



Terence Whiteman | Transport Economist (International)

Terry Whiteman has over 38 years' experience in Applied Economic Analysis, Infrastructure Investment Evaluation, Discounted Cash Flow Analysis and Economic and Financial Impact Assessment. Terry has a proven ability to effectively link the technical engineering, costing and transport forecasting outputs to the economic and financial and reporting requirements for significant transport infrastructure projects. He has proven experience in conducting economic analysis incorporating Cost Benefit Analysis (CBA) modelling and other benefit realisation assessment techniques. Major relevant transport studies on which Terry has worked in Australia include the Airport Link and Legacy Way Toll Roads, Northern Busway and Eastern Busway BRTs, Cross River Rail (all in Brisbane), and the extension of the Gold Coast Light Rail from the Gold Coast Hospital connecting to the Gold Coast heavy railway line. Since late 2012, Terry has successfully completed the economic assessment of transport investment packages in Surabaya, Denpasar (Indonesia) and Peshawar (Pakistan) for CDIA, KfW and ADB respectively.

Qualifications/Membership

Bachelor of Economics,
University of Sydney
Postgrad Cash Flow Valuation
Competency
Queensland University of
Technology

Specialisation

Feasibility & Regional
Economic Impact
Studies/Infrastructure
Evaluation/Public Transit
Performance
Assessment/Economic
Impact Analysis/Financial
Analysis/Cost Benefit
Analysis

Years in industry

38

Experience

Terry has key experience in infrastructure planning, economics and business case analysis developed over 38 years in both the private and public sectors. He has practised in Australian and international projects across the full range of industry sectors including transport, urban transformation and commercial development, utilising strategy development and discounted cash flow analysis. He is also experienced in the management of impact assessments.

Memberships & Clearances

International Consulting
Economists Association (ICEA)

Australian Government
Baseline Security Clearance

Contact Details:

- **Address:** 11 Worsley Street, The Gap, Queensland, Australia 4061
- **Email:** whiteman.terry@gmail.com
- **Mobile:** +61 412522083

Expertise

The following designated skills have been developed to a high level:

- Strategic transport policy and planning
- Investment evaluation for public transit systems and toll roads using Cost Benefit Analysis (CBA) and Multi Criteria Analysis (MCA)
- Assessments of government financial capacity to fund major projects
- Sourcing of investment funds
- Transport infrastructure asset management
- Transport infrastructure planning including corridor assessments
- Economic and financial impact analysis
- Regulatory policy integration
- Stakeholder engagement across government agencies, industry and the community
- Knowledge and capacity building with counterparts
- Report preparation



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Representative Project Experience

Freelance Economic Consultancies

- **Pre-Feasibility Study In Public Transport, Denpasar, Indonesia, (March to June 2015)**

International Transport Economist for this PFS funded by KfW and managed by Bappenas. The FS developed an achievable 5-year Public Transport Strategy, a pilot school bus program (as part of the broader public transport network) and a system of feeder bus services to help reduce urban congestion levels in Denpasar. The PFS provided a staged program to improve human capacity at the government level to develop and manage of contracts. My role was to prepare the economic/financial modelling as part of the business case for USD4 million in priority investment projects including an assessment of sources of financing.

- **Southern Sydney Access Investigation, Sydney, Australia (July to December 2014)**

Project Director for the major Southern Sydney Access Investigation (SSAI) that provided advice, assessment and recommendations on transport network improvement options up to AUD3 billion including possible new toll motorway and bus infrastructure initiatives in a study area covering a population of approximately 400,000 people in southern Sydney, Australia. The investigation developed an integrated transport scheme that delivered on both road transport and public transport outcomes in the broader study area. The Pre-feasibility Assessment was the first major deliverable for the SSAI and the resulting report informed the updated state of New South Wales State Infrastructure Strategy (SIS) released in November 2014.

