



Fact sheet – Light Rail

Number 8, 2014

Part of the [Tranzinfo Hot Topics](#) series, this fact sheet offers a selection of material on Light Rail. Light Rail is a transport system using small trains or trams capable of operating as a single unit or as multiple units coupled together, often serving parts of a large metropolitan area primarily along exclusive rights of way. Major light rail projects are currently underway in several Australian cities.

Contents:

[Articles and reports](#)

[Light rail projects in Australia](#)

[Books](#)

[Organisations](#)

[Conferences: proceedings and future events](#)

Articles and Reports

[Direct and indirect impacts of light rail transit on VMT in Portland, or: a longitudinal analysis](#)

Ewing, R, Hamidi, S, Goates, JP & Nelson, AC

TRB 93rd Annual Meeting Compendium of Papers, 2014

This study assesses the effects of the Westside Max light rail transit (LRT) line and compares household travel characteristics before and after the “intervention” of the transit line. The authors discovered that, compared to the control corridor, the treated corridor became denser, generated more household transit trips, and saw a reduction in VMT per household after LRT had been in operation for 13 years.

[Do LRT planning decisions affect metropolitan transit performance? An examination of 8 US metropolitan areas with LRT transit backbones](#)

Brown, J & Jaroszynski, M

TRB 93rd Annual Meeting Compendium of Papers, 2014

This paper explores the role of socioeconomic and operational factors in overall fixed-route performance in eight US metro areas. The results show planning and operational decisions about service coverage, access, multimodal coordination and integration emerge as important influences on LRT.

[City of Calgary's West LRT Project - use of design-build for fast track delivery](#)

Delmar, R & Harper, C

2013 Rail Conference, 2013

This paper discusses the planning and funding for Calgary's West Light Rail Transit (WLRT) project, the rationale for proceeding with design-build delivery, and how public and organisational considerations were addressed.

[Do light rail services discourage car ownership and use? Evidence from Census data for four English cities](#)

Lee, SS & Senior, ML

Journal of Transport Geography, 2013, Vol. 29, pages 11-23

This research examines the impact of four light rail schemes on car ownership and travel mode along rail corridors. The evidence is unclear whether light rail reduces car use. This is significant because major investment in light rail rather than bus schemes is their presumed ability to bring about a modal shift by attracting substantial numbers of car users.

[Light rail transit experience in Madrid, Spain: effects on population settlement and land use.](#)

Calvo, FJ, De Ona, J, Aran, F & Nash, A

Transportation Research Record, 2013, No. 2353, pages 82-91

This paper examines the effects of two new light rail transit lines in Madrid, Spain, and the importance of integrated transport and land use planning, and demographic and socioeconomic changes in the development of cities.

[Identifying the determinants of light rail mode choice for medium and long-distance trips results from a stated preference study](#)

Creemers, L, Cools, M, Tormans, H, Lateur, PJ, Janssens, D & Wets, G

Journal of the Transportation Research Board, No. 2275, 2012, pages 30-38

This paper examines the determinants of light rail mode choice for medium and long-distance trips in Belgium. The results indicate that the use of light rail is strongly influenced by travel cost and in-vehicle travel time and to a lesser extent by waiting and access egress time.

[Impact of light rail on traffic congestion in Denver](#)

Bhattacharjee, S, Goetz, AR

Journal of Transport Geography, 2012, Vol. 22, pages 262-270

This paper discusses the rationale for constructing the light rail system in Denver. The results show that light rail has reduced the level of traffic along some of the adjacent highways for a short period of time and the three light rail corridors in operation have succeeded in lowering the level of traffic within the local area.

[Impact of light-rail implementation on labour market accessibility: A transportation equity perspective](#)

Fan, Y, Guthrie, AE, Levinson, DM

Journal of Transport and Land Use, 2012, Vol 5, No 3, pages 28-39

This study examines transit's role in promoting social equity and job accessibility among workers of different wage categories. The results find that proximity to light-rail stations and bus stops offering direct rail connections are associated with large, statistically significant gains in accessibility to low wage jobs.

