The Perth Rail Transformation: Some political lessons learned.

By
Peter Newman
Professor of Sustainability
Curtin University

In 1979 the WA State Government closed the Fremantle railway, as they did not see a future for rail in Perth. Today we have one of the most modern rail systems in the world with over 50 million passenger trips a year, and recently the Premier announced that the next phase would be a 'decade of light rail'. How did this transition occur, and are there any lessons for other similar car dependent cities in this transformation?

The Rise and Fall of Perth Rail (1881-1979)

The Fremantle-Guilford Railway began the Swan River Colony's commitment to urban rail, followed by an extension to Armadale. Then in the 1890s a tramway system was built in Perth and Fremantle – cities 19 km apart.

The city built itself around these rail and tram lines for the period up until the Second World War, and these are still some of the most desirable suburbs to live in.

With the advent of car-based planning – which happened across the world after the war – building development filled in the gap between Perth and Fremantle and spread north and south in a frenzy of low density urban sprawl. It was the age of the car and the Australian dream of a quarter acre block. It was given a boost by the subsidisation of housing for returned servicemen and a planning system built around the car.

In 1955 Perth's Stephenson-Hepburn Plan set in place a 50 year process, with a supporting governance structure, that became the basis for undermining Perth's railways. A Metropolitan Regional Improvement Fund (MRIF) was set up, based on a land tax that delivered special funding for regional infrastructure. The Stephenson-Hepburn Plan outlined a number of big roads and several railways to cope with Perth's growth. However the Government's interpretation of this was that the roads would be needed but the railways would not.

Thus by the 1970s the fund had been used to purchase most of the land for the big highways, whilst rail reservations to the rapidly growing northern and southern corridors were removed from the Metropolitan Scheme. 'Perth is a car city and will never need rail' a senior planner in Perth once told me. He proudly showed me how he had personally removed from the Metropolitan Regional Plan the two rail reservations to the north and had designed every major highway to be increased to 6 lanes and every freeway interchange to have a reservation bigger than those in any other city.

Perth thus launched into an era of planned car dependence. The suburbs rolled out to the north and south, eventually spreading the city to over 150 kms in length. The power of the Main Roads Department became legendary with its

'own funding' from the MRIF to purchase land for roads and to build them from Federal and State fuel taxes hypothecated specifically for road building.
The railways were left to gently decline under the WA Government Railways (WAGR). Old diesel carriages, some on 'bogeys' dating back to the 1930s, chugged along the three rail lines, with a touch of the romantic but mostly a lot of black smoke. Some effort was made to build a metropolitan-wide bus fleet through the Metropolitan Transport Trust (MTT), but they became a great supporter of the Main Roads and a direct competitor with the suburban railways.

In the early 1970s John Knox became Director General of Transport after retiring from the Shell Oil Company. Under his direction the 'reform of the railways' began, with both freight and passenger services in his sights. In 1978 a report entitled 'Rail and Bus Policies for the Fremantle Corridor' argued that the passenger rail system was no longer functional and should be closed. The Government of the day under Premier Sir Charles Court accepted that at least the Fremantle line should be closed and replaced by buses, which it did in September 1979.

The Fall and Rise of Perth Rail (1979-2011)

1. The Friends of the Railways

I was a young Lecturer in Environmental Science in 1979 and also an elected Fremantle City Councilor. My major area of research, since undertaking a post doctoral year at Stanford University in 1973/74 during the first oil crisis, was the impact of peak oil on transport and land use policy. In 1979 the second global oil crisis occurred and the price of fuel rose to record levels. It was not an auspicious time to close a railway.

The announcement of its imminent closure led to immediate community outrage, and I started the Friends of the Railways (FOR) with a committee of twelve. Our first task was to write a detailed rebuttal of the Government report on the closure, and we did this in May 1979 with far more analytical material than anything they provided. It attracted instant media attention: the two sides had been lined up for a titanic struggle and they had a story to write. By the time the actual closure came, a real social movement was underway to support an alternative approach to building a city. We showed that an era of oil scarcity was upon us and we had to begin building fast, high-quality electric rail to help us overcome the city's vulnerability to oil. It was an easy message to understand as the public was hurting at the petrol pump and many could see that there was a real risk that the city could not survive a prolonged oil crisis.

