

REPORT OF ACTIVITIES: 2011-2014

1. Introduction

This report summarizes the activities of the Institute of Transport Studies (ITS) at the University of Hong Kong from 1 May 2011 to 30 April 2014.

1.1 Background

Transport is important to the people and economy of Hong Kong. Many millions of dollars could have been saved if we spend less time on transport. There are over 6.9 million people in Hong Kong. If everyone in Hong Kong could save 10 minutes a day on transport through the use of intelligent transport system and better land use-transport planning and the saving is just 1 dollar per minute, we could have saved 69 million dollars a day and over 25,000 million dollars a year. This amount would have been even much higher if we include the time that could be saved in transporting goods. Transport also closely affects the air quality and sustainability of our environment. We could save much energy and have a cleaner environment if we use more public transport and mass transit system and cleaner fuel. Although compared with other cities in Asia, we already have a very good transport system in Hong Kong. There is still much research to be carried out to improve the efficiency, equity, safety, comfort, services, and environmental friendliness of our transport system for a better Hong Kong. For example, we will have a much better living environment and make Hong Kong more competitive if we can reduce the air pollution from our transport system.

The transport sector has played a role of fundamental importance in the development of Hong Kong and will continue to do so in the future. Hong Kong's status as a global city derives in large part from the role that it plays as a key hub in the international air transport and maritime shipping systems. The future development of Hong Kong will be closely linked to its continuing role as the leading port in southern China.

1.2 Mission & Objectives

The Institute of Transport Studies is a university centre. It seeks to identify research programmes as mission oriented activities and not by traditional academic disciplines alone. In doing so it would undertake to:

- establish a database of academic staff and research students in the University engaged in transport related research, their areas of special expertise, the titles of the projects in which they are engaged,
- promote through its activities collaboration within the University on multi- and inter-disciplinary transport research and the application of research grants,
- promote inter-institutional, regional and international cooperation in transport studies,
- publicize locally and internationally the image of the University as an institution committed to transport studies in Hong Kong, the region and worldwide, and
- organize seminars, conferences, and workshops on transport studies.

1.3 Membership

The following are Institute Fellows of ITS during the review period.

Professor C.C. Chan is Honorary Professor at the Department of Electrical and Electronic Engineering, and President of the Electric Vehicle Association of Asia Pacific. He is Academician of the Chinese Academy of Engineering, China, and Fellow of the Royal Academy of Engineering, U.K. His fields of interests include electric and hybrid electric vehicles and intelligent transportation system.

Dr. Felix W.H. Chan is Associate Professor and Associate Dean of Faculty of Law. His fields of interests include shipping and logistics law, international commercial law, and use of statistical data in legal proceedings.

Dr. Timothy Doe-kwong Hau is Associate Professor at the School of Economics and Finance. His fields of interests include transportation economics, project evaluation, applied discrete choice econometrics, and public economics.

Dr. P.C. Lai is Associate Professor at the Department of Geography. Her fields of interests include geographic information systems design and applications, transport geography and network analysis, digital mapping and cartographic visualization, and urban and network geodata modeling.

Dr. Wong-hing Lam is Assistant Professor at the Department of Electrical and Electronic Engineering. His fields of interests include mobile radio communications, and intelligent transport services/systems.

Professor Dennis Y.C. Leung is Professor at the Department of Mechanical Engineering. His fields of interests include vehicular emission control, air pollution control, dispersion modeling, and energy conversion. Professor Leung was elected Fellow of the Hong Kong Institute of Acoustics in 2003, and appointed Honorary Professor of the Guangzhou Institute of Energy Conversion of the Chinese Academic of Science from 2005-2007.

Dr. Weifeng Li is Assistant Professor at the Department of Urban Planning and Design. His fields of interests include environmental sustainability, land use and transportation planning interactions and the environmental energy effects, GIS and spatial analysis in urban planning.

