

**SENATE RURAL & REGIONAL AFFAIRS & TRANSPORT
REFERENCES COMMITTEE**

INDEX OF TABLED DOCUMENTS

Inquiry into the role of public transport in delivering productivity outcomes

Perth, Wednesday, 19 February 2014

LODGED BY	TITLE/SUBJECT	PAGES
Sustainable Transport Coalition of Western Australia	Sustainable Oil - Living with Less	7
Sustainable Transport Coalition of Western Australia	Statement on Light Rail	4
Cole Hendrigan	Four maps	4
Committee for Perth	Presentation to Senate Rural	8

SUSTAINABLE TRANSPORT COALITION



SUE

OIL: LIVING WITH EVEN LESS Policy Statement



OIL: Living with even less

WA's transport system faces an oil-shortage crisis, probably within the next 2-5 years. Oil is a non-renewable resource and is being rapidly depleted by Australia's, and the world's, profligate use of the remaining reserves. Recent rises of the price of oil to over US\$140 per barrel indicate that we face serious problems in a community that has come to rely on 'cheap oil'. The proposals in this policy will help us develop a Plan B to address 'peak oil'.

Failure to take urgent and substantial action to reduce our oil dependence will leave all of us exposed to very serious economic and social risks. We owe it to those less-able to manage their budgets hit by higher oil and food prices, and to future generations, to heed the warning signs provided by rising oil prices. A proactive, precautionary approach based on Australians using less fuel in our economy is critical.

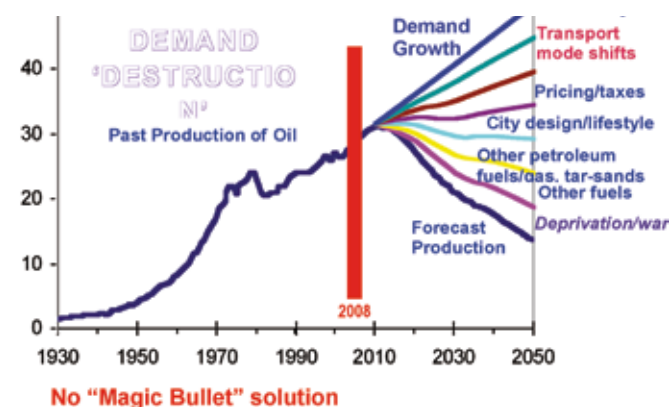
Many of the STC's suggested policy options to reduce fuel usage will also lead to healthier, happier and more equitable communities, reduce CO₂ emissions and improve local pollution levels.

POLICY PROPOSALS

The Sustainable Transport Coalition of WA proposes these policies to tackle the problems of oil depletion. We believe that government initiatives should be based firstly on an open acknowledgement of the magnitude and urgency of the issue of 'peak oil' (see explanation below), and secondly on rapid implementation of existing proven strategies to reduce our oil usage and the demand for automotive transport (such as the innovative TravelSmart program).

Government, business and the community should act NOW to reduce transport energy demand and also shift to gas and renewable, less polluting energy sources for remaining transport tasks (eg agricultural tasks). These policy proposals should be

read in conjunction with our other policies on Alternative Fuels, Walking and Cycling.



The STC advocates these priorities for reducing our transport fuel usage:

- Charging the real costs of transport and oil, including the lost opportunity costs for future generations of our profligate use of short-lived resources.
- Reducing car use and road freight transport, including allocating 40% of all urban transport funding towards safe efficient transport facilities for urban public transit, cyclists and pedestrians.
- Making vehicles more efficient, especially greatly improving fuel efficiency for the passenger vehicle fleet.
- Developing and using alternative fuels that provide practical and sustainable energy for transport.
- Reforming transport and energy policy to provide a framework for the shift away from oil and car dependence, and toward greater use of rail for passengers and freight.



(1) CHARGE THE REAL COSTS OF TRANSPORT AND OIL

Motorised transport users do not pay the real costs of travel as many indirect costs are imposed on the community (e.g. health effects and disruption of communities). Many transport costs are fixed (e.g. vehicle registration and insurance) or too low (e.g. Australian fuel prices compared with many other nations) and so distort the market. This mismatch results in social and economic costs for the community and a strain on public funds. In addition there are many perverse subsidies that work against a more equitable and sustainable transport system (e.g. \$940 million pa subsidies to company cars¹).

The costs of depriving future generations of vital petroleum resources are not included in current pricing or policies. Lower present day costs mean we are stealing resources from our children and grandchildren, with no assurance that there will ever be any replacement for the oil they will need for fertilisers, plastics and transport.

Incorporating costs more fully in what transport users pay (e.g. through fuel prices, road user charges or other means) would send a stronger price signal to influence travel behaviour, better reflect the real costs of fossil fuel use, and provide funds for sustainable transport infrastructure and for demand management programs.

¹ Dennis, R. 2003 "Implementing policies to increase the sustainability of transport in Australia" Paper to Western Australia Beyond Oil conference, 21 February 2003. See www.stcwa.org.au

Recommendations:

- 1.1 Incrementally increase excise on petrol and diesel to European levels (above any costs associated with a carbon

tax or ETS) to reduce demand and to provide funds for healthy, environmentally benign and sustainable transport programs. A significant share of revenue should be hypothecated to a sustainable transport fund for travel demand management and green mode infrastructure. The need for compensation for low-income earners should be addressed, but not in the form of fuel subsidies.

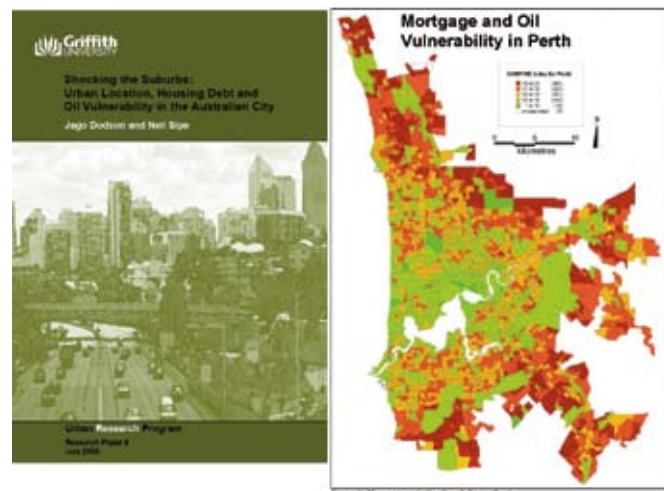
- 1.2 Abolish vehicle ownership charges and replace with a total pay-as-you-go vehicle use charge. Replacement of fixed charges was recommended by the RAC in 1979² Motor vehicle registration funds and third party vehicle insurance costs should be recouped entirely from fuel taxes, as congestion, road damage and crash injuries all depend on the level of use of the vehicle. A car left at home by someone walking or riding to work should not be taxed while standing still. It is not using road space or fuel, or injuring anyone while in the garage. Mass and distance based charges should apply to commercial vehicles, especially long distance heavy haulage trucks.

A national no-fault road injury compensation scheme would be far more equitable and effective than the various separate state-based third party schemes. This could also be far more easily funded from an increase in Federal fuel excise duty.

- 1.3 Remove taxation measures that encourage motor vehicle use and the purchase of imported four-wheel drives and other high fuel-consumption vehicles over more efficient vehicles. This should include fringe benefits tax reform to end the serious subsidisation of private car use, end incentives for high mileages and treat travel alternatives equitably. The 10% import duty concession on four-wheel drives should be abolished. The government should also provide graded stamp-duty fees to encourage the purchase of highly efficient vehicles and discourage the purchase of inefficient models, both new and secondhand.
- 1.4 Introduce 'driver fault' legislation to make drivers prove 'no-fault' when in collision with pedestrians and cyclists, as applies in some European countries.

² RAC 1979 Submission to the Energy Advisory Council "Energy Use in Transport"

(2) REDUCE CAR USE AND FREIGHT TRANSPORT TO CONSERVE PETROLEUM



Many urban passenger trips made by car could be transferred to modes that generate fewer impacts and more benefits, i.e. walking, cycling and public transport. This mode shift would mean more physical activity and provide additional benefits such as better population health, lower energy use and fewer CO₂ emissions.

Changes can be made in freight transport, by changing mode split (e.g. more freight on rail), logistics (e.g. using available container and truck capacity better and reducing fuel-inefficient “just-in-time” practices) and location (e.g. localising production and consumption and eliminating attenuated trips when alternatives are available).

Integrating land use and transport will be an important strategy to reduce travel demand, including mixed use urban villages on public transport networks (Transit Orientated Developments), enhancing pedestrian and cycle access within neighbourhoods and across cities and locating commercial and industrial activities according to accessibility requirements.

Speed limits should be reduced. Lower urban vehicle speeds improve urban amenity and quality of life and encourage walking and cycling. High vehicle speeds are alienating and disruptive, as well as dangerous.

Recommendations:

2.1 Broaden the scope of AusLink, the Federal Government’s

national land transport plan, to include urban passenger transport, walking and bicycle transport and to give high priority to transport energy efficiency, especially the implications of oil decline, in setting priorities and assessing funding bids.