The rail closure led to a 30% drop in public transport patronage on the Fremantle corridor as the buses, despite being more frequent, were slower and less reliable. Meanwhile the campaign to bring the train back and to upgrade the whole system went into overdrive. Mass rallies attracted big crowds, a petition collected on rail stations was signed by over 100,000 people, we made a record based on the song 'Chattanooga Choo Choo', and we had continuous media coverage.

Soon we began receiving documents that 'fell off the back of a truck', showing that the State Government had suppressed WAGR reports that the cost of upgrading and electrifying the railway had been vastly overestimated by the Director General of Transport in his report on the future of public transport. The media frenzy over this was amazing and the only response from the government was to ask the Police to track down how it had been leaked. The retired railway engineer Darold McCaskill, then part of our FOR team, could only confirm to the media that the numbers in the leaked report were right. It had been a political decision - not an economic one - to close down the Fremantle line.

We then discovered that closing the railway was part of a plan to build a huge freeway through the Western Suburbs called the North South Coastal Highway. This freeway had been designed by the same planner who had boasted to me that Perth would never need a railway. He confirmed that the freeway would be needed to ensure that the SAS tanks in Swanbourne could easily reach the Garden Island Naval Base in Rockingham. Why? 'Because the Russians may attack us', he said. The 'Cold War' was used as a rationale for America to scatter its cities and build freeways, and it appears to have motivated Australian planners too.

Now it was clear that the city faced a major choice: freeways or railways? Continue the building of a city based on cars, or start to provide a more balanced city with quality rail down each corridor. The options were clear.

As we moved closer to an election the government began to panic. A big FOR public meeting was planned for the Cottesloe Civic Centre, halfway along the Fremantle Line and in the conservative heartland; guest speakers would show further leaks and outline the new vision for Perth based on a rail revival. One hour before the meeting was due to start, the Civic Centre was filled by the Liberal Party 'bussing in' members from across the city. No FOR supporter could get in and the only speakers were organised by John Knox. A Liberal Party friend of mine whom I met outside the Centre said with shame that he was there because he was asked to come, but that we should not give up at any stage as we were right. The media portrayed it as a desperate act and indicated that the moral battle was now over.

We always expected the Government to change its mind, but the leader of the debate and Member for Cottesloe Bill Hassell was adamant that the line must stay closed. The ALP Opposition then announced it would support the line's re-opening and took this to the election in early 1983. The ALP won with a large swing, including a 14% drop in Bill Hassell's primary vote. Almost immediately the train line was re-opened and the magic 30% patronage along the line returned.

The first step in the Perth rail revival had been achieved.

2. The electrification and northern extension of the heavy rail

If politics had been the driver of the decision to close and then re-open the Fremantle railway, it now had to take a step back to allow experts to assess future options. A State Government committee under new Director General of Transport John Taplin was set up to examine the electrification of the rail system. The important step was taken to use new consultants and to include Darold McCaskill on the Committee. He was able to constantly question the previous conclusions and ensure that the new consultants did not stack the numbers in the way that the previous consultants had done. In addition, a young public servant Stuart Hicks was given the job of pulling the report together for a government eager to do more on rail rather than less – a very important political context.

In 1985, much to my surprise, I was asked to work in the Office of the Minister for Transport, Julian Grill. I leapt at the chance and thoroughly enjoyed this opportunity to get inside the politics that ran the state's transport bureaucracy. The power of the Main Roads Department and its close links with the Department of Planning became very obvious. Main Roads seemed impregnable. But we had an important ally – the public – who wanted more and better public transport as the top priority transport policy. This was reflected in market research by ALP politicians through the party machine, and the issue also received extensive media coverage.

Thus, when I received a telephone call from Stuart Hicks to say that the electrification report was now showing it would be cheaper to electrify the rail lines than to close them down, I reported to a delighted Minister. 'So it really was a politically driven exercise!' he said. 'But,' he continued 'what are we going to say when we announce this tomorrow as the journalists are going to say – what about the northern suburbs, that is where the real transport problem exists?' My reply was to suggest that: 'You should announce that you are not only going to electrify the present rail system but you are going to examine whether rail could be a solution for the northern suburbs'. He grinned.

