling the Urban Environmental Challenge*. UNU/IAS-IIED project. In press Earthscan Publications, London.
- Cameron** I, **Lyons** TJ and **Kenworthy** JR (2004) "Trends in vehicle kilometres of travel in world cities, 1960-1990: Underlying drivers and policy responses", *Transport Policy* 11, 287-298.
- Kenworthy** J (2004) "Developing a National Focus on Urban Public Transport to Reduce Car Dependence and Improve the Sustainability of Australian Cities", A Report for the national PTMG (reviewed by large national committee with representatives from each State).
- Kenworthy** J (2004) *The Eco-City: Ten Key Dimensions for Sustainable City Development*. Presented to *International Forum on Vision and Strategy of an Ecocity: Seogwipo City*, South Korea.
- Olaru** D and **Smith** B (2004) "Applying Neural Networks to the Interaction between Land-Use and Transportation Networks: A Comparison with Multivariate Technique", *Studies in Urban and Regional Planning* 10, 3-18.
- Pikora** TJ (2004) "Definitions for Marine Safety Research", Report to the Marine Safety Directorate, Department for Planning and Infrastructure, Western Australia.
- Pikora** TJ and **Cercarelli** LR (2004) "Quantifying Boating-Related Fatalities, Injuries and Incidents in Western Australia", Report to the Marine Safety Directorate, Department for Planning and Infrastructure, Western Australia.
- Potdar** V and **Chang** E (2004) "Covering Encrypted Information using Images", accepted in *European and Mediterranean Conference on Information Systems (EMICS2004)*, Tunis.
- Potdar** V and **Chang** E (2004) "Visibly Invisible: Ciphertext as a Steganographic Carrier", accepted in *4th International Networking Conference*, Plymouth, U.K.
- Potdar** V and **Chang** E (2004) "Hiding Text Cryptography using Image Cryptography", accepted in the *4th International Networking Conference*, Plymouth, U.K.
- Potdar** V and **Chang** E (2004) "Grey Level Modification Steganography for Secret Communication" accepted in *2nd IEEE International Conference on Industrial Informatics (INDIN2004)*, Berlin.

- Potdar V** and Chang E (2004) “Open Source and Closed Source Software Development Methodologies”, *26th International Conference on Software Engineering (ICSE2004)*, 4th Workshop on Open Source Software Engineering, Proceedings, IEEE Computer Society.
- Potdar V** and Chang E (2004) “Open Source vs. Closed Source”, *6th International Conference on Enterprise Information Systems*, Portugal.
- Qiu M** and **Taplin J** (2004) “A spreadsheet-based genetic algorithm for vehicle routing problem with time windows”, *Conference of Australian Institutes of Transport Research*, Melbourne.
- Renne J** and Wells J (2004) “Emerging European-Style Planning in the USA: Transit-Oriented Development”, *World Transport Policy & Practice*, Vol. 10, No. 2.
- Siddique S** (2004) “Traffic Control Policies to Reduce Pollution in Perth CBD”, *Conference of Australian Institutes of Transport Research*, Melbourne.
- Taplin J** (2004) “Demand for hybrid cars: Elasticity approaches and a fuzzy logic contribution”, *Conference of Australian Institutes of Transport Research*, Melbourne.
- Tull M** and Vieira S (2004) “Potential impacts of management measures on artisanal fishers in Indonesian shark and ray fisheries: a case study of Cilacap”, *7th Asian Fisheries Forum*, Penang.
- Tull M** (2004) “Fremantle Harbour: from commercial port to recreational centre?” *IVth International Maritime History Association conference*, Corfu.

## Conferences and Seminars

During 2004 PATREC convened a conference on port-based container logistics:

*Industry Conference on Maritime Logistics: Land-side issues & opportunities*, Fremantle, Western Australia, 25th-26th November 2004.<sup>4</sup>

Seminars convened directly by PATREC or in conjunction with affiliated research organisations, during 2004, are listed below (URLs for links to relevant presentations and papers are shown in footnotes):

**Vidyasagar Potdar** (Doctoral candidate, School of Information Sciences, Curtin Business School), “XML Steganography for Extended Logistics Enterprises”<sup>5</sup>, 16 December 2004.

**Farookh Khadeer** (Doctoral candidate, School of Information Sciences, Curtin Business School). “Trustworthiness and CCCI Metrics for Rating Logistics Service Providers”<sup>6</sup>, 12 October 2004.

