Parramatta Light Rail (phase 1) Submission
By Matt Mushalik

20 Oct 2017

This submission refers to:
https://majorprojects.accelo.com/public/e321246b890ccdedc23308fbc50f77ab/01.%20PLR_EIS_Volume%201A.pdf

Summary

The function of light rail is to REPLACE existing car traffic on arterial roads and to provide a network function for urban rail where there is no heavy rail.

The Parramatta LR proposal has done no analysis whatsoever which current traffic volumes can or should be replaced on which arterial roads and which network function it should have.

Instead, the LR proposal is mis-used as a sales argument for new residential towers still to be built, mainly for immigrants yet to arrive. Such an approach does not solve any of the current problems. It is not the job of the government to provide transport for 1.5 million foreigners to come in future before solving the problems of 4.5 m existing residents first.

In fact, it is NOT a good idea to settle an additional population of 1.5 million in Sydney as the energy isn't there. We'll have gas and power shortages for reasons debated ad nauseam in the media. The new National Energy Guarantee may turn out to be just wishful thinking. Moreover, another financial crisis is expected any time from now which will impact on the housing sector. When that happens, the LR proposal solely dependent on new flats will not be financially viable.

What's worse, Epping is not connected. And this proves the above points: the many flats along Carlingford Rd have already been built (and therefore need no LR sales pitch) and the towers around Epping station have their heavy rail. That seems to be the narrow minded thinking of the government.

A LR ending in Carlingford makes little sense and does not improve the current situation much. In fact it is the final nail in the coffin of PERL (Parramatta – Epping Rail Link). This could be bitterly regretted when in the next oil crisis (around 2020) it will become very clear that it was a very bad idea to have abandoned PERL (thank you Mr. Costa) which had the original function to relieve congestion on the Strathfield – CBD corridor

Apparently the government has put Carlingford – Epping into the too-hard basket as phase 2 has been announced to go to Olympic Park (again more additional flats). One would at least need a short tunnel from Carlingford station to Carlingford Court shopping centre, an alignment on Carlingford Rd and a terminus at Epping station. The Epping Planning Review has completely ignored these requirements. In the meantime, new towers are planned where a terminus could be (Council car park in Rawson St). The focus of this submission is on this topic.

In August, I had a meeting with the then Parramatta Administrator Amanda Chadwick on this topic. The briefing papers I had handed over are here:

http://crudeoilpeak.info/wp-content/uploads/Briefing_paper_Chadwick_Aug2017.pdf

http://crudeoilpeak.info/wp-content/uploads/Epping_Planning_Review_forgets_light_rail.pdf

Recommendation:

If no firm and binding LR alignment decision Carlingford station – Epping station can be made, the Parramatta – Carlingford LR leg should NOT be built. At least then there is still the option to build PERL although things are complicated because the Parramatta tunnel stubs are now connected to an automatic metro system 500 m north of Epping station.

The best solution then is to abandon these stubs and build a tunnel under Carlingford Rd, ending at Epping station at a right angle. The station would then have to be under the Council car park in Rawson St or under any of the proposed towers between Rawson St and Beecroft Rd. But that would have to be IMMEDIATELY negotiated with developers. Instead of unnecessary basement car parks you could have an underground rail station with destination Parramatta and beyond if 3.04 m wide cars are used (and not the 2.9 m narrow body metro cars).

Whether Epping station can then handle substantial interchange passenger traffic Chatswood – Epping – Parramatta is another question. Nothing has been properly designed. I had noted this in my submission when the Epping station EIS was on exhibition. In the 1960s/70s I was working as structural engineer for the Frankfurt metro project and know from this experience how interchanges should look like.

It is very difficult to make good recommendations because wrong decisions in the past have limited future options and this is getting worse every day as 3 level basement car parks create new underground barriers EVERYWHERE. There is total planning chaos in Sydney.