2.2 Increase State and Federal government funding for the TravelSmart initiative to extend this effective household-based travel behaviour change program throughout Perth, and to all regional WA centres.

2.3 Give greater priority to walking and cycling in transport and land use planning and transport funding. Complete the Perth Bicycle Network and the rail-line cyclepaths from Perth to Armadale, Midland and Fremantle. Plan and construct bicycle networks for all regional centres and country towns. Auditing neighbourhood access to enhance travel by these modes and applying a Liveable Neighbourhood design code will be a good start. The STC policies “Walking” and “Bicycle Transport” provide more detailed recommendations. See www.STCwa.org.au.

2.4 Update the Metropolitan Transport Strategy to provide a framework for transport planning and investment. It should strongly support infrastructure, services and planning that favours public transport, cycling and walking for personal travel and rail for bulk freight transport. The mode share targets set in 1995 should be enhanced not watered down.

2.5 Include an urban growth boundary, development location policy and targets for residential density increases in the Greater Perth strategy to halt urban sprawl and better integrate land use and transport. Implement the proposals contained in Network City.

2.6 Establish an integrated transport funding process for WA. This should ensure transport funding advances strategic aims and is allocated on the basis of regional transport plans and inter-modal, triple bottom line project appraisal.

2.7 Review and act to address taxation measures that bias modal preferences towards car commuting. This should include reforms to fringe benefits tax (see 1.3) and encouragement of employer provision of public transport fares and bicycle transport expenses and cashing out of car and parking options.

2.8 Reduce urban and rural road speed limits. This will substantially improve road safety as well as reducing fuel consumption. WA’s 110 kmh rural speed limit should be lowered to 90 kmh, as was done during the 1970s oil shock. Urban arterial speed limits should be reduced to 50 kmh and residential street limits to 40 kmh, to follow successful examples in Australia and overseas. Speed limits past schools should drop to 25 kmh as used in South Australia.

(3) MAKING VEHICLES MORE EFFICIENT

The net energy efficiency of the Australian car fleet has changed little over the last three decades³. The increase in four wheel drive vehicles in the passenger fleet (larger and less efficient) has countered the effect of improved fuel efficiency in smaller cars, as has increased ‘road load’ due to auxiliary power requirements⁴. Vehicle design should enhance efficiency, including reduced weight, improved engine technology to enhance fuel economy and provide more appropriate, less ostentatious urban passenger vehicles.

³ R. Moriarty, P. 2000 Transport and the Environment Tela 6 Australian Conservation Foundation, Melbourne.

⁴ Road load covers vehicle weight, rolling resistance of tyres and air resistance, which affect vehicle fuel economy (see Moriarty op cit).

Recommendations:

3.1 Make stringent energy efficiency requirements, including fuel economy and ‘road load’ measures, part of Australian Design Rules for all classes of motor vehicle.

3.2 Require all motor vehicle advertisements and road tests to include the Australian Standard fuel consumption figures, so consumers may make an informed choice.

3.3 Tie government assistance to the domestic automotive manufacturing industry to the achievement of greater energy efficiency and environmental performance in motor vehicles made in Australia.

3.4 Governments should lead by example by developing and implementing fleet purchasing and management policies that require use of energy efficient vehicles and alternative fuels as the preference. Federal, State and local

governments should reduce their passenger car fleets by 5% pa and provide staff with attractive alternatives to a salary packaged or home garaged corporate car. Staff in transport and urban planning authorities should be encouraged to avoid company car packages and to travel by other modes to reduce real and perceived bias towards automobile dependence.

(4) DEVELOP AND USE ALTERNATIVE FUELS

Many alternative transport energy sources have been suggested. In the short term, LPG and CNG can be substituted for petrol and diesel, and Australia’s natural gas reserves give the nation a competitive advantage in starting the transition away from oil.

Hydrogen and electricity generated from RENEWABLE energy sources should be considered as potential future transport fuels. However, hydrogen generated from fossil fuel or biofuels that provide less energy than is needed to grow them are not sustainable options. Research and development for alternative transport fuels is important for longer-term options for transport fuels but won’t assist Australia in the next 5-10 years. A mixture of energy sources as well as demand reduction and increases in efficiency will be needed to fill the gap caused by dwindling oil availability.

Recommendations:

4.1 Encourage the use of LPG, CNG and LNG in the motor vehicle fleet. This should include preferencing gas for government fleets, providing financial incentives for vehicle conversions, or purchase of dedicated gas vehicles and financial support for provision or conversion of fuel storage and distribution infrastructure.

4.2 Ensure government-industry agreements for resource projects consider domestic supply (stationary and transport) requirements and support the development of downstream processing in environmentally appropriate locations. Pricing in long-term contracts and royalty agreements should fully include the probability of significant and sudden price rises for oil and gas.

4.3 Encourage research and development of alternative

transport energy technologies, including hydrogen fuel cells, electricity and biofuels where these are based on renewable sources and deliver net energy output.

- 4.4 Develop a rigorous transport energy research framework that sets out an assessment process for allocation of funding support and accreditation of green transport energy sources. Whole-of-lifecycle analysis should be used to assess the energy balance and greenhouse gas emissions of transport energy alternatives.

(5) REFORM TRANSPORT AND ENERGY POLICY

Oil vulnerability is a significant issue yet it attracts little discussion in policy circles or the media. Greater awareness of the issue is needed, informed by research into its implications for Australia and the consequences of continued inaction. This is particularly so in terms of the impact of 'peak oil' on Australia's flight-based tourism industries.

We urgently need a national energy policy that will make our transport system far more energy efficient and less oil dependent. The Federal Government has a significant influence on transport energy use through taxation, regulatory powers and funding. However leadership is needed from Governments at all levels. The State Government should follow through on its lead in transport energy by implementing an effective Transport Energy Strategy for WA⁵. Local Governments must also implement infrastructure policies that minimise automobile and oil dependence⁶.

⁵ The WA Minister for Planning and Infrastructure appointed a Transport Energy Strategy Committee in January 2003. Its recommendations for action were not implemented by the WA Government.

⁶ Further references to issues raised in this paper can be found at the Australian Association for the Study of Peak Oil & Gas website at <http://www.aspo-australia.org.au/> and at our website at www.STCwa.org.au, especially in our "Walking" and "Bicycle Transport" policies, the proceedings of the WA Beyond Oil? conference of February 2003, and the supporting paper on Oil Depletion.

See Portland Council report <http://www.sustainableportland.org/shared/cfm/image.cfm?id=145732> and the Brisbane City Council report http://www.brisbane.qld.gov.au/BCCWR/plans_and_strategies/documents/CLIMATE_CHANGE_ENERGY_TASKFORCE_REPORT.PDF?xml=/BCC:PDFHITXML:1275869355:svDocNum=2

Recommendations:

- 5.1 Implement the recommendations contained in the Senate's national inquiry into the implications of declining domestic oil production and peaking global oil production⁷. This should include oil vulnerability modelling scenarios to assess those affected most by the consequences of oil shortages, higher oil prices and transport energy alternatives.
- 5.2 State and Federal governments should review and publish annual oil supply and price scenarios to inform debate about the economic and social implications of inaction.
- 5.3 Develop a national transport energy policy to guide action including taxation and industry assistance reforms, vehicle design standards, vehicle purchasing (see 3.3) and transport planning.
- 5.4 Implement an effective Transport Energy Strategy for WA. Priorities for action should include the government fleet, community awareness and behavioural change, green transport investment and land use planning.
- 5.5 Encourage local government participation in the Cities for Climate Protection Program and support reforms in vehicle fleet management to favour demand management, alternative fuels and energy efficiency.

⁷ http://www.aph.gov.au/Senate/committee/rrat_ctte/completed_inquiries/2004-07/oil_supply/report/index.htm

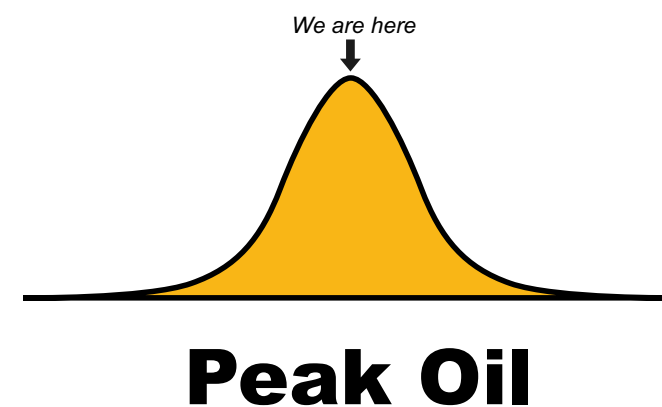
Roger Bezdek, a consultant for the US Department of Energy, said in a report in 2005:

"The peaking of world oil production presents the US and the world with an unprecedented risk management problem. ...without timely mitigation, the economic, social, and political costs will be unprecedented. ...Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking."

The world has never faced a problem like this. oil peaking will be abrupt and revolutionary."



