EcoTransit Sydney
Policy 2007

Framework and Priorities

EcoTransit Sydney's policy can be broadly viewed as attempting to change the expensive and wasteful system of moving *vehicles* to a system that moves *goods* and *people* in the most energy efficient manner possible. Our policy is based on three simple priorities:

- The need to immediately reduce emissions of greenhouse gases
- The long-standing need to improve air quality
- The need to immediately reduce NSW dependence on oil

We base our policy and our priorities on the following facts:

- Rail is three times more energy efficient, in terms of fuel efficiency, than semi-trailers in moving freight.
- Traffic delays and interruptions to traffic flow in Australia's six major cities account for around 13 million tonnes of greenhouse gas emissions each year, cycling during peak hours would reduce GHG emissions and contribute to further emission reductions by reducing congestion and improving traffic flow.[1]
- Half of all trips made by private vehicles in Sydney are journeys of 5 kilometres or less.
- A single 8-car train will comfortably remove up to 1700 cars from the road.
- An average light rail vehicle will comfortably remove up to 200 cars from the road.
- An average bus will comfortably remove 45 cars from the road.
- Bike riding uses minimal fossil fuels and is a pollution-free mode of transport.

Significant reductions to greenhouse gas emissions, air pollution and oil dependency can be effected by a commitment to:

- Changes to road pricing for freight vehicles and private vehicles;
- Increases in the speed, efficiency and coverage of the rail freight network;
- Increasing the availability, frequency and efficiency of public transport, and
- Dramatic increases in the availability and accessibility of active transport options such as walking and cycling.

Making these changes will allow for dramatic improvements in all transport sectors, reducing congestion, improving air quality, reducing our contribution to global warming and beginning the transition to a future powered by renewable electricity.

Funding

It is our preference for such important projects to remain above issues of profitability. For this reason, we believe a government bond system whereby members of the public, and private companies, can invest in the project is the model to follow for infrastructure. We believe that this provides the maximum guarantee that the infrastructure will perform to specifications for use and integration with other public infrastructure. Another funding mechanisms that we are willing to support are land value capture models. (See Appendices)

Timeframes

In the face of climate change and increases in the cost of oil-based fuels it is vital that we recognise that there is a limited window of opportunity to make significant change. EcoTransit Sydney believes that the majority of changes required must be underway of nearing completion by 2012.

[1] Research undertaken by Queensland Government - http://www.transport.qld.gov.au/Home/General_information/Cycling/Benefits/

Transport Addressing Climate Change, Air Pollution and Oil Dependence

Transport plays a very significant part in the economic life of NSW, and also plays an increasingly larger role in NSWs Green House Gas (GHG) emissions. It is clear that change is needed, and as the Stern report indicated, taking action will cost us, but *not taking action* will cost us *more*.

Climate Change

The NSW Department of Environment and Conservation's State Of the Environment (SOE) report for 2006 had the following to say about transport and climate change :

"The numbers of cars owned, and car trips taken, are increasing at a faster rate than population growth….Transport is the second-fastest growing source of NSW greenhouse gas emissions and continues to be a significant source of particles, as well as oxides of nitrogen and volatile organic compounds." [2]

While EcoTransit Sydney believes that public and active transport options will be very important parts of reducing the NSW contribution to greenhouse gas emissions, it is imperative that road-based freight[3] be shifted to rail to improve fuel, energy, and CO2 efficiencies. In the longer term, electrification of all public and private transport will consolidate greenhouse emissions at a single point, and to prepare NSW for a comparatively seamless transition to renewable electricity.

Air Pollution

In 1996, the NSW government recognised that the key to reducing air pollution and improving air quality is reducing the amount of kilometres travelled in private vehicles[4]. Again, the 2006 SOE report notes that:

Motor vehicles are the major source of air pollution in Sydney (EPA 2003a), accounting for:

- *71% of the emissions of oxides of nitrogen (NOX)*
- *38% of volatile organic compound (VOC) emissions*
- *12% of fine particulate emissions.* [5]

EcoTransit Sydney believe that moves to deter private vehicle use, and to expand public and active transport initiatives, will make a significant dent in health and productivity issues associated with poor air quality.