- **TA-6293 REG: Managing the Cities in Asia - Urban Transport Pre-feasibility Study in Peshawar, Pakistan (January to May 2014)**

Public transport has emerged as a key priority for Peshawar city and provincial leadership in the Khyber Pakhtunkhwa (KPK) Planning and Development Department. The study was a preliminary assessment of MRT options and mode to best suit passenger demands needs in Peshawar covering institutional and regulatory framework to support proposed MRT system; identification of a priority corridors; development of capital cash flows, transit operational model fare box revenues; financial and economic assessment of 7 candidate MRT options to determine viability; and the recommendation of the preferred project option to take forward to the full feasibility stage. As the International Transport Economist for the ADB/Cities Development Initiatives for Asia (CDIA) Pre-feasibility Study (PFS), I undertook economic analysis and financial analysis of the 7 nominated BRT and



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LRT project investment options ranging from USD110 million to USD1.9 billion that included a suite of fare revenue models that were developed and modelled.

- **Pre-feasibility Study in Urban Transport, Surabaya, Indonesia (2012)**

International Urban Economist/Financial Expert for this CDIA study responsible for conducting the cost benefit analysis and providing specialist economic advice on the provision of complementary infrastructure investment package costing over USD110 million to support the proposed light rail and monorail mass rapid transit (MRT) systems in Surabaya. These investments targeted angkot and city bus services covering the City of Surabaya and were segmented into the following three areas:

- System wide investments for trunk and feeder bus services to improve transport efficiency and journey time reliability for the community and operators
- Corridor infrastructure improvements for bus trunk routes that were prioritised by government agencies
- System wide investment for angkot services to improve the functioning of this public transport mode particularly for the transport disadvantaged and socio-economic marginalised areas of Surabaya.

- **Pre-feasibility Study in Urban Transport, Yogyakarta, Indonesia (2012)**

International Urban Economist/Financial Expert for this CDIA study and prepared the updated status report for the three-staged implementation of the proposed Bus Rapid Transit (BRT) system in Yogyakarta. This status report covered the revised investment projects and identified 9 BRT corridors and related infrastructure that seeks to optimise the potential of the BRT system for both passengers and operators and to generate a modal shift from the private motor vehicle to bus transport.

- **Automated Train Control (ATC) and Radio Replacement Project (RRP) Business Cases (WA)**

Economic specialist for the Western Australia Public Transport Authority (WA PTA) business cases that modelled the economic costs and benefits of the proposed ATC (estimated capital cost \$500 million) and RRP (\$100 million) using WA government business case guidelines.



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2000 to end 2013

Aurecon, Australia

Associate/Lead Economist

Representative projects are in Australia unless otherwise identified and are as follows:

Transport Infrastructure Investment Evaluation

- **Connecting Heavy Rail and Light Rapid Transit, Gold Coast City Council, Gold Coast (QLD)**

Economics Leader and Transport Economics specialist who prepared the Cost Benefit Analysis (CBA) Technical Report to assess the travel time savings benefits of three options to connect light rail at Gold Coast University Hospital to the Gold Coast Railway. The options ranged in capital costs from AUD280million to AUD987 million. The CBA was a partial rapid CBA that monetised the travel time and vehicle distance travelled savings for both the public transport users and vehicle transportation modes pertaining to the three project options and delivered BCR and NPV investment results.

- **Northern Link (Legacy Way) EIA (QLD)**

Economics leader for the identification and assessment of the economic impacts for this 6km road tunnel project linking western Brisbane to the Inner City Bypass in northern Brisbane. Project has an estimated capital cost of USD1.6 billion. The range of economic tasks that were undertaken included the development of the Northern Link Cost Benefit Analysis model, managing of the Computable General Equilibrium (CGE) modelling of the construction and operational expenditures.

- **Airport Link Detailed Feasibility Study (QLD)**

Economics leader for the identification and assessment of the economic impacts for this major tunnel project in northern Brisbane with an estimated capital cost of USD 4 billion. The range of economic tasks that were undertaken included the development of Airport Link Cost Benefit Analysis model, managing of the Computable General Equilibrium (CGE) modelling of the construction and operational expenditure and the identification and assessment of other qualitative economic impacts in the Airport Link corridor.