**Sharif Siddique** (Doctoral candidate, School of Economics and Commerce, The University of Western Australia), “Traffic Control Policies to Reduce Pollution in Perth CBD”<sup>7</sup>, 10 September 2004.

**John L Renne** (PATREC Visiting Research Fellow, Institute for Sustainability and Technology Policy, Murdoch University), “Sustainable Transport, Smart Growth and Smart Government”<sup>8</sup>, 2 September 2004.

**Luke Li Stange** (Doctoral candidate, Institute of Sustainability and Technology Policy, Murdoch University), “Reclaiming Main Street: the process of revitalising main streets in Perth's sub-centres”. 26 August 2004.

**Arthur Donovan** (Professor of Maritime History (retired), U.S. Merchant Marine Academy), “From Seatrain to SeaLand: Regulatory Politics and the Origins of Containerization,”<sup>9</sup> 6 August 2004.

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4 Conference proceedings are available at: <http://www.patrec.murdoch.edu.au/maritimeLogistics.html>.

5 <http://www.patrec.murdoch.edu.au/Presentation.pps>

6 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%2011%2012%20Oct%20%20Farookh%20Khadeer/khadeerseminar.pdf>

7 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%2010%2010Sep04%20Siddique/Traffic%20control%20policies%20to%20control%20pollution%20in%20Perth%20CBD.pdf>; and <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%2010%2010Sep04%20Siddique/Traffic%20control%20policies%20to%20reduce%20pollution%20in%20Perth.pdf>.

8 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%2009%2002Sep04%20Renne/DPI%20Lecture%20Sept%2017%202004.pdf>.

9 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%2007%2006Aug04%20Donovan/Donovan%20Seminar%20SeaTrain%20to%20Sealand%2022-06-04.pdf>

- Terri Pikora* (Marine Safety Research Fellow, Injury Research Centre, School of Population Health, The University of Western Australia), “Issues for Australian Small Boat and Recreational Marine Safety Research”,<sup>10</sup> 23 June 2004
- Clare Yu* (Doctoral candidate, School of Economics and Commerce, The University of Western Australia), “Integration of Economic, Environment and Social Factors into Formulating and Prioritising Transport Policies”,<sup>11</sup> 18 June 2004
- Carey Curtis* (Senior Lecturer, School of Urban and Regional Planning, Curtin University of Technology) and *Carlindi Holling* (Research Assistant, School of Urban and Regional Planning, Curtin University of Technology), “The Universities TravelSmart Resource Kit,”<sup>12</sup> 17 May 2004.
- Fred Affleck* (Director PATREC), *Peter Lawrence* (Adjunct Assoc Prof, School of Management, Edith Cowan University), and *John Georgiades* (Adjunct Research and Teaching Fellow, School of Management, Edith Cowan University), “Highlights from Report on Research on Perth-Mandurah Railway Project”.<sup>13</sup> 18 March 2004.

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10 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%206%2023Jun04%20Pikora/PatrecIRC%20Seminar%20June04.pdf>

11 <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%205%2006Aug04%20Clare%20Yu/Integration%20of%20economic%20environmental%20and%20social%20factors%20Jun04.pdf>

12 <http://www.travelsmart.gov.au/universities/>; <http://www.travelsmart.gov.au/universities/pubs/universities.pdf>; <http://www.patrec.murdoch.edu.au/PATREC%20Seminar%20Papers/Seminar%204%2017May04%20UniTravelSmart/Uni%20TDMCurtisPaper.pdf>

13 <http://www.patrec.murdoch.edu.au/Final%20Report%20SWMR%20Feb%202004.pdf>; Perth-Mandurah Railway seminar 18-03-04.pdf; and <http://www.patrec.murdoch.edu.au/Final%20Report%20SWMR%20Feb%202004.pdf>.

## APPENDIX A: Research and research consultancies 2004

Principal research projects for which funding was facilitated by PATREC that were commenced or completed during 2004:

### **Perth-Mandurah railway triple bottom line benefit-cost evaluation**

*Investigators: Fred Affleck, John Georgiades, Peter Lawrence*

During 2003, the Government of Western Australia proposed to construct a new urban passenger railway from the Perth central area to the southern suburb of Mandurah (75 km), to serve the rapidly growing southern metropolitan corridor and connect with the remainder of the electrified Perth urban rail system. The aim of this research was to complete a benefit-cost evaluation of the proposed project including economic, environmental and social/land use (triple-bottom line) impacts. The outcome of the research was to demonstrate a rate of return of more than 16 percent. This project was supported by funding from the Public Transport Authority of Western Australia.