The next day the Minister sat at the press conference with Stuart Hicks and proudly presented the findings of the electrification study and suggested that, although Cabinet still needed to receive the report, the railways were most likely to be electrified. 'But what about the northern suburbs?' was the first question. 'Well, we are going to examine that next and see if they can also have an electric rail line' he beamed. Stuart Hicks visibly spun on his chair. 'What are we in for next?' he was thinking, and well he could ask.

The next day the press coverage was all about 'Northern Suburbs Rail' and the dye was cast for the next stage of the Perth rail revival.

Cabinet did decide to go with the electrification, and with a study of the Northern Rail. There is something rather remarkable about taking a Cabinet Minute through the system of government on a subject that just a few years before you had considered an impossible dream. It changes you – its hard to be cynical

about politics after that. The system of democracy, the role of civil society (including academia) in setting vision, the commitment and energy of good public servants and the significance of good political leadership – they all became something to really believe in.

The policy to electrify and to study the possibility of a northern line became a part of the ALP Platform for the election looming in early 1986. Despite the intervention of lobby groups who even won over a key advisor to the Premier and who tried at all costs to literally derail the project (including telling me that I must not back this stupid policy), this policy commitment made it through the election and the ALP were returned with a significantly increased majority. The increase was especially evident in seats along the northern corridor that had campaigned heavily on the need for a train line along the congested Mitchell Freeway.

Shortly after the 1986 election the recently retired former Member for Cottesloe Bill Hassell made a trip to Los Angeles. On his return he spoke to me at a function about how he had been totally wrong about the railway and if the future was to be like Los Angeles then he wanted more trains. He also saw that politically it had been the undoing of his government.

The Master Plan on the electrification process of the three existing lines was able to get underway quickly, but it still took until after the 1989 election before a final commitment was given by Cabinet (when again I was working in the government, this time in Premier and Cabinet). Contracts were let for the electrification of the three lines and the purchase of new electric rail cars, and the new trains commenced operations in September 1991 for the Perth Royal Show.

It was a very happy moment to see those modern, comfortable trains move swiftly and silently along the track, sucking electricity and not oil.

The Northern Suburbs Rapid Transit Study (NSRTS) was another story. After endless delays as the Department tried to suggest to the Minister that it was not possible to build a railway into a whole corridor built around the car, the Minister agreed to let the study go ahead as a Rapid Transit study not a Rail study. The public servants did a series of studies along the corridor to survey attitudes to whether a bus-way would be acceptable. To them it was far superior in low density suburbia to have buses roaming the suburbs and then joining seamlessly onto the bus-way down the middle of the freeway. The surveys thus asked: 'If you could have a bus service that was far more frequent than a rail service and just as fast and comfortable as rail, would you prefer it?' Unfortunately for them the majority said 'no'. They wanted a rail service.

Undaunted, the consultants were appointed to study whether a busway or a railway would be best. However, they had purchased the rights to a technology for making a bus-way faster through being driverless (eventually built in Adelaide, as the O-Bahn). Their report was therefore clearly written to favour the busway. Leaks about this were beginning to appear and the public in the

northern corridor was not happy. At one stage the Minister was receiving 200 letters a day in support of a rail system in the Northern Corridor.

The new Minister for Transport rang me at Murdoch University, where I had returned to work after the 1986 election. 'We want you to have a look at the NSRTS' he said, 'its not saying what we would like and we wonder if the numbers are a bit funny'. I asked that we bring in some global experts, and thus the Expert Panel to be chaired by me was appointed, consisting of David Howard the CEO of Tyne and Wear Transport from the UK and Professor Vukan Vuchic, Professor of Transport Engineering from the University of Pennsylvania. Our report in October 1988 did in fact find the numbers were very strange and made the following recommendations[i]:

1. *Perth has a window of opportunity to complete the basic public transport infrastructure of a modern city.*

2. *The best option for the Northern Suburbs would be a rail trunk line with bus feeders because:*

    a) *Rail provides the best quality and most efficient type of service for a trunk line and would this have a greater capacity to attract passengers.*

    b) *Projected patronage in the corridor is sufficient to justify rail construction.*

    c) *A rail line would be a logical extension and complement to the three other lines being electrified.*

    d) *Rail had the potential to develop sub centres, in particular Joondalup and Innaloo.*

    e) *Bus feeder services can be directed across the corridor linking local facilities such as Family Centres, shopping areas, beaches and other recreation areas, schools and employment centres, i.e. the Rail –Bus combination provides a much better social function than just bringing commuters to the CBD as in the busway option.*

    f) *Rail is cheaper to operate and this offsets its higher capital costs and in time leads to a continuous saving.*