Oil Dependence

Recent fluctuations in the price of oil can be seen as an indicator of the type of shifts we are likely to see as this finite resource becomes more scarce and therefore more expensive. Once more, the 2006 SOE report captures a little-recognised aspect of the economic landscape:

"In 2001, 86% of Sydney's freight was moved by road and this proportion has increased over time at the expense of alternative modes, including rail…", and that "*Light commercial vehicles, rigid trucks and articulated trucks …consumed 31% of the 8.5 gigalitres of fuel used by all road transport users, and produced 33% of the 18.9 gigagrams of CO2-equivalent emissions (which is expected to grow to 38% by 2020)."*[6]

Rising costs for petrol and diesel fuel affect consumers at all levels (including companies moving goods), causing them to reassess their needs and the methods by which they meet these needs. EcoTransit Sydney believes that the future of transport in NSW will be renewable electricity-driven and that preparing for a large shift to modes of transport that are suitable for electrification will prepare NSW for a the transition from an oil-based economy to one based on renewable electricity.

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[2] http://www.environment.nsw.gov.au/soe/soe2006/chapter2/chp_2.4.htm

[3] Constituting at least 86% of all freight in NSW in 2001, and rising.

[4] To date this target has not been met and indeed, has recently been removed from the Clean Air Act.

[5] http://www.environment.nsw.gov.au/soe/soe2006/chapter2/chp_2.4.htm

[6] ibid

Forewarned is Forearmed - Planning Is The Key

EcoTransit Sydney believe that there should be no reason to delay initiatives to immunise NSWs transport system against the likely effects of green house gas reduction strategies and the volatility of oil prices. Planning is the key to making a seamless transition to a system based on renewable energy sources. Planning will also achieve good outcomes regarding other foreseeable changes to the transport equation.

Issues such as:

- Increasing numbers of public transport patrons who have impaired mobility as the population ages
- Increasing numbers of public transport patrons as the affordability of fossil-fueled private vehicles declines
- Increasing numbers of active transport users who choose to address climate change, oil volatility and health issues by walking or cycling.

EcoTransit Sydney is very concerned at the absence of planning for these events. This absence of planning translates into an absence of funding, and indicates a failure to develop initiatives in a timely and efficient manner.

Infrastructure

There are many improvements that can be made at the level of changing current processes and priorities, however, we believe that it is also vitally important to begin any major infrastructure changes now, as they will take time to develop and implement.

Consolidation of planning and approvals for transport and land use

Any government of NSW must commit to planning that is coherent across all sectors of transport and land use. For this reason we believe that it is imperative to consolidate all planning and approval powers within a single organisation that will have responsibility for the coordinated and integrated planning of all infrastructure and development.

Currently the Roads and Traffic Authority makes decisions that derive from road transport planning devised in the late 1940's[7], rather than taking part in the more recent planning initiatives developed as part of the Metropolitan Strategy. The Metropolitan Strategy has extensive transport and land use planning that applies to all development EXCEPT those currently on the RTA's list of projects.

[7] The F6 motorway proposal derives from a document concerning a radial road network developed in the late 1940's. See appendix 5 and 6 for more information about the County of Cumberland Scheme and the implications of a road transport authority that operates outside all other transport and land use planning initiatives.

1. Research to Be Undertaken by March 2008

Item Priority:	GHG	Air Qual	Oil
Commission research into the long-term (15 years) viability of current passenger and freight system with respect to greenhouse emissions reduction targets. Research to be completed by June 2008. Report released by December 2008.	Y	Y	Y
Commission research into the long-term (15 years) viability of current passenger and freight system with respect to rising oil prices and declining availability of oil-based fuels. Research to be completed by June 2008. Report released by December 2008.	Y	Y	Y
Commission research into the long-term (15 years) viability of current passenger with respect to rising numbers of mobility impaired passengers. Research to be completed by June 2008. Report released by December 2008.	Y	Y	Y
Commission research on the implementation of public-sector greenhouse gas reduction targets of 40 and 60 percent by 2015. Research to be completed by June 2008. Report released by December 2008.	Y	Y	Y
Commission research on the impact of current private-sector greenhouse gas contributions in NSW. Research to include an assessment of the greenhouse reduction benefits of the following: • less-than-car-load (LCL) containerisation • movement of "smalls" parcel and non-bulk traffic by rail. • increases in movement of container freight by rail (90% of 2006 tonnage)	Y	Y	Y
Commission research on the extension of freight rail electrification on current freight routes to the following major regional centres: • Bathurst or Parkes (decentralised freight hub for west and north-west) • Goulburn (decentralised freight hub for south and south-west regions) • Port Waratah (port of Newcastle) • Maitland (junction and freight hub for North Coast and north-west lines)	Y	Y	Y
Commission research on the economics, efficiency and environmental factors (eg. compatibility with green energy) of Queensland Rail's 25kV a/c electrification system with a view to a long-term changeover from the existing 1,500v d/c system currently in use in NSW.	Y	Y	Y
Commission research into development of facilities for bikes in existing and new suburban & intercity carriages. [8]	Y	Y	Y

[8] Where there is physical room to do so, such as bicycle hooks (as provided in certain inter-city carriages); and increased signage and pictograms where space can be made available in vestibule areas.