- **Gateway Motorway Upgrade Project and Gateway Motorway South Project (QLD)**

Conducted the economic impact analysis and cost benefit analysis for these projects with a capital value of USD1.4 billion and \$1.1 billion respectively that provided a major duplicated cross Brisbane River Bridge and the upgrade to the southern sections of the Gateway Motorway to support the future growth of Brisbane Airport, Port of Brisbane and Australia Trade Coast



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- **North West Rail Link Patronage Demand Factors Review (Sydney, NSW)**

Prepared a specialist economics report for this proposed major urban rail projects in Sydney that reviewed and identified the future trends affecting demand patronage. Key external demand factors that were considered included fuel prices inclusive of peak oil issues; climate change and related taxes and transfers (e.g. carbon tax); vehicle technology of alternative modes to rail and short-term elasticity between public transport ridership and vehicle operating costs. The client, Transport for New South Wales, primary interest was to better understand the future impact of these factors on the NWRL patronage, from its proposed commencement of operations in 2021 to initially a 40 year horizon, to 2061 and beyond covering vision of 100 years.

- **Cross River Rail (QLD)**

Prepared the economic impact assessment of the proposed Cross River Rail corridor (Brisbane) on local and regional economic activity, residential and commercial property and labour market conditions. The geographic extent of the assessment was between Bowen Hills and Yeerongpilly with particular emphasis on proposed new railway station locations in Brisbane CBD, Exhibition, Gabba, Park Road and Yeerongpilly in Brisbane.

- **Northern Busway Concept and Impact Management Plan (QLD)**

Economic leader for conducting the economic impact analysis of the USD850 million Northern Busway Project. This analysis included the cost benefit analysis modelling of public transport and road user benefits, discounted cash flows and the Computable General Equilibrium (CGE) modelling of the capital expenditure and operational maintenance expenditure in conjunction with Monash University's Centre of Policy Studies (COPS).

- **Eastern Busway Concept and Impact Management Plan (QLD)**

Economic leader for conducting the economic impact analysis of the USD2.2 billion dedicated busway inner south Brisbane to the South East Busway at Buranda, on to Princess Alexandra Hospital and the University of Queensland and ultimately to Capalaba. This analysis included the cost benefit analysis modelling of public transport and network benefits and Identifying and assessing other economic generators located inside outside the corridor that would benefit as a result of the Eastern Busway.

- **Albury Wodonga National Highway Project (NSW/VIC)**

Responsible for conducting a comparative economic analysis of route options (ranging in costs from USD60 million to USD500 million) using inputs from traffic modelling and endorsed economic parameters from ARRB and state road authorities.

- **AusLink Darwin to Brisbane Corridor Study (NT/QLD)**

Led this major AusLink Corridor Study that identified current road conditions and industry drivers between Darwin and Brisbane. Other tasks included assessing



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corridor deficiencies and proposing a range of upgrading and maintenance initiatives to meet future industry and traffic demand.

- **Gladstone to Rolleston and Rockhampton to Barcaldine Corridor Strategies (QLD)**

Led the development of two strategic studies for east-west highway corridors in central Queensland, namely the Rockhampton-Barcaldine Capricorn Highway corridor and the Gladstone-Rolleston Dawson Highway corridor. Tasks included an analysis of the current transport conditions along the corridors as well as the future expected transport and economic environment (based on population and industry projections). Strategic investment options were formulated for the future development of the highway corridors.

Other Economic and Planning Studies

- **Temburong District Plan (Brunei)**

Sectoral leader for the macroeconomics, transportation and population tasks that were required for this District plan. Temburong is the largest in terms of area of the four districts comprising Brunei. The Temburong District Plan was undertaken for the Brunei Government's Town and Country Planning Department and provides an economic infrastructure, land use and transport master planning framework to 2025 to guide development in the District. Major activities included the preparation of transport and macro-economic sector papers including implications of BIMP – EAGA and the conduct of the 320 unit household survey (face to face) across the district's 57 kampongs to identify and assess current infrastructure and service delivery in the district, presenting findings at stakeholder workshop, liaising with government agencies regarding data sources and strategic planning options.