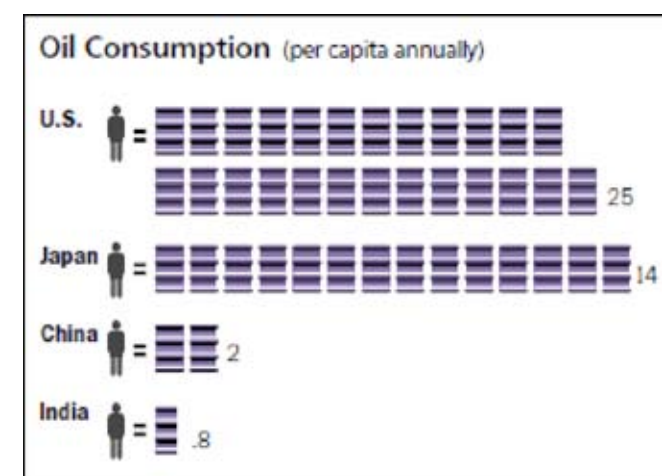
PEAK OIL FOR 'DUMMIES'



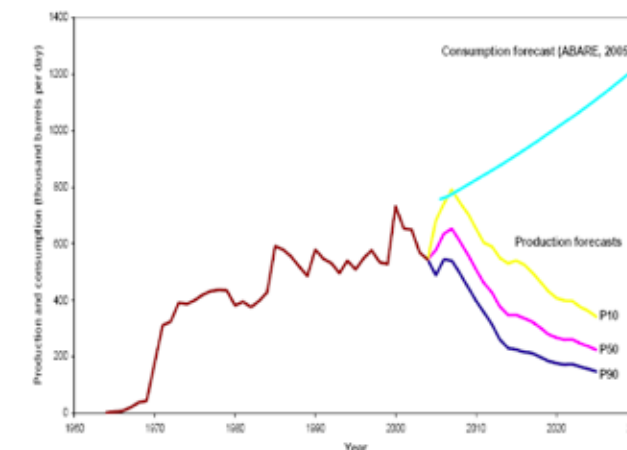
This policy is an updated version of one the STC launched in March 2004 and which Prime Minister Howard ridiculed in Parliament. At that stage, oil was trading at US\$35 per barrel and petrol in Australian cities was less than \$1 per litre. However, the data gathered over the past 4 years confirms the fears of the STC that the world is approaching, or is at, the peak production of crude oil.

We are NOT running out of oil. Existing reserves will ensure the world has oil for many decades, but it won't be as cheap as we have been used to and may have to be rationed for more critical tasks, such as growing our food or fighting wars.

The key to any solution to higher oil prices is a recognition that advanced economies such as Australia, USA and Japan use a vast amount of it each year, and require that the oil and gas we use is cheap so our economies thrive. Despite growing demands for oil from poorer countries such as China, Australia and other developed countries still use large amounts of oil, as this figure below shows.

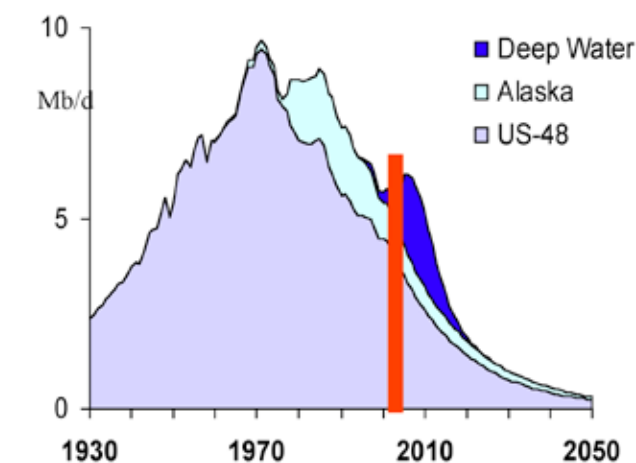


Of great concern is that a recent Australian Senate Inquiry found that Australia's own domestic oil production peaked in 2000 (see the figure below) and is already declining (see http://www.aph.gov.au/Senate/committee/rrat_ctte/oil_supply/int_report/index.htm).



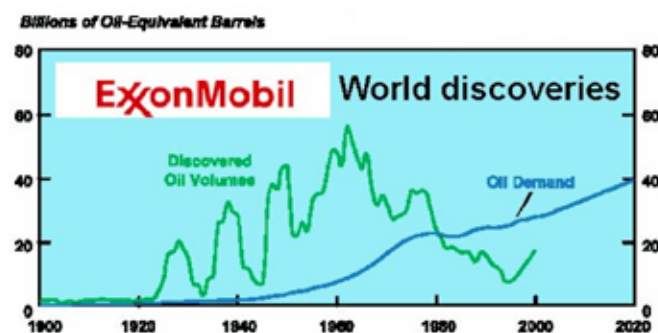
Geoscience Australia (2006), Submission by Geoscience Australia to the Senate Rural and Regional Affairs and Transport Committee Inquiry into Australia's Future Oil Supply and Alternative Transport Fuels www.aph.gov.au/Senate/committee/rrat_ctte/completed_inquiries/2004-07/oil_supply/submissions/sub127.pdf

Dubbed 'peak oil', the forecast switch to an economy in which demand for oil outstrips supply is well documented and is becoming widely accepted, by oil companies, geologists and government advisors around the world. In a similar fashion, the diagram below shows US production of oil which peaked in 1970. Thirty years later the US is still producing about 60% of its peak production output, but has never returned to an output of 10 million barrels a day, despite large discoveries in Alaska and the Gulf of Mexico.



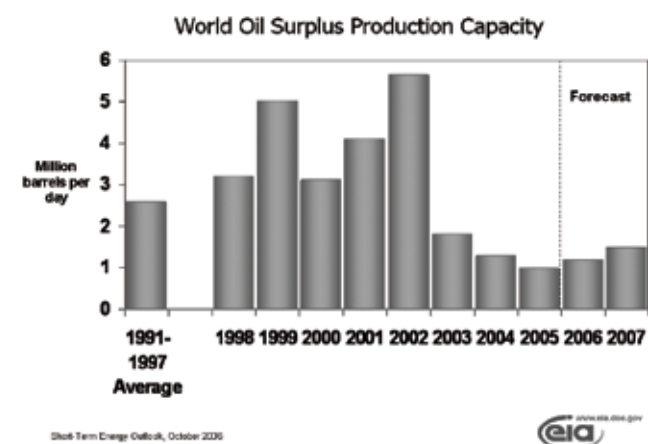
While Australia's oil production peaked in 2000, our situation is made worse because more than 60% of the petrol and diesel

refined in Australia comes from oil we import from other countries, leaving Australia reliant on these imports for our fuel security. Unlike nearly all OECD countries, Australia has NO strategic oil supply and there is only about 3 weeks of fuel stored in commercial refinery storage facilities.

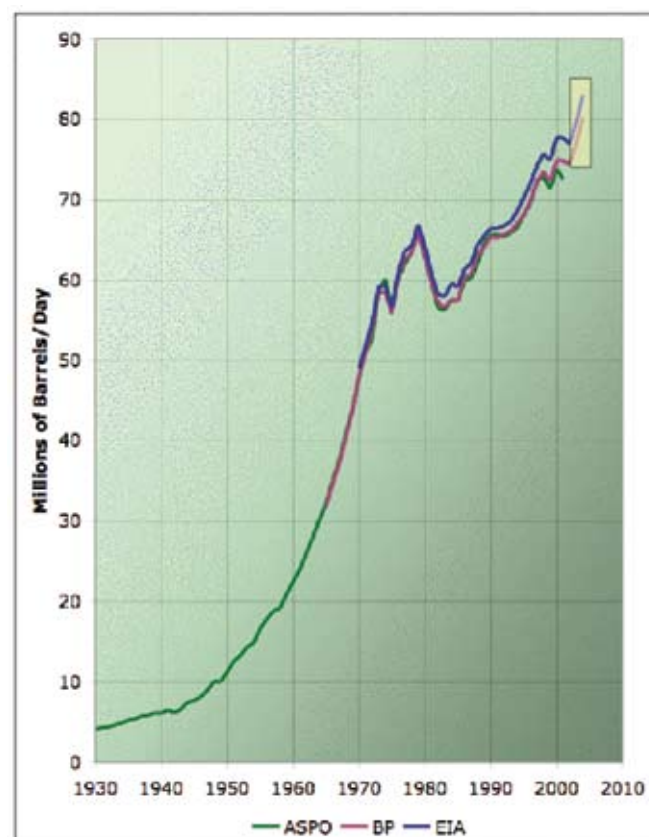


The key to an understanding of when peak oil may occur is the Exxon diagram above. This shows that annual world oil discoveries reached a maximum value more than 50 years ago, and since the early 1980s the world has been using more oil than it has been finding each year. Last year the world burnt 6 barrels of oil for every new one discovered.