3. *Initial cost analysis suggests the rail option would be: $124m capital costs (cf $145m by Travers Morgan), $5.8m less in operating costs annually than the bus option. Thus the difference between rail and bus ($45m) would be eliminated in 12 to 15 years with savings from there on.*

4. *Further savings could be obtained if a more comprehensive bidding system were provided by tenders involving land development and financing. It could be anticipated that capital costs for the rail option under such a comprehensive bidding system would be considerably reduced.*

5. *To maximize financial return through land development the Northern Line could be redirected into the Innaloo Regional Centre as well as the the Joondalup Regional Centre after detailed consideration of the alignment.*

The Expert Panel findings were accepted and the Cabinet quickly decided to go with a rail option for the Northern Corridor. A Master Plan driven by Stuart Hicks was then set up in the next year based on experience with the electrification work. It was taken to Cabinet while I was still working there in 1989. Despite all the work done the bus-way enthusiasts had still tried to undermine the Minister for Transport and had gone to two other Ministers to show that a busway would be cheaper and better. After three long Cabinet meetings (where I - along with Jeff Kenworthy who had come to work with me - presented the arguments) it was passed. It was quite a battle right through to the end. Work began on the new line in 1990 and it was opened to the public in March 1993.

The same debates about bus versus rail continue to this day. In so many cities we hear 'anything a train can do a bus can do better and cheaper'. 'Buses are flexible and trains are inflexible – people want flexibility'. At the end of this debate I wrote this, which I still believe strongly[ii]:

> *'In transport planning the dominant paradigm in the English speaking world has been set by road planners enamoured by the "flexibility" of cars and buses. The political power of the road lobby was then able to establish institutionalized processes which rolled out the bitumen and built our cities around it.*
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> *The change to this paradigm and the process it spawned has not come from the transport theorists (particularly in the US) – they continue to write academic papers about wasteful rail transit decisions like BART and METRORAIL and MAX that politicians went for against their advice, meanwhile the politicians are faced with a populace clamouring for extensions to the rail service.*
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> *Out on the streets the people are faced with a traffic system that is getting out of hand and it is obvious to everyone that building more roads is only a temporary solution as they fill so quickly. Buses are a flexible option to the car but they just get caught in the traffic. A sidelong glance at Los Angeles convinces most people that a limit has to be expected on motorisation and road solutions.*
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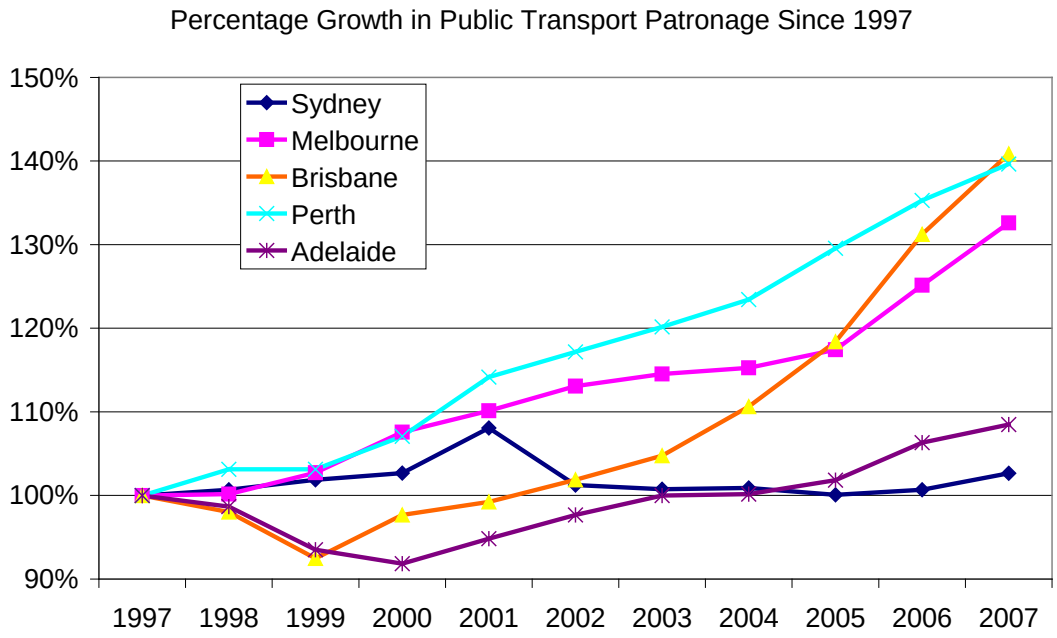
> *As well the concept of flexibility makes little sense for the public when it just leads to a confusing array of bus routes and uncertainty about timetables.*
>
> *Actually flexibility is not always a desirable feature of transit systems; permanence, predictability and reliability of service are major positive characteristics of transit systems.*