2. Legislative Action To Be Undertaken by Dec 2007

Item Priority:	GHG	Air Qual	Oil
RTA to be stripped of current planning and approval powers. This will consolidate planning and approval powers for roads and transport within general planning framework.	Y	Y	Y
To ensure best use of funds, replace road funds by transport funds (as per Western Australia, New Zealand and as proposed under AusLink).[9]	Y	Y	Y
Set targets for reducing the number of vehicle kilometres travelled by private vehicles as a benchmark of air quality improvement for transport authority.	Y	Y	Y
Institute a five-year moratorium on new road developments.	Y	Y	Y
Impose a congestion charge for access to the Sydney CBD. [10]	Y	Y	Y
Restore federal fuel excise indexation. Additional revenue to be used for improved transport infrastructure.	Y	Y	Y
Implement priority traffic lights for buses.	Y	Y	Y
Develop new pricing regime for private vehicle registrations ensuring that registration fees and charges reflect the contribution of the vehicle to ghg emissions. • All private vehicles to be assessed against a greenhouse gas (ghg) emission index as part of their registration process. • All private vehicles to be assessed against an index that will rate fuel efficiency. • All private vehicles to be assigned a 'star' rating on these indices and this rating to be visible on registration labels. • Four-wheel drive (4WD) vehicles should only be driven with a legitimate need for off-road, four-wheel-drive propulsion (i.e. farming, regional tourism and off-road recreation). Premium registration fees should be charged for 4WD vehicles registered to addresses in a major metropolitan centre.	Y	Y	Y
T2 transit lanes to be increased to T3 (three persons)[11]	Y	Y	Y
Adjust road freight rates to provide a realistic assessment of the costs to the public road maintenance, greenhouse emissions targets and congestion-related productivity costs. Road pricing for the heavier long distance trucks should include a mass - distance charge.[12]	Y	Y	Y

[9] Western Australia has implemented a similar solution with the result that the majority of funding for "transport" shifted from roads to public transport.

[10] And/or impose an environmental fuel levy for motor vehicle use in the Sydney Greater Metropolitan Area. Apply the proceeds to transport funds for not only better roads but alternatives to roads (as per the New Zealand approach when they increased fuel excise in 2002)

[11] Three people in a private vehicle are the point at which energy efficiency rates become comparable with rail.

[12] These have been successfully used in New Zealand since 1978 and in Switzerland since 2000 and are in increasing use in Europe

Develop emissions limits for Diesel locomotives, as per road-based vehicles. • Emission and noise limits for railway diesel locomotives • Develop tax incentives for modifications to locomotives that eliminate emissions.	Y	Y	Y
Prepare legislation to implement fuel saving schemes as proposed in the IEA workshop "How to save oil in a hurry"(see appendix 1)	Y	Y	Y
Reinstate tolls at Berowra and Waterfall, with the proceeds being used to expedite long-overdue improvements of both the Pacific and Princes Highways.	Y	Y	Y
Remove toll rebates in Western Sydney and dedicate10% of toll revenues towards a Western Sydney Public Transport Trust that will fund much needed public transport infrastructure in the Western Sydney area.	Y	Y	Y
Increase the amount of renewable energy used by City Rail to 100%.	Y	Y	Y
Increase the current level of matching funds available to local government for the implementation of bicycle plans by a factor of three.	Y	Y	Y
Extend the conditions under which bikes “travel for free” on trains (during off peak) to include “counter-peak” trips	Y	Y	Y
Extend the conditions under which bikes “travel for free” on trains to include folded bicycles (since these are of no inconvenience to other travellers more than any other luggage carried).(see appendix 2)	Y	Y	Y

3. Initiatives to be abandoned by May 2007

Item Priority:	GHG	Air Qual	Oil
M4 East	Y	Y	Y
F6 Motorway	Y	Y	Y
Iron Cove Bridge Duplication	Y	Y	Y
Expansion of Port Botany[13]	Y	Y	Y
Per Kilometre pricing for public transport, in recognition that routes are not designed for shortest distance to destination but on greatest coverage of a passenger base.	Y	Y	Y

[13] In favor of increasing activity at Port Kembla and Port Waratah, and development of rail infrastructure that will access city edge freight warehousing directly.