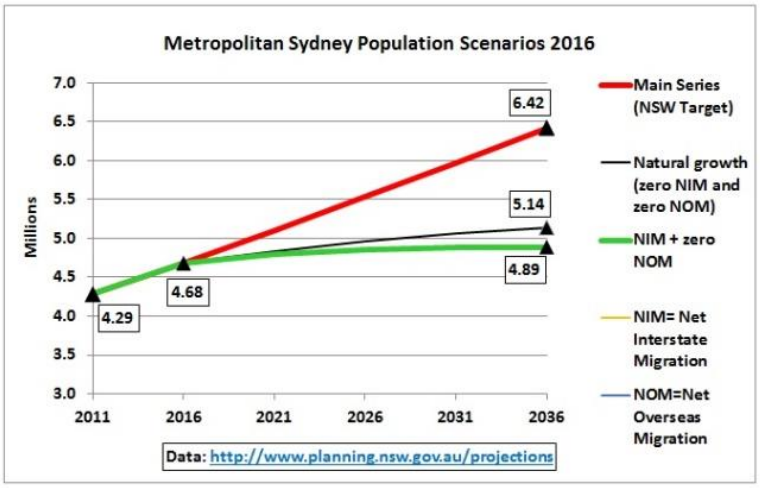
It is also very frustrating to put a lot of effort into submissions and then they are totally ignored, like this one:

http://crudeoilpeak.info/wp-content/uploads/2014/11/Epping_Chatswood_tunnel_conversion_submission_Matt_Mushalik.pdf

Graphs for the Summary

Population Growth and Energy Shortages

No cohort survival analysis was done for the existing population in Parramatta. The population growth from 240 K to 415 K in 2036 is primarily driven by an ambitious immigration program. Where is a map showing existing population and employment (in columns)? Where are the energy calculations for this population growth?



nsw population projections planning regions scenarios 2016 xlsx

NSW Planning & Environment

2016 New South Wales State and Local Government Area Population Projections

TOTAL PROJECT POPULATION - METROPOLITAN SYDNEY REGION SCENARIOS

Scenario	2011	2016	2021	2026	2031	2036
Main Series	4,286,200	4,681,950	5,106,300	5,537,850	5,975,550	6,421,850
Low Fertility	4,286,200	4,662,900	5,065,500	5,474,100	5,887,850	6,308,650
High Fertility	4,286,200	4,707,050	5,158,400	5,619,050	6,087,900	6,568,400
Low Life expectancy	4,286,200	4,677,400	5,100,800	5,526,050	5,950,750	6,377,250
High Life expectancy	4,286,200	4,686,250	5,118,350	5,562,250	6,017,950	6,489,350
Low Net Overseas Migration	4,286,200	4,681,950	5,099,000	5,503,650	5,891,600	6,262,300
High Net Overseas Migration	4,286,200	4,681,950	5,110,450	5,557,350	6,023,500	6,513,050
Low Net Interstate Migration	4,286,200	4,681,650	5,090,750	5,499,950	5,916,650	6,341,100
High Net Interstate Migration	4,286,200	4,681,650	5,112,500	5,559,800	6,017,300	6,484,600
Zero Net Overseas Migration	4,286,200	4,681,950	4,791,650	4,859,150	4,888,050	4,889,200
Zero Net Overseas Migration & Zero Net Interstate Migration	4,286,200	4,681,950	4,839,200	4,969,450	5,067,700	5,141,350