Evidence for this has always been available whenever rail services are closed and replaced by buses and new "more flexible service" rarely attracts more than half the pervious patronage.

Perth has set a strong precedent in Australia by going for a fixed rail service fed by buses with precise interchange times (the continental European solution). Across Australia the decision was met with scepticism by transport professionals but has slowly seeped into political processes. Community activists and transport groups have gained new heart and provided new and compelling cases for extensions to the rail system in almost all Australian cities. "If Perth can do it surely any city can", is now the cry.

The Northern Suburbs railway is now carrying the equivalent of 8 lanes of traffic at peak times. The growth of the Perth rail and bus system was quite spectacular through this period (see Figure 1 below which shows how Perth led the way in the public transport revival that has swept across Australia in recent years).



The census data between 2001 and 2006 show that the increase in car use for the journey to work in Perth slowed considerably and was just 14% over this period, while public transport grew 33% (48% for trains) and the other sustainable transport modes grew similarly (41% walking, 21% biking).

The main political issue for the past decade has been the question of whether the line can be extended. In 2004 it was extended through to Butler and in 2010 the Coalition Government announced it would extend the rail system from Butler to Brighton – making the rail transformation into a bipartisan process. The 7.5 km extension is to cost $241m (more than the 33 km service to Joondalup and an indication of how rapidly construction costs have risen in the boom state). A press release from the Minister Simon O'Brien acknowledged the importance of building rail, announced the integration of 10 new bus services with the line, and

identified the potential to build Transit Oriented Developments (TODs) around the stations. All of this was at the heart of the original Friends of the Railways approach nearly 25 years before.

The building of more dense centres around stations has happened in Perth since the rebuilding of the rail system. Subiaco and East Perth are perhaps the best known TODs in Perth and bring people from around the world to view them. They would not have happened without the new electric rail servicing them. But perhaps more powerful a model is Joondalup which has begun to demonstrate its potential to be a regional centre since the train went through into its centre. When you see medium density housing and mixed use being built 33 km from Perth's CBD you know that the European model is working and that a less car dependent city is emerging.

But the story was not over. Once the Northern Suburbs line was up and running as a model for all Australian cities, the Southern suburbs of Perth wanted one too.

3. The Southern Rail

In 1989 Premier Peter Dowding took a helicopter flight over the southern suburbs and, when interviewed afterwards, said that he envisioned at some time in the future a passenger rail system linking Perth and Mandurah. Planning began, with the pressure from Fremantle to have it directed south from their city rather than directly running to Perth.

A major reason for going south via Fremantle was that the Narrows Bridge was never built to standards that would allow a railway to be built on it.

Richard Court was Premier of the first Coalition Government after the rail transformation had begun. He governed from 1992 to 2001 and demonstrated the new bipartisan approach to rail. In his time the planning for the Southern rail shifted from being Fremantle-oriented (based on light rail links down the coast) to being built along the Kwinana Freeway, just as the Northern Suburbs line had been built along a freeway. This ensured that the Southern line was a fast, direct heavy rail link to Perth. I had been involved in all these public discussions and considered it necessary to complete the fast heavy rail system down each corridor before considering a slower and more local light rail system.