4. Initiatives to be funded by May 2008

Item Priority:	GHG	Air Qual	Oil
Develop a citywide network of bicycle priority paths, color-coded in the manner of bus and transit lanes.	Y	Y	Y
Replacement of current parliamentary car fleet with hybrid or fully electric vehicles.	Y	Y	Y
Implement a trial of Hydrogen and Electric Buses.	Y	Y	Y
NSW Government to upgrade current freight rail system. Projects to improve rail freight (and passenger rail) include:[14] • duplication and electrification of the Port Botany Line • completion of the Maldon to Dombarton railway, as a short cut for freight traffic from the west and northwest to Port Kembla/Inner Harbour. • construction of a new freight and country/interstate passenger line to free up the existing North Coast line between Mt Kuring-gai/ Berowra - Gosford line for passenger trains • replacement of degraded infrastructure, such as bridges, tunnels, signalling and unnecessary curvature of routes, in line with suit future requirements.	Y	Y	Y
Long-term strategy for suburban & intercity carriage fleet acquisition to accommodate doubling of patronage by 2010-2015.	Y	Y	Y
Long-term strategy for orderly replacement of existing diesel bus fleet by all natural gas, electric and trolley buses by 2010 -2015.	Y	Y	Y
Deployment of travel pass/travel ten readers for private passenger buses in Sydney.	Y	Y	Y
Development of multi-modal integrated zone and periodic pricing system for Sydney, Greater Sydney and Newcastle suburban & intercity systems	Y	Y	Y
All Sydney bus depots to get natural gas supply facilities to facilitate the deployment of NG buses can be on all routes.	Y	Y	Y
North West Rail Extension	Y	Y	Y
South West Rail Extension and Rolling Stock Stabling Facilities at Leppington	Y	Y	Y

[14] In addition to work now under way by the ARTC on the Southern Sydney rail project and the Strathfield Hornsby line (which should be completed by 2010).

5. Initiatives to be addressed at Federal and COAG forums in 2007

Item Priority:	GHG	Air Qual	Oil
Pursue a sister-campaign with Western Australia to import electric car models for assessment by Standards Australia for use in NSW.	Y	Y	Y
Campaign for elimination of tax concessions on company cars or the development of similar concessions for public transport use.	Y	Y	Y
Campaign for elimination of the Queensland Fuel Subsidy Scheme ($40m per year)	Y	Y	Y
Increase bicycle infrastructure and facilities to 3% of the total transport budget.	Y	Y	Y
Ensure that the further determinations of heavy vehicle road user charges, as set by the National Transport Commission, recovers full road system costs from heavy articulated trucks, B-Doubles and road trains. [15]	Y	Y	Y

[15] At present, these vehicles are cross-subsidised by other road users. Ensure that additional revenue is directed towards not only National Highway System maintenance (to compensate for changes under AusLink), but rail track and improved intermodal facilities.