Professor Becky Pui-ying Loo is Professor at the Department of Geography, and Deputy Director of ITS. Her fields of interests include transportation (infrastructure, road safety, sustainable urban transport and travel behaviour), spatial analysis (surveys, applied GIS and data modeling), and economic geography (globalization and information society). Dr. Loo was awarded the Outstanding Young Research Award from the University of Hong Kong in 2005.

Dr. Grantham K.H. Pang is Associate Professor at the Department of Electrical and Electronic Engineering. His fields of interests include intelligent transportation systems, LEDs for signaling and communication intelligent control, and fuzzy system and neural net. Dr. Pang was invited to be a contributor to the Encyclopedia of Life Support Systems published by United Nations Educational, Scientific and Cultural Organization (UNESCO). The contributed article is entitled "Blackboard Architecture for Intelligent Control".

Dr. W.Y. Szeto is Assistant Professor at the Department of Civil Engineering. His fields of interests include transport network design, transport network reliability, public transport, dynamic traffic assignment, landuse-transport-environment, transport logistics, game theoretical transport problems, and meta-heuristics for transport and logistics.

Dr. James Jixian Wang is Associate Professor and Head at the Department of Geography. His fields of interests include port-city relationship, transportation geography, travel behavior modeling, time budget/use studies, urban public transport in Hong Kong and China, and container port systems.

Professor S.C. Wong is Professor at the Department of Civil Engineering, and Director of ITS. His fields of interests include traffic signals, network modeling, continuum modeling, urban taxi services, and road safety. Professor Wong received the NSFC Young Researcher Award from the National Natural Science Foundation of China in 2007, and Outstanding Researcher Award from the University of Hong Kong in 2009.

Dr. Nelson Yung is Associate Professor at the Department of Electrical and Electronic Engineering, and Assistant Director of ITS. His fields of interests include intelligent transportation systems, digital image processing, and fast algorithms.

Professor Anthony G.O. Yeh is Chair Professor and Head of Department of Urban Planning and Design, and Founding Director of ITS. He is Academician of the Chinese Academy of Science. His fields of interests include land use planning, GIS, transport information system, and road signs.

Dr. Feng Zhang is Assistant Professor at the Department of Urban Planning and Design. His fields of interests include environmental sustainability, land use and transportation planning interactions and the environmental energy effects, GIS and spatial analysis in urban planning.

A new category of Honorary Fellowship was also set up during this review period. It is required that an Honorary Fellow must have made substantial contributions to ITS and have achieved a high level of standing in his/her work related to transportation in the academia, government, private industry or other organizations. An Honorary Fellow needs to be nominated by a Fellow of ITS and be approved at a Management Committee Meeting. Currently, the following Honorary Fellow was elected,

Professor C.K. Mak, University Fellow and Honorary Professor. His fields of interests are transport policy and planning, planning and administration of railway and transport infrastructure development, sustainable development of the built environment.

2. Management

Since 30 April 2011, 4 Management Committee Meetings were held on 7 May 2012, 29 January 2013, 7 January 2014, and 23 May 2014. During the review period, two Memorandum of Understanding Agreements with the Center for Transport Research of The University of Seoul, and the Transportation Research Center of Wuhan University to strengthen mutual understanding, to foster friendly cooperation, and to promote academic collaboration and exchange In the pursuit of excellence in scholarship and to stimulate research in transport studies, were signed.

3. Fund Raising

During the review period, a total donation of about HK\$300,000 to support the organization of the Distinguished Transport Lecture Series 2012, 2013 and 2014, was received from the following companies:

- Airport Authority Hong Kong
- Arup
- C4 Development Limited
- CKM Asia Limited
- DHL Global Forwarding (Hong Kong) Limited
- Gammon Construction Limited
- Hong Kong Air Cargo Terminals Limited
- Hong Kong Tramways, Limited
- Hongkong International Terminals
- Kwoon Chung Bus Holdings Limited
- Mannings (Asia) Consultants Limited
- MTR Corporation
- Octopus Cards Limited
- The "Star" Ferry Company, Limited
- The Hong Kong School of Motoring Limited
- The Kowloon Motor Bus Company (1933) Limited
- Worldwide Flight Services

In addition, a matching fund of HK\$59,000 was received from the 6th Phase Matching Grants for eligible donations.