In 1999 the decision was made to plan the Southern Suburbs Rail System with as few stations as possible so the train could run at 130 kph (maximum speed). I welcomed the decision and praised the bipartisan support for the next phase in our rail transformation. However, I considered it a second best option in terms of route as the Government had gone for a fast rail from Mandurah down the freeway to the edge of the main suburban area and then it followed a freight line doing a 'dog-leg' towards the Armadale line. This added an extra 14 minutes to the route and so instead of completing the Perth to Mandurah run in 48 minutes, it would take 62 minutes. This meant the train would not be competitive with cars that average around 1 hour (though much longer at peak time).

The old chestnut of the Narrows Bridge was often trotted out as the rationale, but this excuse was slowly dying as the decision to double the Narrows Bridge was made in the mid 1990's and the expanded bridge was opened in 2001; the opportunity to enable a Southern rail line was built into the specifications and was a major reason I never opposed this major increase to Perth's road capacity. I could see that the chance for a real rail option south was emerging.

Why then would such a decision be made to avoid the direct route into Perth?

The background politics was not hard to unveil. The bus lobby was still active. They had managed in the 1990s to have a busway built down the Kwinana Freeway from the central Perth Bus Port to the edge of the southern suburbs. This had been an effective way to get buses through the congested freeway and was highly valued. There was no possible way that they were going to give up their precious piece of infrastructure. The new rail line had to go around the city. They lost the bus transit battle to a fast rail line to the north but they were not going to lose the south.

The 2001 election was mostly about stopping the logging of old growth forests and the Southern Rail stayed as a bipartisan approach incorporating the 'dog-leg' route. However the Shadow Minister Alannah MacTiernan was worried about this and spent hours on the phone with me discussing how the direct route could be better rationalized. When the ALP was re-elected and Geoff Gallop took office the fight for the direct route began in earnest.

The bus lobby came to see me to show why their bus-way had to remain and why the rail route should be made underground from Jandakot enabling a much more 'visionary alternative' – but in the process making it a $10 billion option instead of a $1.2 billion project and looking out on darkness instead of the spectacular rail views of the river and city now so greatly treasured! Making the rail option too expensive was not the first time a rail project was lost to a cheaper bus option, and that was certainly their intention.

After six months of constantly instructing her officials to go back and do the work again, Alannah MacTiernan was able to announce that the shorter, direct route was preferred and that a Master Plan would now be drawn up with the rail going down the freeway. The busway would remain on the freeway between the city and Canning Bridge. All other stations would prioritise bus interchange facilities as in the Northern line.

The detailed Master Plan was drawn up and passed through Cabinet whilst I was in Premier and Cabinet working on the State Sustainability Strategy. It was a remarkable trifecta of opportunities that found me walking the third phase of Perth's rail transformation through the corridors of power as I had in the previous two phases – the Northern line and the Electrification project. I must admit that this third phase was a lot easier for me than the others, as explaining the popularity and effectiveness of rail was now obvious and Alannah MacTiernan had done most of the internal work with Cabinet.

The Southern line capital cost and the previous rail debt was given a Christmas present when Cabinet decided to pay out this debt through the sale of the Alinta Gas company that had been owned by the State Government. This will guarantee a long term future for rail in this state. When announced, there was no reaction to say that this should have been given in tax relief or something else more tangible. The public of Perth considered this to be sensible use of State funds.

With the release of the Master Plan, the Southern line hit a snag with its new direct route – it had to come through the front end of the city and tunnel under the city to link into the Northern line. This meant that the City of Perth had to be involved in the detailed work and their history with rail had been almost completely negative. At every step in the rail transformation I found the City of Perth obstructive; they could never see the value of a rail system to their city (it now brings 100,000 people a day to the City and the younger staff and councilors are very supportive of rail). The Mayor at the time, Peter Nattrass, was particularly adamant that the previous route around the back of the city should be preferred, and if not the unsightly rail line should be buried (apparently the freeway interchange was not unsightly). At the same time an anti-rail group began to say that the tunnel under the city was impossible to construct as it was through soft sand. Both of these issues were resolved through the creative work of Stuart Hicks, and the opposition faded away.

The contracts for packages of work began to be let in late 2003 and construction began in February 2004. Intense media scrutiny began and each step of completion was marked with considerable public interest, especially when the tunnel under the city was completed ahead of schedule.