Glossary

Term	Definition and examples
Tramway	Traditional street railway dating from 1830's. Generally use ground level loading, single cars at close headways. Old examples: Melbourne, Toronto. Latest examples: Portland Streetcar, Tacoma Link.
Heritage tramway	Street tramway using historic or replica old style trams. First example was in Bendigo. Some are precursors to modern Light Rail: Charlotte, N.C., Memphis, Tenn. Others like San Francisco Muni's "F" line integrated with modern Light Rail.
Light Rail Transit	High speed, largely reserved track city / suburban electric light railway. May use subway or elevated track. Some use high platform loading, most have low platforms. Use either single cars or short trains. Early examples: Glenelg line, Adelaide, 1929; Shaker Heights Rapid Transit, Cleveland, OH, 1930. Modern examples: Calgary, Edmonton, Frankfurt, Los Angeles [High platform], San Diego, Sacramento, Sydney, Sheffield [Low platform].
Interurban	High speed inter-city light to heavy electric railway historically derived from tramway technology. Originated in USA, now virtually extinct there. US survivor : Chicago, South Shore & South Bend RR, Cuba: Hershey Electric Rly, Havana-Matanzas. German examples: Koln-Bonn Eisenbahn, Rheinbahn. The Shinkansen and TGV are ultimate developments of the Interurban. The "Tram-train" is the latest European variant of the concept. Modern LRVs use street track in town centres and then run on regional rail lines to improve services over those traditionally offered by the railway operator.
Light Metro	Subway or elevated electric railway using tramway size cars. Can negotiate tight curves when necessary. High platform loading. Mostly uses 3rd rail power supply. Examples: Paris Metro, Chicago Transit Authority, Berlin U-Bahn, and London Tube.
Heavy Metro	Subway or elevated electric railway using mainline railway size cars. High platform, mostly 3rd rail power, very high capacity, heavily engineered infrastructure, totally grade-separated. Examples: London Metropolitan & District Underground, New York City MTA.
Mainline Electrified Railway	Heavy mainline steam / diesel railway electrified for economic, environmental or operational reasons. Examples : Swiss Federal Railways, Queensland Rail North Coast Line, Trans Siberian Railway.
High Speed Railway	Electrified Interurban line engineered for speeds up to 360-400km/h. Examples: Shinkansen [Japan], TGV [France], AVE [Spain], ICE [Germany]. Australia - nothing.
Railway and Tramway Infrastructure.	
Street Track	Paved tramway or railway track laid in public streets sharing roadspace with other traffic. Used by traditional tramway systems, light rail, interurbans, occasionally mainline railway [eg Denison St, Rockhampton]. Example : Melbourne, most routes.

Reserved Track	Paved, grassed or ballasted track laid beside or in the median of public streets, but segregated from other traffic. Used by tramways, light rail, interurbans. Example: Dandenong Rd, Melbourne.
Private Right of Way -	Ballasted [usually] track laid on its own easement, crossed by public streets at grade or by over or underbridges. Used by tramways, light rail, interurbans, light and heavy metros and mainline railways. Example : Glenelg line, Adelaide, South Terrace to Brighton Rd.
Grade Separated Right of Way -	Where private right of way is fenced and has no at grade [level] crossings of public streets or other railways, including by elevation, subways or tunnels. Can be used by all modes but preferred for light metro, necessary for heavy metro, high speed rail.
Tunnel or Subway	"Tunnel" is the term for a bore to deal with a geographical feature such as a hill or ridge. "Subway" describes a bore or underpass for grade separation purposes.
Single Track	A railway with one track used for both directions, with opposing traffic passing at sidings, controlled by one of a variety of safeworking systems, depending on the sort of operation. Suitable only for relatively low levels of service frequencies.
Double Track	A railway with one track for each direction, or two bi-directional tracks controlled to allow faster traffic to overtake slower traffic in the same direction.
Multiple Track	Where traffic densities or speed differences require segregated tracks for both direction and speed, Three or more tracks on the same right of way are used. A rare example of multiple street track was Market St, San Francisco. There were four tracks from 1912 till 1948. Known to locals as the "roar of the four", it was to separate the cars of the S.F. Municipal Rly [first publically owned US transit operation], from those of the Market St Rly Co., taken over by the Muni in 1944.
Turnout	Diverging [facing] or converging [trailing] tracks.
Crossover	Two turnouts allowing a movement from one track to another.
Junction	Point at which one route joins or splits from another.
Yard	Parallel tracks for storage or marshalling rolling stock
Depot	Base for crews and rolling stock.
Interlocking	Junction or yard controlled so that conflicting movements cannot be permitted by signals.
Substation	Transformer, feed and switching point for traction and other power supplies.
Traction Supply	Electric current powering rolling stock.
Overhead Contact Wire -	Conductor suspended over track for traction supply
Third Rail -	Conductor mounted beside track just outside running rails for traction supply.
Span Wire -	Transverse wire for supporting contact wire.
Traction Pole -	Support pole for overhead wire, by bracket or span wire.

Rosette -	Attachment point on wall or building for span wire.
Direct Suspended Overhead -	Contact wire attached to span wires or support brackets directly, without additional support.
Catenary Overhead -	Contact wire suspended from messenger wire by droppers, to provide improved current capacity and better contact at speed.
Feeder -	Transmission line from substation to traction supply
Section Insulator -	Divides traction supply into isolatable sections for work or emergencies.