1.5 m immigration

200 K natural population growth

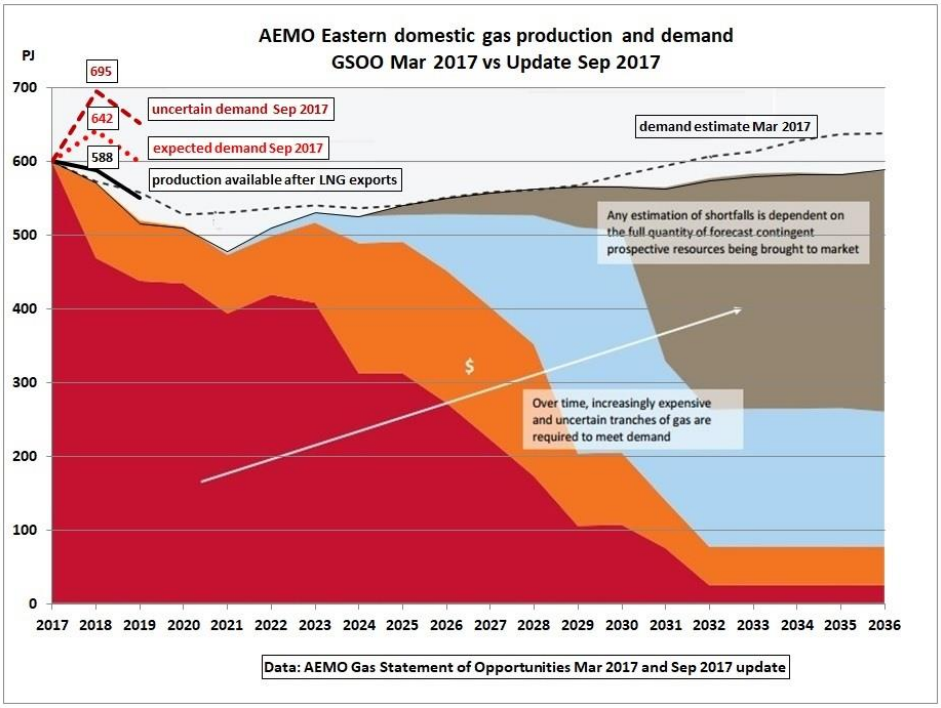
https://www.aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GSOO/2017/2017-Gas-Statement-of-Opportunities---Update.pdf

UPDATE TO GAS STATEMENT OF OPPORTUNITIES

Table 1 Gas supply adequacy assessment (PJ)

	2018		2019	
Aggregate gas production	1,891		1,886	
Aggregate LNG export gas demand	1,303		1,336	
Gas supply available to domestic market	**588**		**550**	
	Expected	Uncertainty	Expected	Uncertainty
Residential, commercial, and industrial	466	492	463	495
GPG	176	203	135	157
Total domestic gas demand	**642**	**695**	**598**	**652**
Surplus / Deficit	**-54**	**-107**	**-48**	**-102**

Prime Minister Turnbull mentioned 110 PJ. This is the energy equivalent of a 2,000 MW coal fired power plant running at 81% capacity. Massive whammy even before Liddell is closing.



My latest research on the above graphs:

20/10/2017 Australia's east coast gas crisis will be permanent
http://crudeoilpeak.info/australia-east-coast-gas-crisis-will-be-permanent

Project objectives

Project objectives are in chapter 2.7 (table 2.2.). This should have actually been chapter 1.