In early 2005 the State Government election was held and an anti-rail group funded by some mysterious donors tried to show it was a dreadful waste of public money. They targeted Alannah MacTiernan in her seat, claiming that she was a threat to the future financial status of the whole state. Internal market research by the ALP showed that the train was in fact the 'number one positive' for the government. It was no surprise therefore to see the government returned, and Alannah MacTiernan increased in her majority by 14%.

Public support for rail in Perth has never been in question, and it has continued to grow as the Perth rail transformation has unfolded.

The Southern line was indeed presented as a Christmas present to the southern suburbs when it was opened on 24th December 2007. The 23rd was a remarkable day of celebration and one of the great days of my life, as we travelled down to Mandurah with the official first train and watched people all along the line cheering for their train.

The Southern Rail line was an immediate success. Within a year it was carrying 55,000 passengers a day when the buses in that corridor (including those using the busway) carried just 14,000. The final cost of the railway came in at $17 million per km, which compares very favourably with infrastructure

developments like the widening of the Great Eastern Highway at $50 million per km. Almost immediately the Southern Railway began, plans were developed to build TODs at Murdoch, Cockburn Central and Mandurah itself. Jeff Kenworthy was able to convince the City of Mandurah how a new dense city-centre could be built around the station after several of his presentations to business and community groups showed the viability of a TOD in that area.

So what can be done after that? Obviously a car-based city cannot be rebuilt by just providing 172 km of electric rail – though it's not a bad start.

4. The 'Decade of Light Rail'

The opportunity to build light rail has always been an intriguing and tantalising thought for myself and others in Perth. I have done several plans for how light rail could work in Fremantle, my hometown, and other potential routes across the suburbs. But in reality light rail would not have worked in the long corridors of Perth until a substantial, fast, heavy rail system was in place down each corridor. Bus linkages were another important part of that transformative process.

Now Perth faces the new challenge of increasing the capacity and speed of these linking services. As well, there are new cities and sites of intensive development growing within the suburbs, including Stirling City Centre, Mirrabooka, Fremantle, Cockburn Coast, Curtin City and the UWA / QE2 Medical Complex precinct. They all need to grow, but their road and parking capacity is already at a limit. For these places light rail is the answer. I produced a report in 2010 entitled 'The Knowledge Arc Light Rail: A Concept for the Next Phase of Public Transport in Perth',[iii] to show how an LRT could be built linking the key knowledge centres in Perth (running for 21 kms at around $15 million per km). State government agencies have now provisionally planned LRT services for Cockburn Coast and Stirling, in order to ensure that these major urban regeneration projects work.

Not only is light rail able to carry around 20,000 people per hour compared to buses on a dedicated route at 5000 per hour, but the LRT solution is seen as the catalyst that can make these developments happen. It is the carrot for developers and financiers because it is fixed and not flexible, it brings people not cars, it is quiet and without fumes, and it brings a quality to any city that acts as a magnet to young and old alike.

The State Government began planning for the next phase of public transport in the last days of the Carpenter ALP Government in 2008 and this was continued under the Barnett Government that replaced it. After several iterations it was seen to be impossible to plan for the next 20 years in Perth without considering light rail – only with a light rail option could Perth have a good future. The Public Transport Plan therefore makes a big story of how light rail can be built as the solution to Perth's growth, with its attendant need for better interconnection across corridors, and the imperative to address multiple economic, social and environmental issues in the transport system.

At a Chamber of Commerce and Industry seminar in Perth on 1st December, 2010 the Premier Colin Barnett was asked: 'What will be the legacy of Perth's current mining boom?' He answered that 'Perth will have a decade of light rail'.

The Politics and Economics of Rail – experience on Infrastructure Australia

An extraordinary experience in my recent life has been the privilege of serving as a member of the Advisory Council on Infrastructure Australia (IA). In 2010 IA advice was to fund $4.6 billion of urban rail, 55% of the overall Federal Government infrastructure recommended. This largesse went to Adelaide, which is seeking to do what Perth did and electrify and extend its rail system (both heavy rail and light rail), to Melbourne to enable it to double the capacity of its rail system, and to the Gold Coast for a new light rail. Planning studies to enable Sydney and Brisbane to double their rail capacity were also provided. Perth did not apply as it has already done what the others were now planning to do: to substantially upgrade their rail systems. It is a long way from the activist who wanted to save a rail line in 1979.