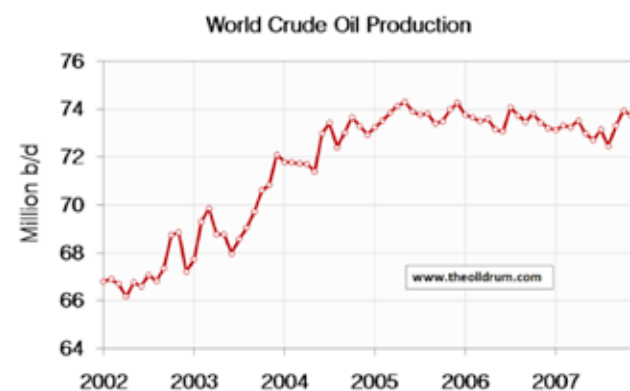
GLOBAL SURPLUS OIL CAPACITY (US Department of Energy, 2007)



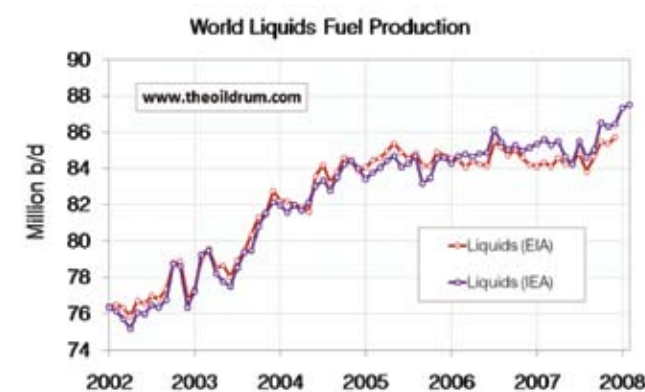
This lack of discoveries of new, easy and cheap oil fields is also reflected in the US Department of Energy figure above that shows that the world has very little surplus capacity to produce oil, over and above what is consumed. Other authoritative forecasts are much less optimistic about when peak oil will occur, predicting that the final decline in world oil production rates may start within 5-10 years, or indeed that it may have already started.



While in the early part of the Twentieth Century oil production was able to double each decade, (see figure above) data from the US Department of Energy seems to show that world crude oil production reached a maximum value of 74.3 million barrels per day in May 2005. World production of all liquid fuels continues to rise as the production of fuels from natural gas liquids, biofuels and tar sands increases.



Some people still don't think that peak oil is a reality. "At BP, our best estimate of when global oil shortages will begin to bite deeply is between 20 and 40 years", Greg Bourne, Regional President of BP Australasia, told the 5th Energy in WA conference in Perth in March 2003.



However, Matthew Simmons, a prominent Houston-based energy-industry investment banker and advisor to President Bush, addressed the International Workshop on Oil Depletion at the French Institute of Petroleum near Paris in May 2003. (www.PeakOil.net).

"Most serious scientists worry that the world oil supplies will peak [and then decline]. Peaking of oil can not be predicted accurately, but the event will occur. Peaking turns out to only be clear through a 'rear-view mirror'. By then, an alternative or solution is too late. My analysis leads me to worry that peaking is at hand, not years away. If I am right, the unforeseen consequences are devastating. The facts are too serious to ignore."

As early as 2003 mainstream outlets such as New Scientist ran cover stories on 'peak oil' (2nd August 2003). "Crisis looms – When demand for oil outstrips supply"

... we could be in for a big shock: we are going to run out of cheap oil. That's not oil per se, but we're approaching the point when global demand for oil will outstrip supply. It is not clear when we will reach this tipping point. The economists say we have about 35 years before oil production peaks, while geologists think we have only a decade. At present the geologists' argument is in the ascendant, having won the backing of some investment banks and oil consultants.

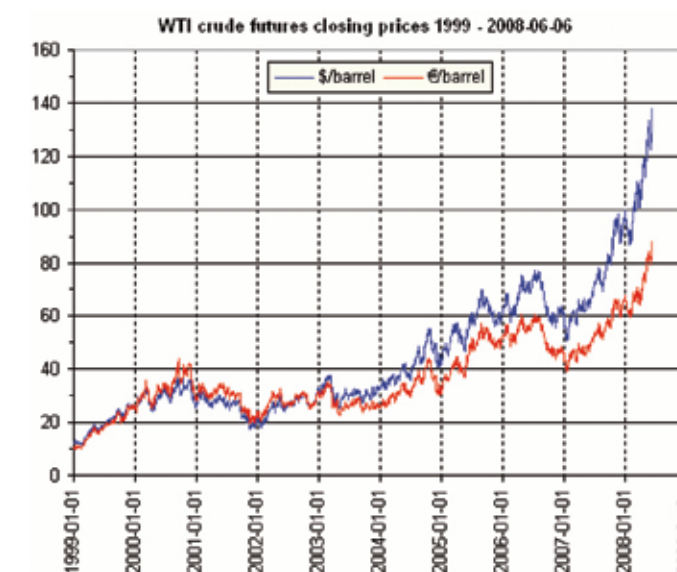
The Guardian also reported on peak oil (2nd December 2003) "Bottom of the barrel – The world is running out of oil - so why do politicians refuse to talk about it?"

Every generation has its taboo, and ours is this: that the resource upon which our lives have been built is running out. We don't talk about it because we cannot imagine it. This is a civilisation in denial.

Four years after this original story, The Guardian (22nd October

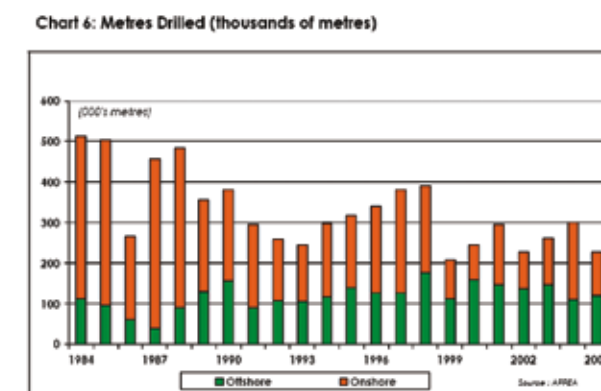
2007) reported that world oil production would halve by 2030 and a

Steep decline in oil production brings risk of war and unrest, says new study". The German-based Energy Watch Group will release its study in London today saying that global oil production peaked in 2006 - much earlier than most experts had expected.



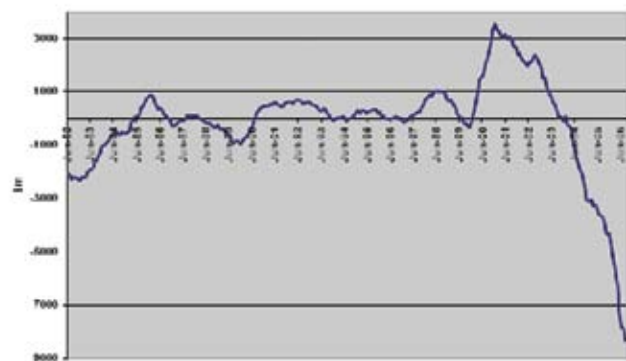
As shown above, the terminal decline of Australia's oil production has been well documented and continues in the face of dramatic rises in oil prices world wide.

While the price of oil has risen dramatically in the past 4 years since the STC published its initial policy, there has been little response in Australia in terms of additional drilling for new oil reserves (as economists have predicted), because geologists know that most of Australia's future hydrocarbon reserves will be for gas production, not oil.

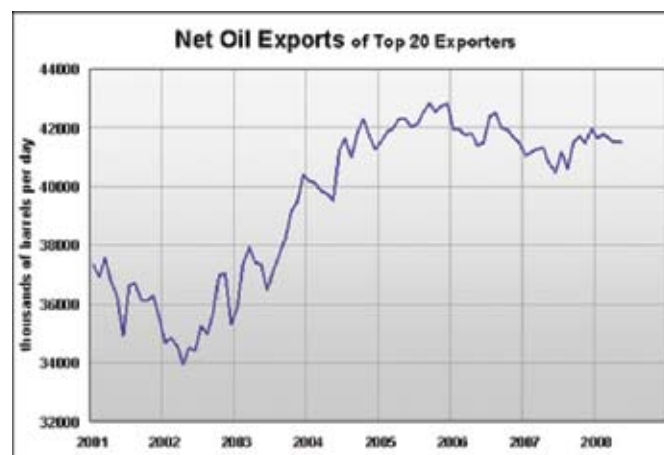


Australia's reliance on oil imports to fuel its transport sectors now costs over AUS\$25 billion per annum and has seen a massive turn-

around on its current account balance as we have moved from a net surplus (from the value of oil and gas exports over imports) to a massive deficit (see figure below).