Rolling Stock

Tramcar or Streetcar -	Basic electric car usually operated as single unit, on traditional street tramways. Can have either rigid or articulated car body
Light Rail Vehicle – articulated.	Electric car, with higher performance and capacity than basic tramcar. Usually equipped for train operation, most modern examples …
Rigid Car body -	Single body supported by one or two four-wheel trucks.
Articulated Car body -	Body divided into sections and supported by four-wheel trucks under car ends and beneath body joints.
High Floor Car -	Has car body with floor above trucks and electrical equipment, requiring steps for ground or low-platform loading.
Low Floor Car -	Has car body with floor low enough for step-less loading from ground or low platforms. Electrical equipment mounted on roof and specialised trucks and motor placement allowing level floor close to ground.
Interurban Car -	Electric car equipped for high speed operation and fitted with comfortable seats and a toilet for longer journeys. May vary in size from slightly larger than a streetcar to full size mainline railcar. May be articulated or rigid, and usually set up for operation in trains
Metro Car -	High floor, high platform loading car of very utilitarian appearance, operated usually in trains of 4 to 8 cars. Light and heavy cars differ only in size and the ability to negotiate sharp curves. Articulated Metro cars are rare. Most use third rail traction supply.
Mainline Equipment -	May be self-propelled or locomotive hauled. Full size mainline rolling stock. Standard of passenger accommodation varies from high-density commuter configuration to premium long distance comfort levels.
High Speed Train -	Specially equipped with high power to weight ratio, articulated or fixed-consist cars. May be fitted with tilt mechanism. Only reach top speed on dedicated lines.

Local Train Terms

V-set	Double-deck stainless steel intercity (previously interurban) trains built between 1970 & 1988, used in Greater Sydney electrified network bounded by Newcastle, Lithgow, Port Kembla & Kiama. Never used in Sydney Underground except for trackwork diversions. Used as 4, 6 or 8-car trains. Features include 2 x 2 across seating, carpets, semi-automatic doors and toilets.
Tangara	Name of high-tech suburban & outer-suburban double-deck trains built between 1987 & 1994.

Sets	Commonly-used word for train
Target Plates	The metal plates on each end of an electric suburban or intercity two, four or six car block, depending on the type of train. The colours used denote the Sector in which that train (set) operates and the respective home depot. The letter denotes the type of train, and the number being the train (set) number within that type: *Blue targets: Sector 2 & Intercity (Flemington) C: Chopper-control double-deck suburban, 4-car sets) H: Oscar Trains, 4-car sets. M: Millennium Trains, 4-car sets (main depot is EDI Rail, Eveleigh) V: Double-deck intercity trains, 4 & 6-car sets *Black targets: Sector 3 (Hornsby) G: Outer-suburban Tangaras, 4-car sets K: Air-conditioned double-deck suburban (pre-Tangara) *Red Targets: Sector 1 (Mortdale) L: Non air-con. double-deck suburban trains for South Coast (Thirroul - Kiama) runs, 2/3-car sets. R: Non-air-con. double-deck suburban trains, 6-cars* S: Non-air-con. double-deck suburban trains, 4-cars* T: Tangara suburban trains, 4-cars* * = across all three sectors and depots.
Dead Man's Handle	Device (or foot pedal) which automatically applies the emergency brakes should the driver become incapacitated.
Guard's Indicator	A white light indicator on all stations which gives the train guard authority to allow the train to proceed.

NSW Manufacturers

Comeng:	Commonwealth Engineering Co. Granville (manufacturer of double-deck intercity trains between 1970 & 1988 and non-air-conditioned suburban train carriages between 1972 & 1982).
Goninan	A. Goninan Pty Ltd, Newcastle (manufacturer of Tangara and air-conditioned suburban trains), now known as United Group.

Appendices Listing

1. Funding public transport development through land value capture programs
   (Matthew Doherty 2005)

2. Saving Oil In A Hurry
   (International Energy Agency)

3. Moving On - The RTBU's Public Transport Blueprint for Sydney
   (RBTU)

4. The macroeconomic structure of cities -indicators for sustainable urban infrastructure development
   (Michelle Zeibots)

5. Urban Roads – A Health Asset
   (Chloe Mason)

6. Future Proofing Sydney
   (Dr. Gary Glazebrook 2007)

7. Transport For A Sustainable Future
   (Dr. Gary Glazebrook 2005)

8. Greenhouse Gas Emissions - ProjectedTrends for AustralianTransport
   (BTRE 2002)

9. New South Wales Greenhouse Gas Inventory 2004
   (Australian Greenhouse Office 2006)