The basis of these decisions was an extremely detailed assessment process that examined first the strategic goals against national goals, then looked at benefit cost ratios including how to factor in wider economic benefits, and then finally how to provide the governance or deliverability of the infrastructure. In each case the rail projects met our criteria and demonstrated clear strategic goals, good economic benefits and deliverability potential. One of the key reasons for the economic benefit is that 'agglomeration economies' are now recognised. These are the productivity benefits that occur in higher density developments built around quality rail projects – a notion that goes right back to the early days of the railway campaigns but now can be demonstrated in economic theory and practice.

IA will continue to consider such rail projects and to show particular interest in how TODs and Public Private Partnerships (PPPs) can help to build these systems as rail systems now mainstream, essential infrastructure for any modern city One of the ways to finance the infrastructure is through land development opportunities in TODs. This is a global trend that has not yet been picked up in Perth, and only has in minor ways in other Australian cities. It will require an understanding of better financing mechanisms linked to land and a better ability to use the town planning system like through TOD zoning[iv].

Conclusions: The next phase of rail in Australia

The next phase of public transport in Perth (and elsewhere) needs to begin sooner rather than later. Current trends in public transport are quite dramatic in that, since 2004 and for the first time ever, car use per capita has been declining across most industrialised economies. This has resulted from a combination of increasing fuel prices, car-based urban sprawl that makes trips too long and too expensive, and the cultural shift of younger people who are coming back into cities and using public transport at dramatically increasing rates[v].

The future of oil is now looking increasingly apocalyptic. Its global production has not increased for 5 years and it looks as though conventional, cheap oil has peaked. Thus the $140 a barrel of oil that plunged the world into chaos financially has remained over $70 even when demand has been significantly lower. Now the Middle East has stumbled and oil prices are above $100 a barrel. A substantial increase to $200 a barrel is predicted by many who look at the growing unsteadiness of Saudi Arabia. Even if this doesn't eventuate the price of oil has been growing at over 5% per year anyway, and it is already eating away at our assumptions about car dependence. Added to this there is of course the global imperative to reduce carbon.

The world has responded to these signals that car dependent and oil dependent cities are vulnerable, by moving to rail investment. China is building metros in 82 cities, India in 14 cities and even the Middle East is investing US$100 billion in urban rail in the next few years. Australia needs to be part of this.

The next phase must include large-scale funding of present rail lines to enable the extra rail cars to be purchased so that services can expand. And most of all there needs to be new lines built into the old car-dependent suburbs. This needs to be done in all the major cities, and in the medium-sized ones like Hobart, Darwin, Newcastle and Canberra. They are all facing the same oil vulnerability. They all have major corridors that are similar in size and character to Perth's five distinct corridors, each of which are corridors that needed a new less car-dependent future. The opportunities to build TODs around major stations will then be enabled.

What is clear is that there will be a political battle to enable these rail systems to happen. The first step is to envision a future that includes rail, rather than blithely taking the advice of so many in the transport business over the past few decades that new rail options are not a viable option for Australian cities. Once a vision is there, it is necessary to bring a parallel process of engaging the public and creating a suitable business case for the rail project. There will be many who seek to derail such projects. Perth has shown that it is possible to win.

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[i] P Newman, D Howard and V Vuchic, **A Review of Northern Suburbs Rapid Transit Options**, Report of the Expert Panel, Minister for Transport, Perth, 1988.
[ii] P Newman, The Rebirth of the Perth Suburban Railways, **ISTP Discussion Paper** No 4, 1991.
[iii] P Newman and J Scheurer, **The Knowledge Arc Light Rail: A Concept for Delivering the Next Phase of Public Transport in Perth,** PB-CUSP Discussion Paper, Curtin University Sustainability Poicy Institute, Fremantle, 2010.
[iv] See P Newman, M Bachels, B McMahon, J Scheurer and M Mqhum, **Delivering TODs: Transit Oriented Development Zoning, Contracting, Engagement and Governance,** PB-CUSP Discussion Paper, 2010.
[v] See P Newman and J Kenworthy, 'Peak Car Use: Understanding the Demise of Automobile Dependence', **World Transport Policy and Practice**, in press, 2011.