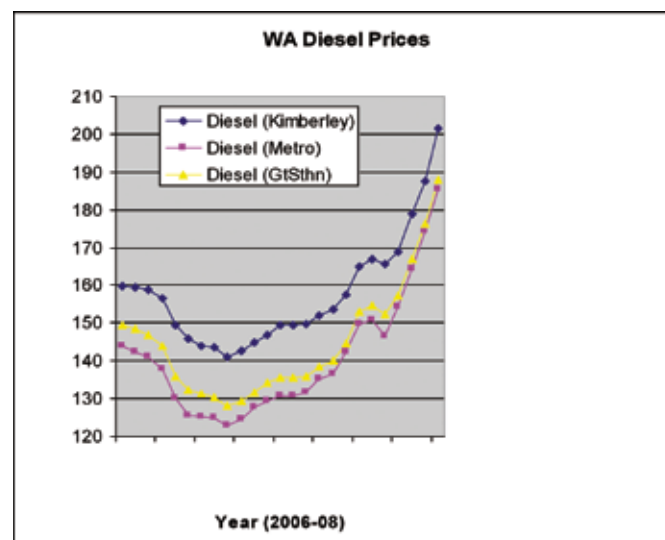
Our future reliance on imported oil, even if we can pay for it, will be within a very competitive international market, with declining global production and rapidly increasing demand from China and India. Many nations that were oil exporters in the late 1990s, like the UK and Indonesia, are now net-importers as production from their domestic oil-fields (such as the massive North Sea fields) are now declining steadily at 8-15% per annum. Net exports of oil world wide has declined since mid-2005 due to a slowing in oil production as well as a rapid increase in the internal consumption of oil in oil exporting countries such as Saudi Arabi, Russia and Kuwait.



This is a major issue for how we get around in Australia. Almost 80% of Australia's petroleum use is in transport- 55% of road transport fuel is petrol, 39% diesel and 6% is LPG (www.AIP.com.au).

Substantial alternatives to our current cheap and abundant petrol and diesel transport fuels are unlikely. It is NOT possible for Australia to produce biofuels in sufficient quantity to replace petroleum as the prime transport fuel. If all of Australia's current wheat production were converted to ethanol, it would provide less than 10% of our fuel needs. Most biofuels still require a lot of

petroleum for their production, refining and distribution as well as the diversion of land from food production. Hydrogen is an energy carrier, not an energy source. It requires large amounts of energy for its manufacture and distribution. For the foreseeable future, the vast bulk of the world's hydrogen will continue to be made from petroleum sources. The 'Hydrogen Economy' may well turn out to be just a pipe-dream like fusion power. Concentration on hydrogen diverts attention and resources from practical and immediate fuel conservation options.



The best way for us to survive is to change, now, our expectations, infrastructure and transport habits to encourage less oil-hungry modes. This approach has been also argued in the STC's Alternative Fuels policy launched in February 2007 (see <http://www.stcwa.org.au/images/altfuelpolicy.pdf>). This reduction in use of fossil fuels will also reduce Australia's CO₂ emissions, and help with our fight to reduce the impacts of climate change.

Adopted February 2004

Amended July 2008

RESOURCES

ABC 4 Corners (2006)- Peak Oil?

<http://www.abc.net.au/4corners/content/2006/s1680717.htm>

Hirsch Report (2005)- Peaking Of World Oil Production:

Impacts, Mitigation, & Risk Management

<http://www.aspo-australia.org.au/References/hirsch0502.pdf>

ASPO 6 Conference presentations (2007):

<http://www.aspo-ireland.org/index.cfm/page/presentations>

Presentations by Matt Simmons:

<http://www.simmonsco-intl.com/research.aspx?Type=msspeeches>

www.theoil Drum.com



OTHER STC POLICIES:

- Oil: Living With Less
- Alternative Fuels
- Walking
- Cycling

STC



SUSTAINABLE TRANSPORT COALITION

PO Box 3383, Perth Adelaide Tce, WA 6832

Email: stcwa4@bigpond.com Web: www.stcwa.org.au



SUSTAINABLE TRANSPORT COALITION of WESTERN AUSTRALIA

STATEMENT ON LIGHT RAIL

Summary Statement

Light rail is one of many forms of public transport, all of which should be considered on their merits and not supported simply to promote a particular mode.

What is light rail?

Light rail is basically a tram running on rails which are either placed in an ordinary road or may be in their own right of way. Light rail has a greater carrying capacity than conventional buses, less carrying capacity than medium or high capacity urban passenger rail. Medium rail is the type of rail we have in Perth.

Per kilometer, light rail is substantially more expensive to provide than buses, but less expensive than medium or high capacity rail.

Where rail may be appropriate

The role of passenger rail is to provide transport to larger numbers of people than can be accommodated by buses. If the demand is very high then rail may be more appropriate than conventional buses for two reasons. One is that, when the passenger numbers are large, there may not be space for enough conventional buses whereas rail can carry more passengers per 'vehicle'. The second reason is that rail is more energy efficient per passenger than buses to operate, as long as rail is carrying large numbers of passengers, because the rolling resistance of steel wheels on steel rails is less than that of rubber tires on bitumen; and rail has the ability to recapture energy from regenerative braking.

Where rail is inappropriate

Large numbers of passengers only come from dense urban areas, so it will always be very cost inefficient to provide rail (light, medium or high capacity) where the density is insufficient to provide the passengers. Perth is basically a low density city, with medium rail through most of the denser parts and through some very low density areas as well. Most passengers are brought to rail by car and bus, with modest walk and cycle levels.

Note also that, if a 'cradle to grave' view¹ of energy efficiency is taken, then urban trains use almost the same amount of energy as urban buses, and light rail uses only slightly less².

While public transport is usually more energy and green house efficient per passenger than the private car, this is only so where the public transport is reasonably well patronized: a car carrying 2 or more passengers has approximately the same fuel efficiency per passenger as off peak buses and trains³. So, again, there is the need for reasonable patronage for even conventional buses to be effective. While it may be possible for this to occur during peak periods, it is unlikely to be the case off-peak.

STC position in more detail

For Perth the STC position is that:

1. More public transport is needed as Perth's population grows, as the price of petrol and diesel increase, as the possibility of an oil shortage increases, and as people become more aware of the need to reduce greenhouse gas emissions.
2. More public transport alone will not solve the transport problem. Education programs (such as 'Living Smart') together with price, tax, and regulatory incentives are needed to encourage people to switch from driver only commuting, change to sustainable lifestyles, and live closer to their place of work.
3. There is a need for more sustainable transport in Perth. The STC's position is that 'sustainability' means not just environmentally and socially sustainable, but also economically sustainable. **For this reason the STC cautions against the promotion of any one form of public transport for its own sake, or even on solely environmental or social grounds. Rather all forms of transport should be considered on their environmental, social and economic merits depending on the area they are to serve.** Forms of public transport to consider should include mini-buses, ferries, conventional buses, large (bendy) buses, light rail, medium rail and, should Perth grow dramatically in density in future decades, even high capacity rail.
4. There are many forms of light rail. One called 'ultra-light rail'⁴ (but which is really just a modern tram) has regenerative braking and no overhead power lines. A few are being used in the UK but are not currently available in Australia.

¹ The energy cost to build the roads, railways, buses and trains as well as operate buses or trains on them, including the energy cost to extract and distribute their fuel

² see <http://www.gmagazine.com.au:80/features/82/train-versus-bus>, March 2007, quoting Manfred Lenzen of Sydney University who studied all public transport systems in Australia.

³ Lenzen notes that, on average, there are more people in cars off-peak, the roads are less congested, and buses and trains often operate at around 10% of capacity.

⁴ www.ultralightrail.com



Ultra-Light Rail in Southport, England

5. Bus Rapid Transit (BRT), a version of which is operating in Brisbane, should be considered in comparison to light rail.

BRT consists of large buses operating in segregated lanes with its own stations which allow 'off-board' fare collection: keys to providing greater capacity and travel speed than conventional buses. BRT is said to combine the quality of rail transit and the flexibility of buses. It can operate on bus lanes, high occupancy vehicle lanes, freeways, or ordinary streets. BRT can combine frequent service, passenger information systems, traffic signal priority, clean and quiet vehicles, high-quality passenger facilities, and integration with land use policies such as enhancing property values.

Dual mode BRT is a system that uses electronic guidance to combine the advantages and service quality of rail with the flexibility and low operational costs of buses. The electronic guidance can be used in full (to give direction and speed), partially (to give direction but not speed), or switched off (so the driver controls direction and speed).

BRT can be faster to implement, has a lower capital cost, and is more flexible than light rail for medium capacity requirements or areas that have a moderate degree of density. But BRT and light rail may have similar total costs over a 30 to 50 year period, according to a recent Queensland study⁵.

⁵ http://www.translink.com.au/qt/translin.nsf/index/gc_rapidtransit



Quito BRT (Quito is the capital of Ecuador, population approximately 2M)

- Directions 2031 & Beyond*
6. Urban planning should proceed according ~~Network City~~, with zoning for denser housing, commercial and industrial nodes along transport routes and especially near rail and bus interchange stations.
 7. All forms of public transport need to be accessed by the public, which is best done on foot or by bicycle⁶, so priority needs to be given to creating or enhancing pedestrian/cyclist friendly paths and secure bike parking around public transport pick-up and drop off points. This should be a key component of a future public transport policy for WA; ~~a policy that is badly needed.~~

*This is a modified statement, approved by the STC Committee 25/5/09.
(It replaces the 19/1/09 statement)*

The STC web page is www.stcwa.org.au

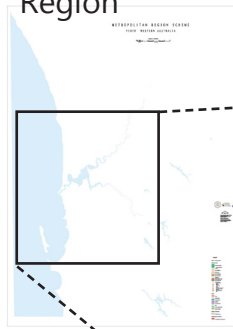
⁶ Walking and cycling are the only truly sustainable forms of personal transport available at present, and their use allows the high densities not possible if large parking areas are provided around train or bus stations.