[Making a LRT based regional transit system: lessons from five new start cities](#)

Thompson, GL, Brown, JR

Journal of Public Transportation, 2012/7, Vol 15, No 2, pages 157-180

This paper describes the features of a successful light rail transit (LRT) system. Three features of the Portland transit system are discussed including the network's dispersed nature, the overlay of higher speed, and the use of transfers for passengers to a diverse array of destinations.

[Back to top](#)

Light rail projects in Australia

[Light rail in Australia: performance and prospects](#)

Curry, G & Burke, M, 2013

Australasian Transport Research Forum (ATRF), 36th, 2013, Brisbane, Qld.

An examination of the Australian light rail network, which is expected to grow by about a quarter over the next decade, with new routes proposed for the Gold Coast, Sydney, Canberra and Perth. Light rail is seen as a solution for urban redevelopment and congestion management.

[Do preferences for BRT and LRT vary across geographical jurisdictions? A comparative assessment of six Australian capital cities](#)

Mulley, C, Hensher, DA & Rose, J

Case Studies on Transport Policy, 2014, Vol. 2, No. 1

This paper presents the results of a survey of residents of six Australian cities to investigate differences and similarities in preferences for BRT or LRT options. The experiment's focus is to assist in the development of a strategy to promote BRT and to break through the barriers that have created the modal misperceptions so common in many geographical jurisdictions.

Sydney

[Sydney Light Rail](#)

Website of the Sydney light rail projects. Includes latest news releases, project updates, reports, and maps.

[Sydney's light rail future](#)

Transport for NSW, 2012

The NSW Government's plan for a light rail route from Circular Quay to Kingsford and Randwick, via George Street in the CBD.

[The future Inner Sydney light rail network](#)

Brooker, T & Uddin, A

Australasian Transport Research Forum (ATRF), 34th, 2011, Adelaide, Australia.

This paper examines the Inner West light rail extension to Dulwich Hill and how current patronage of the system can be improved by increased train capacity, better fare integration and passenger comfort. Outlines the urban amenity benefit of light rail vehicles replacing buses on the major streets of the Sydney CBD.

Newcastle

[Revitalising Newcastle: light rail from Wickham to the beach](#)

NSW Government website outlining the first stage of the planned Newcastle light rail system.

Gold Coast

[GoldLinQ website](#)

Website of the Gold Coast light rail project. Includes latest news releases, project updates, reports, and maps.

[Gold Coast Rapid Transit: lessons learned from planning to procurement](#)

Queensland Government

Queensland's first light rail system will be operational in 2014. This publication comes in two parts: an executive summary, and a technical paper covering areas such as planning, procurement and governance.

[Gold Coast City Transport Strategy 2031](#)

City of Gold Coast

Includes an outline of future planned stages of the light rail network.

Perth

[Perth MAX Light Rail](#)

Website of Perth's light rail project. Includes latest news releases, project updates, reports, and maps.

[Perth grapples with growth and funding challenges](#)

Carter, M

International Railway Journal, 2013, 53(11)

This article discusses Perth's light rail project in light of the state government's draft plan, "Public Transport for Perth in 2031" - the \$A 1.9b Metro Area Express (Max), which provides for high-capacity public transport in the city centre to improve travel times and reduce congestion.

[A modern light rail for Perth](#)

Ney, SM & Mason, G, AusRAIL PLUS 2013, Driving the Costs out of Rail, 26-28

November 2013, Canberra, ACT

A proposed solution to increased demand for public transport in Perth is a light rail network that not only links the suburbs to the CBD, but will also change the way people move through the CBD. This paper outlines the light rail project and the opportunities and challenges arising.

Adelaide

[Integrated transport and land use plan](#)

The Plan provides details of new routes for the AdeLINK tram network proposed by the State Government.

Canberra

[Capital Metro](#)

Website of Canberra's light rail project. Includes latest news releases, project updates, reports, and maps.

[Connecting Canberra by light rail](#)

Canberra Airport, September 2013

Canberra Airport's proposal for a light rail network linking the airport to Parliament House. See also the [fact sheet](#).