4. Activities

4.1 Distinguished Transport Lecture Series

The Distinguished Transport Lecture Series was launched in 2009. Each year, we invite internationally renowned and distinguished experts and scholars to visit Hong Kong to deliver public

lectures in the transport field, with the aims of promoting excellence in transport research and development in Hong Kong and stimulating discussion and the exchange of views between international experts and scholars and local researchers and professionals. During the review period, the following Distinguished Transport Lectures were organized:

- Distinguished Transport Lecture on “Making the Links between Transport and Wellbeing” by Professor Nick Tyler, CBE, Chadwick Professor of Civil Engineering and Pro-Provost, East and South Asia, University College London, UK, 19 March 2014
- Distinguished Transport Lecture on “The Implications of Travel-based Multitasking for Modeling and Policy: A Conceptual Exploration and Some Survey Findings” by Professor Patricia Mokhtarian, Georgia Institute of Technology, USA, 12 December 2013
- Distinguished Transport Lecture on “Port Performance Evaluation: A Port Service Chain Perspective” by Professor Wayne K. Talley, Frederick W. Beazley Chair Professor of Economics, Old Dominion University, USA, 17 October 2013
- Distinguished Transport Lecture on “Using Advanced Discrete Choice Modelling Techniques to Value Transport Related Externalities” by Professor Juan de Dios Ortuzar, Pontificia Universidad Catolica de Chile, Chile, 28 March 2013
- Distinguished Transport Lecture Series on “Analytic Methods in Accident Research: The Current Methodological Frontier and Future Directions” by Professor Fred Mannering, Charles Pankow Professor of Civil Engineering, Purdue University, USA, 16 October 2012
- Distinguished Transport Lecture on “On the Wider Economic Impacts of Transport Projects” by Professor Roger Vickerman, Professor of European Economics, The University of Kent, Belgium, 25 April 2012
- Distinguished Transport Lecture on “Urban Travel Forecasting: a 50 Year Retrospective” by Professor David Boyce, Adjunct Professor, Department of Civil and Environmental Engineering, Northwestern University, USA, 15 December 2011
- Distinguished Transport Lecture on “Mode Transition in a Public Transit Route and Related Issues of Capacity, Speed and Waiting Time” by Professor S.C. (Chan) Wirasinghe, Professor, Department of Civil Engineering, University of Calgary, Canada, 7 November 2011

4.2 Collaborative Opportunities

The Institute has offered the opportunities for members to explore potential collaborative research projects. During the review period, two collaborative projects among members were completed:

“Research study on the installation of seat belts on student services vehicles in Hong Kong”, funded by Transport Department of the Government of the HKSAR with an amount of HK\$1,040,420 (Institute members involved: Professor S.C. Wong (PI), Dr. Felix W.H. Chan, Professor Becky P.Y. Loo)

“Bicycle Injury Prevention Program in Tuen Mun District”, funded by Health Care and Promotion Fund of the Government of the HKSAR with an amount of HK\$232,600 (Institute members involved: Professor S.C. Wong (PI), Professor Becky P.Y. Loo)

4.3 Seminars and Others

The following activities were organized during the review period:

- Seminar on “Theoretical Advances of Transportation Safety Planning” by Professor Helai Huang, Professor and Director of Urban Transport Research Center, Assistant Dean, School of Traffic and Transportation Engineering, Central South University, China, 21 March 2014