Reasons to Invest in Rail

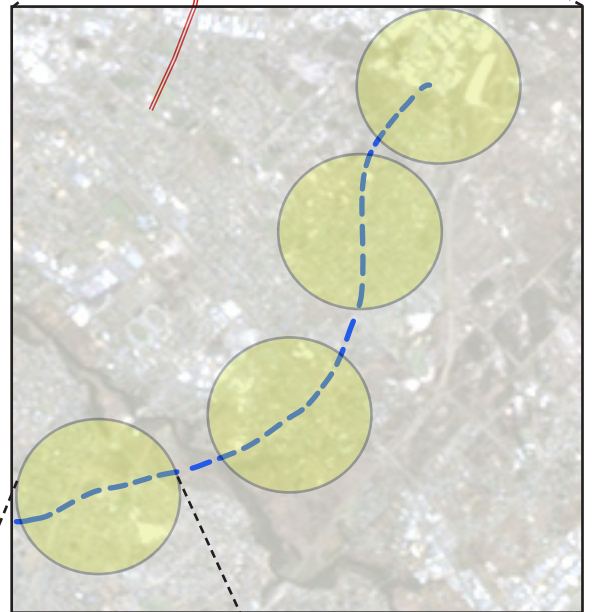
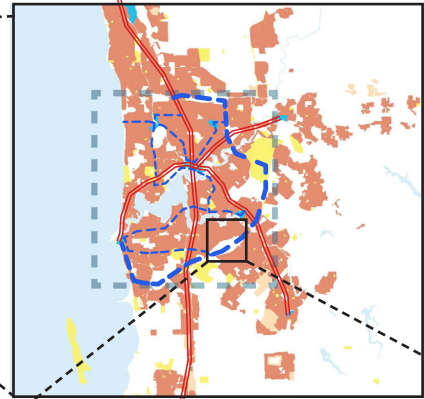
Rail Transit investments, aside from providing for regional trips by mass transit, can spur these benefits:

- redevelopment of ideally suited sites to house the changing demographics ,
- supply affordable housing in an increased housing stock,
- Avoid costs to personal and LGA pocket-books,
- lower GHG and VKT,
- Value Capture to pay down rail expense,
- task the current infrastructure, already built, to provide more service
- increase Global Competitiveness,
- improve local air and global atmospheric quality,
- be a globally significant shift for Western free-market car-based cities,
- be an incentive to build less single occupant vehicle infrastructure,
- gain social amenities such as public parks and swimming pools, and
- protect and maintain ecosystem services of farm and forest