[Density and LRT: the case of Canberra, Australia](#)

Gordon, C

Transportation Research Board Annual Meeting, 89th, 2010, Washington, DC, USA

This paper examines the issues of serving low and medium density communities with light rail, using Canberra as a case study. The study qualitatively and quantitatively characterises the socioeconomic and demographic profile of Canberra, with a focus on centres of population and economic density; reviews the literature on LRT for low-to-medium density areas; and analyses what an LRT in Canberra would look like if it is to be financially, operationally and environmentally sustainable.

Hobart

[The light rail business case – Hobart to Glenorchy](#)

ACIL Tasman, prepared for the Department of Infrastructure, Energy and Resources, May 2013

A business case for the proposed northern suburbs light rail service.

[PricewaterhouseCoopers reports on Hobart Light Rail Proposal](#)

PwC, prepared for the Department of Infrastructure, Energy and Resources, 2014.

A series of three reports covering preliminary planning, strategic assessment, and wider economic benefits.

[Back to top](#)

Books

[Light rail developers' handbook](#)

Lewis, L, J Ross Publishing, 2011, 276 p.

This book presents information about light rail design, travel, operations, costs, marketing, and engineering. Case studies provide a look at light rail systems in a number of cities around the world.

[Track design handbook for light rail transit, second edition](#)

Parsons Brinckerhoff, TCRP Report 155, 2012

This Handbook provides guidelines and descriptions for the design of various common types of light rail transit (LRT) track. The track structure types include ballasted track, direct fixation track, and embedded track. The guidelines consider the characteristics and interfaces of vehicle wheels and rail, tracks and wheel gauges, rail sections, alignments, speeds, and track moduli. The Handbook includes chapters on vehicles, alignment, track structures, track components, special track

work, aerial structures and bridges, corrosion control, noise and vibration, and the integration of LRT track into urban streets.

[Back to top](#)

Organisations

[Light Rail Transit Association](#)

The LRTA is a non-profit UK based organisation and has members throughout the world. It is concerned with the achievement of better public transport through light rail, tramway and metro systems in towns and cities world-wide.

[Light Rail Transit Authority](#)

The Light Rail Transit Authority (LRTA) is a public transport operator that is in charge of operating and maintaining the Manila Light Rail Transit System. It is responsible for monitoring the progress of construction of all LRTA lines of the Manila Metro Rail Transit System.

[The InlandRail Empire Rail Transit Association](#)

InlandRail is a registered non-profit, non-partisan citizens' group dedicated to advocating for rail transit as part of a more balanced transportation network for the Eastern Washington and Northern Idaho region, promoting sustainable growth, economic vitality, affordable citizen mobility, and increased community character.

[Back to top](#)

Conferences

Proceedings

[12th National light rail conference: sustaining the metropolis: LRT and supercars for super cities](#)

11-13 November 2012, Salt Lake City, Utah

This conference was jointly sponsored by American Public Transportation Association and the Transportation Research Board and showed decision-makers in mid-sized metropolitan regions how investments in light rail and streetcars have addressed and can continue to address the greatest deficiency of transit in modern America: the failure to connect Americans to jobs. Conference sessions discussed the positive results experienced by metropolitan areas that have embraced light rail, and how cities that have rejected these modes of transportation have fared.

[Light rail world Europe 2013 business conference](#)

4/9/2013 - 4/10/2013, Spain, Madrid

This conference is the only commercial industry event for light rail operators and their suppliers and took place as part of the 9th annual Metro Rail congress. It showed how to successfully plan, develop and operate light rail transit within the scope of integrated urban mobility, and provided a forum for executives from Europe's most exciting tram and tram-train projects to network and brainstorm best-practice for LRT operations.

Future conferences

[National light rail conference: light rail transit and streetcars: mobility partners in the evolving metropolitan environment](#)

Sponsored by TRB and the American Public Transportation Association
November 15-17, 2015. Location to be announced.

[Light Rail Europe 2015](#)

Olympia West, London, 9-11 March 2015

[Light Rail 2015](#)

Informa, Australia. Dates to be announced.

[Back to top](#)

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Australia

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ARRB Group, MG Lay Library
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