- Seminar on “Measurement and Modeling of Micro- and Meso-Scale Real-World Onroad Vehicle Activity and Emissions” by Professor H. Christopher Frey, Visiting Professor, Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology, and Distinguished University Professor, North Carolina State University, USA, 10 February 2014
- Seminar on “Transport Futures: Thinking the Unthinkable” by Professor David Banister, University of Oxford, UK, 17 January 2014
- Seminar on “A Flow Congestion Model of Morning Rush-Hour Traffic Dynamics” by Professor Richard Arnott, University of California, Riverside, USA, 17 December 2013
- Seminar on “A Structured Flexible Transit System for Low Demand Areas” by Dr. Yanfeng Ouyang, University of Illinois at Urbana-Champaign, USA, 17 December 2013
- The 18th International Conference of Hong Kong Society for Transportation Studies, Jointly organized by Hong Kong Society for Transportation Studies, Department of Geography, The University of Hong Kong and Institute of Transport Studies, The University of Hong Kong, from 14-16 December 2013
- Seminar on “Congestion Pricing and Managed Lanes: A San Diego Perspective” by Professor Janusz Supernak, San Diego State University, USA, 17 September 2013
- Seminar on Reliable Server Assignment in Networks using Nature Inspired Metaheuristics” by Professor Abdullah Konak, Professor of Information Sciences and Technology, Pennsylvania State University-Berks, USA, 9 August 2013
- Seminar on “A Convergent Gradient Projection Method for Dynamic Traffic Assignment Consistent with Traffic Control and User Behaviour” by Professor R. Jayakrishnan, Department of Civil and Environmental Engineering, University of California, Irvine, USA, 13 June 2013
- Seminar on “Simulation-Based Dynamic Traffic Assignment: From the Labs to the Trenches, and Beyond” by Professor Yi-Chang Chiu, Department of Civil Engineering and Engineering Mechanics, The University of Arizona, USA, 13 June 2013
- CIHT(HK Branch) Half-Day Seminar on Cross Boundary Transport System, Jointly organized by The Chartered Institution of Highways and Transportation (Hong Kong Branch) and Institute of Transport Studies, The University of Hong Kong, 1 June 2013
- Seminar on “Are Adaptive Signal Control Systems a Solution to Urban Congestion?” by Professor Zong Tian, Associate Professor and Director; Center for Advanced Transportation Education and Research, University of Nevada Reno, USA, 24 May 2013
- Seminar on “New Methodological Developments in Land-use and Activity-travel Demand Modeling with Application to the Los Angeles Area” by Professor Chandra Bhat, Director, Center for Transportation Research University Distinguished Professor and Adnan Abou-Ayyash Centennial Professor Department of Civil, Environmental, and Architectural Engineering, The University of Texas at Austin, USA, 24 May 2013
- Seminar on “Agent-based Modelling of Travel Behaviour and Flow: The MATSim Implementation in Singapore and Elsewhere” by Professor K.W. Axhausen, Professor of Transport Planning, ETH - Swiss Federal Institute of Technology, Zurich, 20 March 2013
- Seminar on “An Assessment Index with Desirable Properties of Environmental Impacts of Transport Emissions” by Professor Ying-En Ge, School of Transportation & Logistics, Dalian University of Technology, Liaoning 116024, China, 15 March 2013