### **Rail freight infrastructure and operational support financing options**

*Investigators: Fred Affleck, John Ryan, John Taplin*

The formerly government-owned freight railway system in Western Australia was 'privatised' by leasing its infrastructure and selling its above-rail assets to the Australian Railroad Group Pty Ltd in 2000. A consequence of this action was that the State government has lost its ability directly to invest in or influence investment in rail infrastructure where there are non-financial 'external' benefits it wishes to obtain. This research surveyed government policies in selected Australian and overseas jurisdictions for subsidising investment in railway infrastructure, assessed their relative advantages, and proposed policies and processes for assessment and administration of a possible program in this area. This project was supported by funding from the Department for Planning and Infrastructure Western Australia.

### **Overview assessment of the value of DPI programs**

*Investigators: Fred Affleck, Carlindi Holling, Paul McLeod*

This research described and where feasible quantified the benefit of selected programs of the Department for Planning and Infrastructure Western Australia, which provided funding for this project.

### **Future directions for the Australian Logistics Council**

*Investigator: Fred Affleck*

The Australian Logistics Council is a collaboration of public and private sector entities established in response to the 2002 Freight Transport Logistics Industry Action Agenda. Its aim is to facilitate development and implementation of recommendations of the Action Agenda, relating to infrastructure investment and regulation, industry training, e-logistics, sustainability and industry leadership. The purpose of this research was to review the structures and processes of the Council, and recommend new approaches to which will provide a greater assurance of achieving objectives. As a result of this research the structures and procedures of the Council have been significantly changed, including engagement of a full-time executive officer. This project was supported by funding from the Australian Logistics Council.

### **National Transport Commission Rail safety forum**

*Investigator: Fred Affleck*

The multi-modal National Transport Commission, formed in 2004 as successor to the National Road Transport Commission, has a mandate from the ministerial Australian Transport Council to develop a program to reform regulation of railway safety. This requires examination of regulatory objectives, processes, legislation, and the scope of jurisdiction of the eight jurisdictions in Australia currently performing this function. The aim of this project was to assist the Commission in undertaking research for an issues paper to be presented to a national conference on this topic. This project was supported by funding from the National Transport Commission.

### **Short history of the WA Government Railways**

*Investigators: Fred Affleck and Linley Batterham*

The former WA Government Railways Commission (formed in 1902) ceased to exist when the Public Transport Authority of WA was established in 2003. A substantial but partial history (1950-1976) of Westrail (the trading name used by the WAGR before privatisation of its freight business in 2000) was published by Fred Affleck in 1978. The WA Section of the Australian Railway Historical Society continues to publish short articles on the history of the WAGR and the Midland Railway Company of WA Ltd (absorbed by the WAGR in 1964). The purpose of this research, still in progress, is to provide a complete short history of the WAGR from its origins in 1879 to 2003, to be published by the Public

Transport Authority. This project is supported by funding from the Public Transport Authority of Western Australia.

### **Transit Oriented Development: measures of performance, Stage 1**

*Investigator: John L Renne*

Transit oriented development (TOD) is a form of urban design comprising medium and high-density mixed land uses within precincts of walkable radius (generally up to 400 metres) centred on public transport nodes (usually railway stations). The aim of TOD is to provide greater variety of urban housing styles within a vibrant urban environment, and to encourage greater use of public transport within major activity corridors, an important part of the Action Plan for the Network City strategy for the future of Perth. The Government of Western Australia's Transit Oriented Development Coordinating Committee (TODCC) has an emerging program to develop TOD at a number of sites on the new Perth-Mandurah railway, and at selected stations the existing urban rail system. This will involve coordinated actions by State agencies, local governments and the private sector, within an innovative framework of land use regulation and public transport infrastructure development. The TODCC has developed a close relationship with PATREC, which is undertaking research to develop measures of performance for TOD, and arranging a major international conference (the first of its kind) on TOD, to be held in Fremantle on 5-8 July 2005. This project is supported by funding from the Department for Planning and Infrastructure Western Australia.