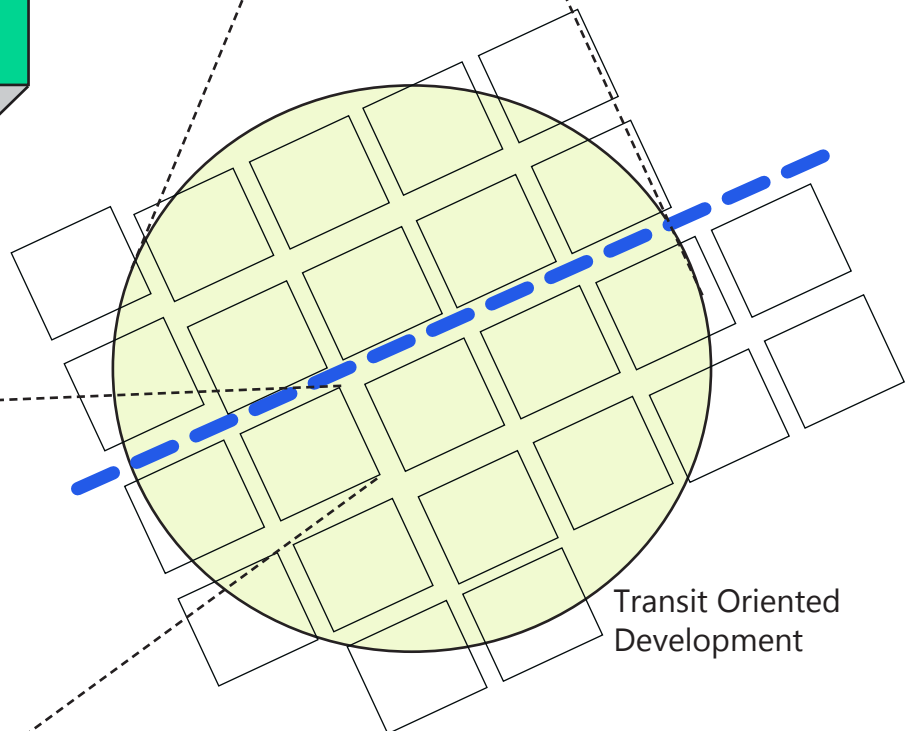
Region



Region with Transit



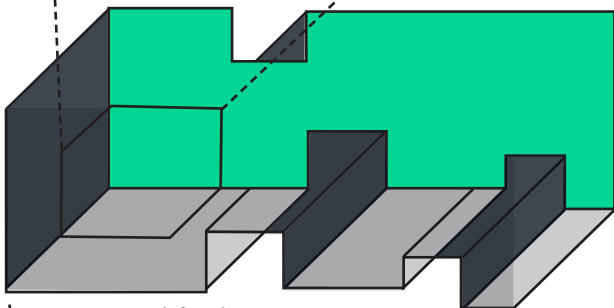
Regional Transit Line



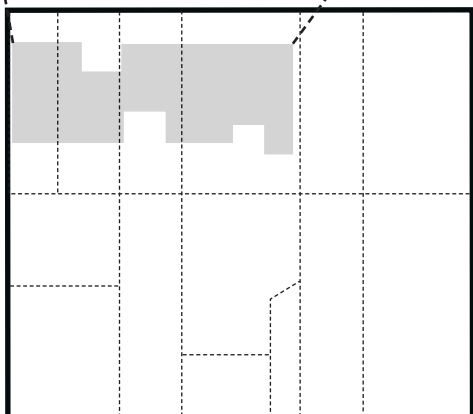
Transit Oriented Development



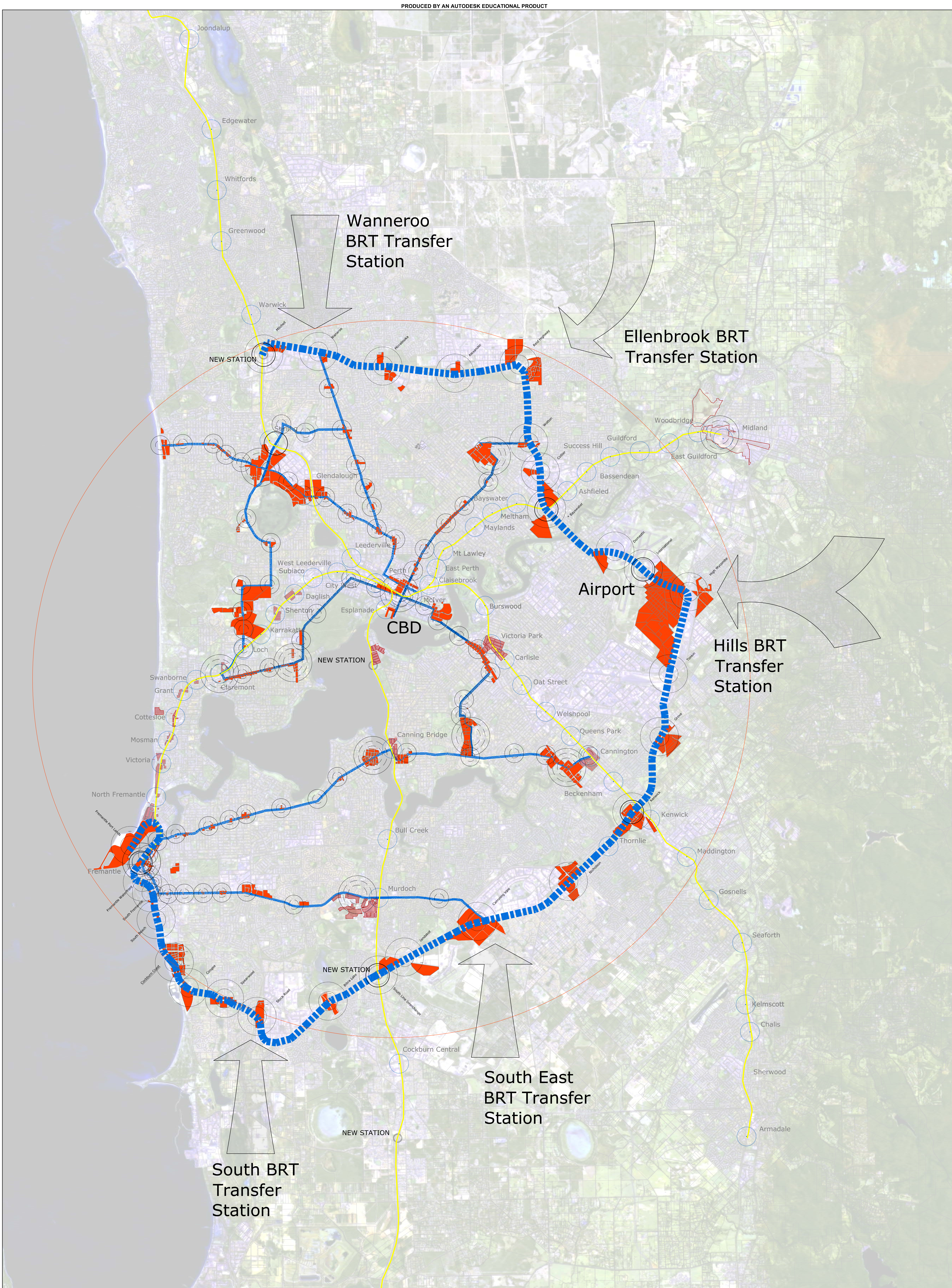
Condo with Resident



Mid-Rise
Redevelopment on
amalgamated lots

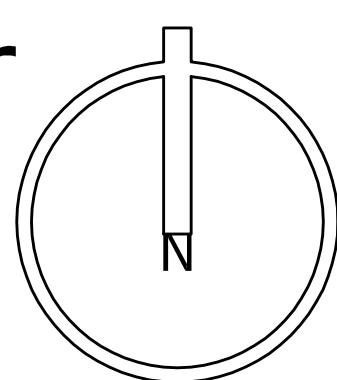


Cadaster with Lots



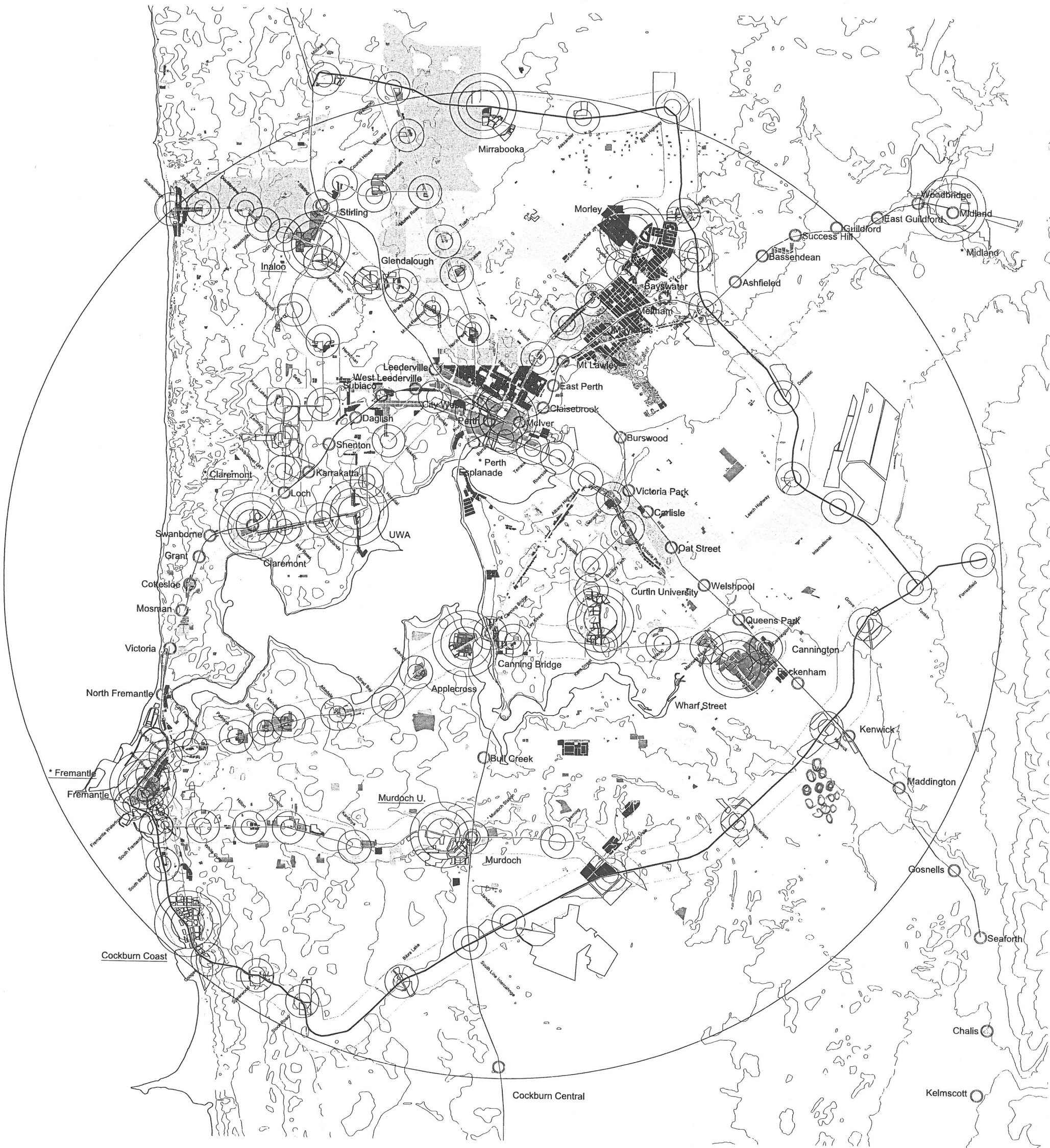
Perth Region 1:50,000

A0 Paper



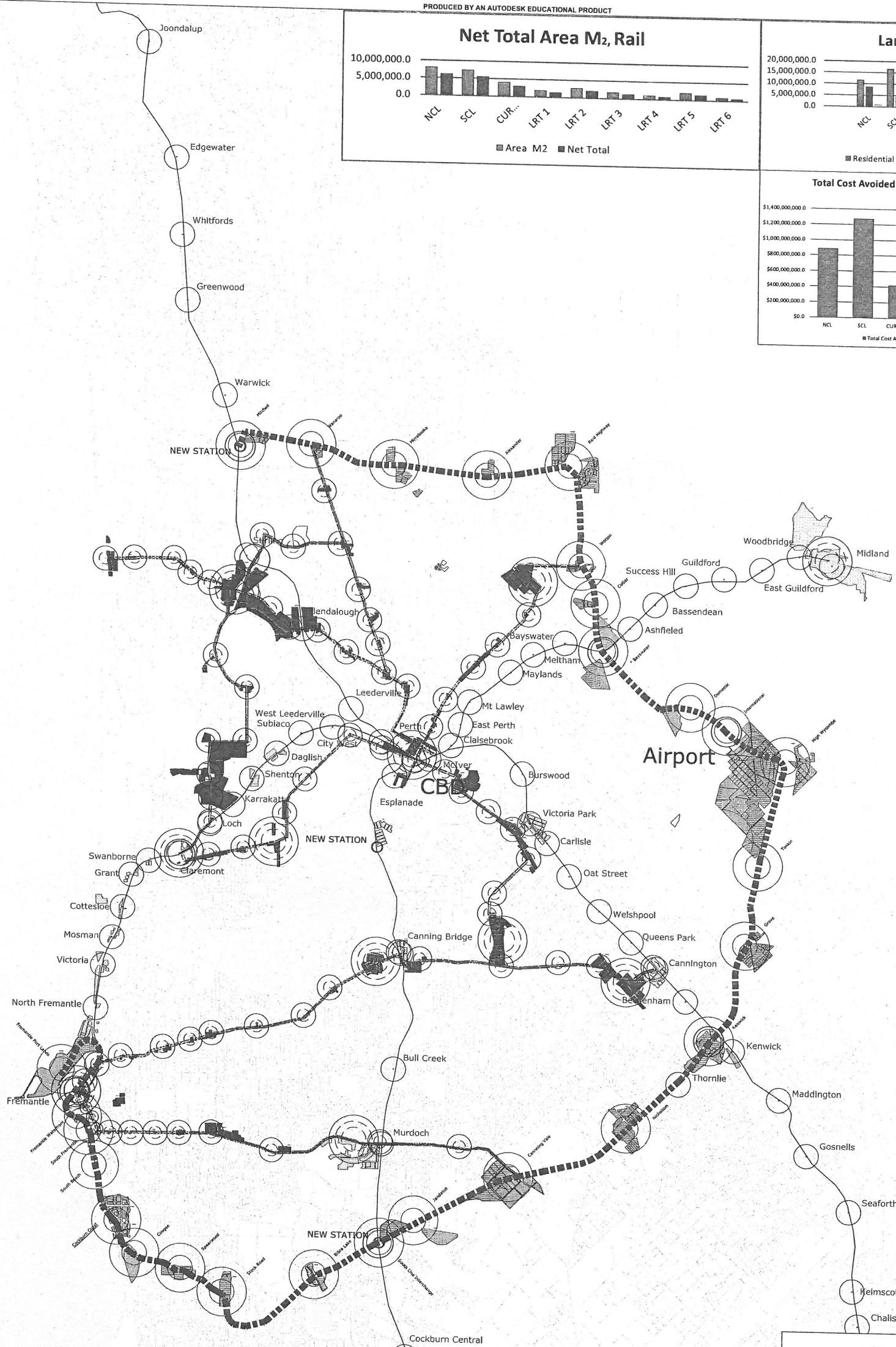
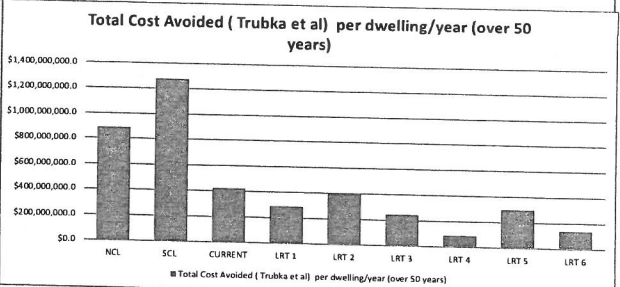
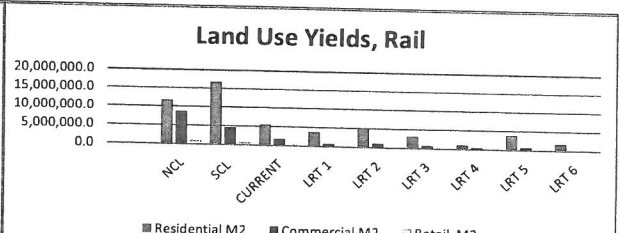
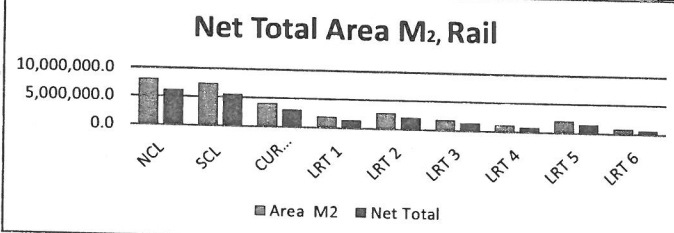
- LRT Lines Stage 1
- LRT Lines Stage 2
- BRT Lines
- Bus Feeder Lines
- Cycling Route Realignment
- Northern and Southern Ring Rail
- Current Heavy Rail Line