- **Kuala Terengganu City Centre Master Plan (Malaysia)**

Specialist economics consultant for the economic impact assessment for development components in the city centre master plan. Input –Output modelling was used to identify construction phase impacts for capital investment of MYR3.75 billion.

- **Sunshine Coast Regional Economic Development Strategy (QLD)**

This strategy study was prepared in association with SGS Economics and Planning, and developed planning principals, a shared vision and regional strategies to facilitate the future economic and business development for this major Queensland region. Connell Wagner was presented with the Planning Institute of Australia's award for this study.

- **Banten Rail (Indonesia)**

On site development of the Terms of Reference for the pre-feasibility study to upgrade the railway line between Jakarta and Merak in Western Java. The objective of the study was to identify existing and future demand for rail in Banten Province and the railway engineering investment options to meet forecast demand.



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- **Bougainville Wharves Rehabilitation Project (PNG)**

The preparation of the Baseline Survey Report of pre project conditions (i.e. copra and cocoa production, shipping, materials handling, etc) in Bougainville as part of this AusAid project. The report will in turn be used as a benchmark to identify and monitor economic and social improvements resulting from the rehabilitation and construction of the wharves at Buka and Kangu Beach respectively.

- **South East Queensland Water Infrastructure Projects (QLD)**

Project managed all the economic consultancies that have been commissioned by Queensland Water Infrastructure (QWI) for the proposed AUD1.7 billion Traveston Crossing Dam and AUD500 million Wyaralong Dam in South East Queensland. These economic consultancies include socio-economic profiling the regional and local economies with and without the projects and business surveying of the commercial use of water.

- **Western Corridor Land Study (QLD)**

Provided economic demand forecasting for a range of land use scenarios for the Department of Infrastructure and Planning's industrial land site at Ebenezer west of Ipswich. The work also considered future road and rail freight flows, freight logistics and transport cost structures in the corridor.

- **Burrum River Vehicular Ferry Pre-Feasibility Study (QLD)**

Project Leader for study for Hervey Bay City Council and Isis Shire Council which identified the key issues and constraints of operating a vehicular ferry service for the 3 km crossing of the Burrum River. Tasks covered in the study include the development of a capacity constrained operating model, estimates of marine and onshore infrastructure costs, environmental and marine safety approvals and community consultation.

- **Emerald Airport Master Plan (QLD)**

Project leader for the preparation of the Emerald Airport Master Plan. Emerald has experienced significant passenger number growth increasing from 80,000 to 240,000 passengers annually over the past decade due to mining major developments. Tasks involved identifying key drivers of growth, forecasting and identifying airside and landside airport developments that may be required when airlines moved from turbo-prop DHC8 and ATR 72 to small jets.

- **Port Macquarie Airport Economic Impact Assessment Study (NSW)**

Project leader for the Port Macquarie Airport Economic Impact Assessment Study that was commissioned by Port Macquarie - Hastings Council. The study identified and measured the range of economic benefits that would accrue from the upgrading the airside and landside infrastructure at Port Macquarie Airport to support larger



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and heavier passenger aircraft ranging from Dash 8 400 series and Embraer EJ 170/190 series to jet services such as the Boeing 737 700/ 800 series and Airbus A320. Tasks also included developing forecasting models for air services and passengers over a 20 year time line.

- **Wide Bay Burnett Aviation Infrastructure Requirements Study (QLD)**

Conducted this study for the Queensland government that comprised a detailed analysis of existing aviation industries and services and the provision of an action plan to 2027 for the sustainable development of the aviation industry in the Wide Bay Burnett region. Airports that were in scope of the study were Hervey Bay, Maryborough, Bundaberg, Gympie, Kingaroy and airfields at Childers, Wondai, Nanango and Biggenden.

Previous Queensland Government and Australian Government appointments

1989 – 2000 Queensland Transport, Brisbane, Principal Advisor (Rail, Ports and Freight)

1987 to 1989 Queensland Department of Employment and Industrial Affairs, Brisbane, Policy Advisor

1980 to 1982 Commonwealth Department of Industry and Commerce, Canberra, Industry Advisor

1982 to 1987 and 1975 to 1980 Australian Bureau of Statistics, Canberra.