- Completion of a Project entitled “Bicycle Injury Prevention in Tuen Mun District”, Funded by Health Care and Promotion Fund, Food and Health Bureau, HKSAR Government, from 1 September 2011 to 28 February 2013
- Seminar on “Network Equilibrium Problems with Plug-in Electric Vehicles” by Dr Chi Xie, University of Texas at Austin, USA, University of Texas at Austin, USA, 2 January 2013
- Workshop on “Transportography: Advances in Spatiotemporal Transport Analysis”, 12 December 2012
- Seminar on “Monitoring, Modelling and Management of Air Quality in UK” by Dr. Anil Namdeo, Newcastle University, UK, 4 December 2012
- Seminar on “Towards a Next Generation of Road Safety Interventions” by Professor Fred Wegman, Professor of Traffic Safety, Delft University of Technology, Managing Director, SWOV Institute of Road Safety Research, Netherlands, 19 November 2012
- Seminar on “Differentiated Congestion Pricing of Urban Transportation Networks with Vehicle-Tracking Technologies” by Professor Yafeng Yin, Department of Civil and Coastal Engineering, University of Florida, USA, 5 November 2012
- Seminar on “Active Traffic Management for Dynamic Congested Urban Networks with Macro Models” by Professor Nikolas Geroliminis, Ecole Polytechnique Federale de Lausanne, Switzerland, 5 November 2012
- Seminar on “The Uncertainties of Driver Responses to Vehicle Safety Features” by Professor Fred Mannering, Charles Pankow Professor of Civil Engineering, Purdue University, USA, 18 October 2012
- Seminar on “Conservation Forms of Continuum Traffic Flow Models” by Professor Peng Zhang, Shanghai Institute of Applied Mathematics and Mechanics, Shanghai University, China, 21 June 2012
- Seminar on “Valuing Prevention of a Death on the Roads - A European Perspective” by Professor Richard Allsop, Emeritus Professor of Transport Studies, University College London, UK, 18 May 2012
- Public Lecture on “A Decade of Road Casualty Reduction in Europe - 100,000 Premature Deaths Prevented 2001-2010” by Professor Richard Allsop, Emeritus Professor of Transport Studies, University College London, UK, 15 May 2012
- Centenary Transport Lecture on “The Trilogy of Distance, Speed and Time” by Professor David Banister, Professor of Transport Studies, The University of Oxford, UK, 22 March 2012
- The 16th International Conference of Hong Kong Society for Transportation Studies from 17-20 December 2011
- Behavior in Networks (BiNs) Workshop on “Sustainability in Transport Networks” on 16 December 2011
- Meeting with Visitors from Singapore Ministry of Education on 5 December 2011
- Seminar on “Beijing Transport After the Olympics (In Putonghua)” by Professor Duan Li-ren, Professor of Chang'An University, China, 10 November 2011
- Project on “Preliminary Study of Road Signs for Elevated Pedestrian Walkways in Central District” by Professor Anthony Yeh from 1 August 2011 to 15 September 2011

- Seminar on “Sustainable Transport Development: An Achievable Aim?” by Dr. Wafaa Saleh, Transport Research Institute, Edinburgh Napier University, UK, 14 June 2011
- Seminar on “Visualization and Assessment of Arterial Progression Quality Using High Resolution Signal Event Data and Probe Vehicle Travel Time Data” by Professor Darcy Bullock, School of Civil Engineering, Purdue University, USA, 3 June 2011
- Seminar on “Crowd Dynamic Modelling” by Dr. Majid Sarvi, Department of Civil Engineering, Monash University, Australia, 3 May, 2011
- Seminar on “Planning the Most Comprehensive Transport Hub in the World - Hongqiao, Shanghai (In Putonghua)” by Professor Ximing Lu, Tongji University, China, 28 April, 2011
- Workshop on “Canadian Highway Pavement Management” by Professor Ralph Haas and Dr. Ningyuan Li, 16 April 2011

5. Future Plans

5.1 Distinguished Transport Lecture Series

The Distinguished Transport Lecture Series will be continued. The next Distinguished Transport Lecture by Professor Gilbert Laporte, Canada Research Chair in Distribution Management, HEC Montreal, Canada, will be held on 22 August 2014.

5.2 Collaborative Opportunities

Some Institute members will join effort to prepare a proposal on “Big Data in Transport” for the Croucher ASI Workshop.

5.3 Other Activities

- Seminar on “30 Years of Achievement in Transportation: The Past, Present and Future”, jointly organized with The Chartered Institution of Highways and Transportation (Hong Kong Branch), 31 May 2014
- Seminar on “Airfield and Airport Terminal Designs” by Mr. William F. Yim, Guest Speaker, Aviation Consultant, Senior Planner, Santa Barbara County Association of Governments, California (Ret.), 3 June 2014
- Seminar on “Game Theoretic Genetic Algorithms to Solve Network Server Assignment Problem Considering Attacks” by Professor Sadan Kulturel-Konak, Visiting Professor, The Chinese University of Hong Kong, and Professor, Pennsylvania State University, Berks, PA, USA, 10 July 2014

Prepared by:

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