- New Rail Transit Station with Redevelopment Potential
- Current Rail Transit Station with Redevelopment Potential
- BRT Station with Redevelopment Potential
- Major New Network Connection
- NEW STATION ON CURRENT LINE
- Current Line Station

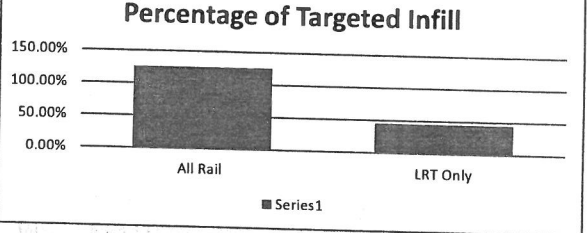
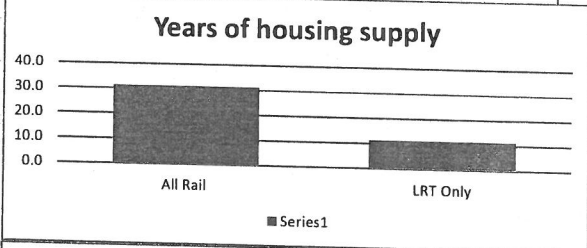


- Southern Circumferential Line
- Northern Circumferential Line
- Current Rail Transit Lines
- LRT Phase 1 Lines
- LRT Phase 2 Lines
- ▭ Redevelopment Opportunities

	Mixed Use		R80
	Commercial		R40
	Other		R30
	'Medium and High Density'		R25
	Institutional		R20
	Industrial		R10
	Residential		R5



NCL: Northern Circle
SCL: Southern Circle
CURRENT: Existing
LRT 1: Knowledge Arc
LRT 2: Northwest Lines
LRT 3: Applecross
LRT 4: Murdoch
LRT 5: Herdsman Connector
LRT 6: Morley Connector



Perth Region 1:50,000

A0 Paper



- LRT Lines Stage 1
- LRT Lines Stage 2
- BRT Lines
- Bus Feeder Lines
- Cycling Route Realignment
- Northern and Southern Ring Rail
- Current Heavy Rail Line

- Rail Transit Station with Redevelopment Potential
- BRT Station with Redevelopment Potential
- Major New Network Connection
- NEW STATION ON CURRENT LINE
- Current Line Station



Presentation to Senate Rural and Regional Affairs Transport References Committee on the role of public transport in delivering productivity outcomes

by Marion Fulker, CEO, February 2014

About the Committee for Perth

- An influential member-based organisation driven by Perth's business and community leaders
- A-political, advocacy group
- We promote and enable change that improves the cultural diversity, economic prosperity, sustainability and world-class amenity of Perth
- The Committee for Perth and our members are invested in the long-term future of our city
- Evidenced based
 - FACTBase – A collaborative research project between the Committee for Perth and the University of Western Australia
 - Independent research – examining key issues of relevance to Perth, including transportation issues such as public transport development & public transport funding models
 - Study Tours – Examining liveable cities internationally – including cities with high quality transportation systems in Australia, North America & the United Kingdom

Perth's Economy

- The minerals & energy resources industry is a major driver of Perth's growth & competitiveness.
- The importance of the sector has increased substantially over the past decade & is more important to Perth than any other sector is in any other city (with a locational quotient of 2.39 compared to Sydney's financial sector has the next highest locational quotient of 1.75)
- Retaining, building & diversifying Perth's mining & resource sector to establish the region as a global resource & energy hub is imperative for Perth and Australia's economic future.
- Our research indicates that Perth's connectivity will be central to remaining & building this competitiveness.

Source: Yet to be released FACTBase Bulletin 32 re economic specialisation, *Perth as a global minerals & energy resources hub, Perth as a globally connected city*

Connectivity = Competitiveness

FACTBase research bulletins indicate that:

- Connectivity is a central determinant of global city competitiveness.
- Workers in the mining sector seek high quality transport links to Perth CBD & to Perth airport.
- It is difficult to build sustainable economic growth without transport investment.
- Enabling connectivity requires an integrated transport agenda focused on multi-modal transport

Study tours have highlighted the need for integrated land use & transport solutions – transportation focused not just on moving people but on creating & enabling economic & development opportunities.

Independent research has confirmed potential for alternative funding mechanisms for public transport.

Source: FACTBase Bulletins 13, 21, 32, *Study Tour Findings 2008-2011*

Congestion in Australian Cities

- Australian cities are among the most congested in the world, despite having among the longest per capita road infrastructure (TomTom, 2013).
- Perth is the second most congested city in Australia, after Sydney (TomTom, 2013).
- Congestion is one of the two priority issues that CFP members have identified as most critical for Perth.
- Perth's population is projected to increase to up to approx. 5 million people by 2050.
- Without substantive measures to reduce vehicle travel demand in Perth research indicates that congestion will constrain economic growth*.
- International research also indicates that long periods commuting can have significant detrimental health impacts*.

Source: Yet to be released *Cost of Living: Congestion report* which can be forwarded to the Committee if required.

Congestion in Australian Cities

City	Population	Peak Period Congestion Delay	Road infrastructure length	Road infrastructure per capita (km per million)
Sydney	4.6	42 minutes	5,338	1,160.5
Perth	1.7	31 minutes	2,948	1,734
Melbourne	4.25	32 minutes	7,752	1,824
Brisbane	2.19	28 minutes	2,980.5	1,360
Adelaide	1.28	30 minutes	2,696	2,106
Los Angeles	13.05	48 minutes	10,478	803
Houston	6.18	33 minutes	5,900	955
Las Vegas	2.0	16 minutes	2,239	1,119
New York	19.83	30 minutes	15,166	765

Source: TomTom Traffic Congestion Index 2013; US Census; ABS Census

Need for integrated response

- Transport economics has established that to address congestion measures are needed to both increase supply and reduce demand.
- Increasing supply through road building increases demand for vehicle travel – ultimately leading to more congestion (the Fundamental Law of Congestion).
- Measures to reduce demand include providing high quality public transport; walk; land use changes (increasing accessibility between residential, employment & service areas); and road user charges (such as congestion charge).
- Multi-modal, integrated public transport has been shown to be most effective for delivering modal shift (i.e. people who have access to more than one mode of public transport are most likely to shift to public transport use).

Role of Federal Government

- Federal government has a clear interest in ensuring Australian cities remain competitive & economically prosperous.
- Without Federal funding, public transport projects that are essential to ensuring the long term competitiveness of our cities are being shelved, including Perth's MAX light rail project.
- Perth is a region of almost 2 million people that is projected to increase in population to up to 5 million by the year 2050.
- CFP fears that failure to deliver public transport infrastructure that keeps pace with demand will see Perth become the most congested city in Australia, with serious consequences for the regional and national economy & productivity and quality of life issues for Perth residents.