### **Marine Safety**

*Chief Investigator: Terri Pikora*

This suite of research projects is being undertaken by the Injury Research Centre (School of Population Health, The University of Western Australia). These projects continue to be supported by funding for a Marine Safety Research Fellow from the Marine Safety Directorate at the Department for Planning and Infrastructure Western Australia (see [www.irc.uwa.edu.au/etc/pageview.cfm/PageID/37/SectionID/3](http://www.irc.uwa.edu.au/etc/pageview.cfm/PageID/37/SectionID/3) for further details).

### **Defining Marine-Related Injuries and Incidents**

*Investigator: Terri Pikora*

This project developed definitions related to marine and boating-related fatalities, injuries and incidents. It provides a list of key definitions to guide future research in the area of marine safety research, both at a state and national level.

### **Analysis of Existing Marine-Related Injury and Incident Data Sets**

*Investigators: Terri Pikora, Rina Cercarelli*

This project reported on the range of marine and boating-related fatality, injury and incident data that are currently available in Western Australia. These data sets include those from the health sector (such as the death data and the hospitalisation data), the marine incident data as reported to the Department for Planning and Infrastructure, and marine search and rescue data as reported to the WA Water Police. This research was one of the first either nationally or internationally, to obtain and report on these data sets together. It provides current information on marine and boating-related injuries and incidents.

### **Survey of Recreational Boaters Attending Boating Safety Courses in Western Australia**

*Investigators: Terri Pikora, Rina Cercarelli*

The aims of this project are: To determine the characteristics of recreational boaters who participate in boater education training courses prior to the introduction of compulsory competency training; and To evaluate boater education safety courses. This research will assist in the identification of promotional strategies that may be used to assist in encouraging boaters to undertake boater training. This research will involve training courses that are conducted in both metropolitan and rural areas of Western Australia.

## APPENDIX B: Research income earned in 2004

Project Title	Grantor (2)	Grant (1)	Curtin	ECU	Murdoch	UWA
<b>Projects completed in 2004</b>						
Perth-Mandurah railway triple bottom line evaluation:	WA PTA	\$50,000	\$5,965	\$18,420	\$25,610	
Rail freight infrastructure and operational support financing options	WA DPI	\$30,000			\$27,240	\$2,760
Overview assessment of the value of DPI programs	WA DPI	\$20,000	\$8,050		\$10,570	\$1,380
Transport data management workshop	WA DPI	\$4,000			\$2,000	\$2,000
Future directions for the Australian Logistics Council (ALC)	ALC	\$20,000			\$20,000	
Rail safety issues research	NTC	\$8,000			\$8,000	
<b>Sub-total</b>		<b>\$132,000</b>	<b>\$14,015</b>	<b>\$18,420</b>	<b>\$93,420</b>	<b>\$6,140</b>
<b>Projects on-going but not completed in 2004</b>						
Marine Safety (3-year fellowship; total \$308,696)	WA DPI	\$99,847			\$7,091	\$92,756
Transit Oriented Development: measures of performance, Stage 1	WA DPI	\$30,000			\$30,000	
<b>Sub-total</b>		<b>\$129,847</b>			<b>\$52,091</b>	<b>\$92,756</b>
<b>TOTALS</b>		<b>\$261,847</b>	<b>\$14,015</b>	<b>\$18,420</b>	<b>\$145,511</b>	<b>\$98,896</b>

1 Excludes GST.

2 WA PTA: Public Transport Authority; WA DPI: Department for Planning and Infrastructure; ALC: Australian Logistics Council; NTC: National Transport Commission.

## APPENDIX C: Research grants applied for in 2004

Project Description	Lead University	Principal grantor	Notes	Gross Value (\$)
Review of school bus costing principles	Curtin	Public Transport Authority WA		46,000
Competition policy impacts on rail investment	Curtin	Australian Railroad Group Pty Ltd		217,921
Human resources planning for the rail industry	UWA	Rail CRC	1	116,385
Indigenous community remote roads management	Murdoch	Main Roads WA		47,000
Planning and transport modelling program	UWA	WA Planning Commission	2	310,000
Impacts of TOD in a new railway corridor	UWA	Australian Research Council	3	1,223,318
Youthwork to reduce crime in rail station precincts	ECU	Office of Crime Prevention WA	4	84,478
				2,045,102

1 Grants committed by five industry partners; commitment by Rail CRC pending.

2 Complementary grants being sought from the WA Planning Commission and seven other State, local and professional bodies.

3 Grants committed from ten private and public sector bodies; award of grant by ARC expected in mid-2005.

4 Complementary grants being sought from the OCP, Public Transport Authority and four local governments.