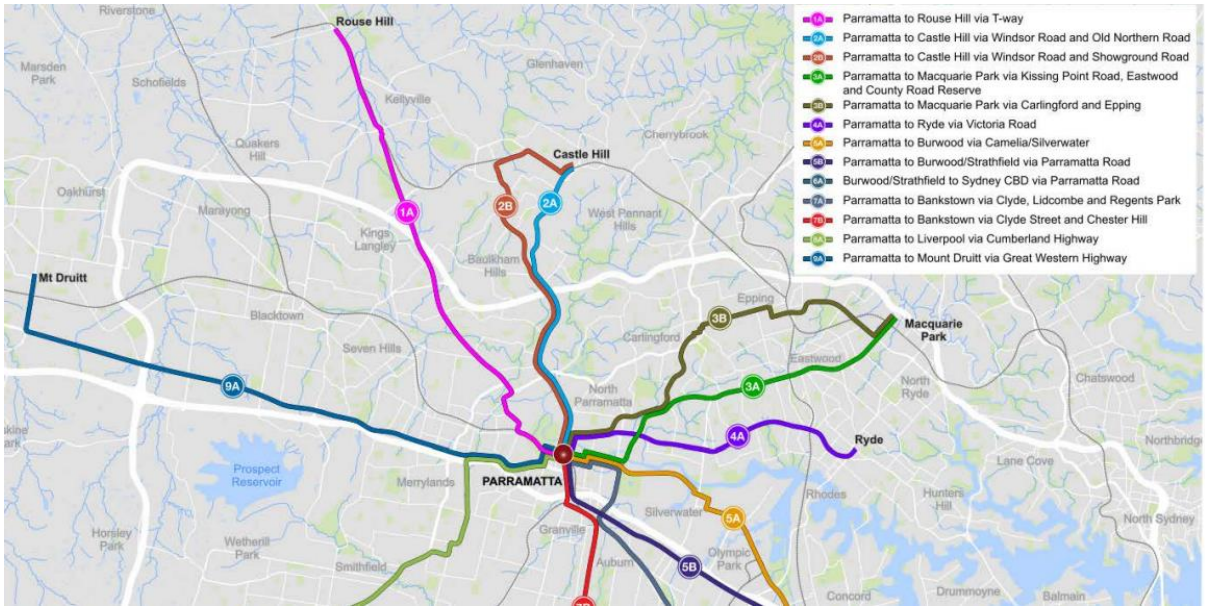
Table 2.2 Project objectives

VISION	
Vision	To deliver integrated light rail services that support the NSW Government's vision for the Greater Parramatta to the Olympic Peninsula priority growth area
Goals	**Objectives**
City shaping	Support the vision for Parramatta as a 21st century city – attracting new investment and economic development. A catalyst for shaping new growth – activating underutilised lands and providing the transport capacity needed to support sustainable population and employment growth in the area.
Connectivity	Connecting people and places – supporting the diverse mix of customer journeys that link employment, cultural, educational, health and sporting precincts with existing and new communities.
Place	Contribute to the creation of local hubs – supporting the creation of attractive and memorable public spaces that are better utilised by communities.
Choice	Providing attractive transport choices for customers – Turn-up-and-go, safe, reliable, all-day light rail service that is integrated with roads, buses, trains and active transport.

Comments on objectives:

(1) The “vision” is a narrative of perpetual growth, in particular residential towers, for immigrants yet to arrive, without having done energy calculations
(2) The project is NOT integrated. It does not even serve Parramatta station, not to mention Epping station. It is yet another branch line without network function.
(3) Activating under-utilized lands means pushing up land prices and therefore the cost of housing.
(4) There is no such thing as sustainable population growth
(5) Local hubs – as seen in Epping – now morph into sleep cities where residential towers destroy employment centres like the Cambridge St business park, necessitating long distance commuting
(6) Choice does not get motorists out of their cars. This can only be done by closing car lanes and replacing them with light rail

3.3.1 Strategic development



https://majorprojects.accelo.com/public/25f7e4e21dcd7e9ab7d59940c0bbbf94/02.%20PLR_EIS_Volume%201B.pdf

The above options were a good start, most of them with network function, i.e. connecting 2 other rail lines. Why was this not followed up? Only Epping – Macquarie Park would have been duplication of heavy rail – unnecessary.

Appendix C: Hierarchy of Urban Rail System in Frankfurt	
Heavy rail	
	
Double deckers are used as city or regional express only; limited stops every 15 mins or so	Single deckers for all stopper services. Average distance between stations: 2.5 kms
Metro	
	
Stops every 800-1000 m, runs every 5 mins	Also above ground on dedicated track.
Light rail – surface metro	
	
8 car trains - high platforms - frequent stops	Simple stations can be built fast
Trams – low floor	
	
Sharing road way	On dedicated track; car lanes gone

Sydney planning chaos: New Planning Review makes no provision for light rail at Epping station

A planning review for Sydney's suburb of Epping which started in 2016 contains an interim traffic report with a focus on cars and parking. No land or road space is set aside for a light rail terminus at Epping station which is needed to continue the proposed light rail Parramatta – Carlingford to Epping. Nor is provision made for a 4th above ground track through Epping station which is necessary for a full quadruplication from Strathfield to Hornsby. All this despite an IEA warning there will be an oil supply gap around 2020.

The need for a rail connection between Epping and Parramatta was identified almost 20 years ago (1998!) in the plan "Action for Transport 2010"
http://pandora.nla.gov.au/pan/38334/20040302-0000/www.transport.nsw.gov.au/pubs_legal/act2010syd.pdf
as part of a rail link starting in Chatswood. It was promised for completion in 2006.

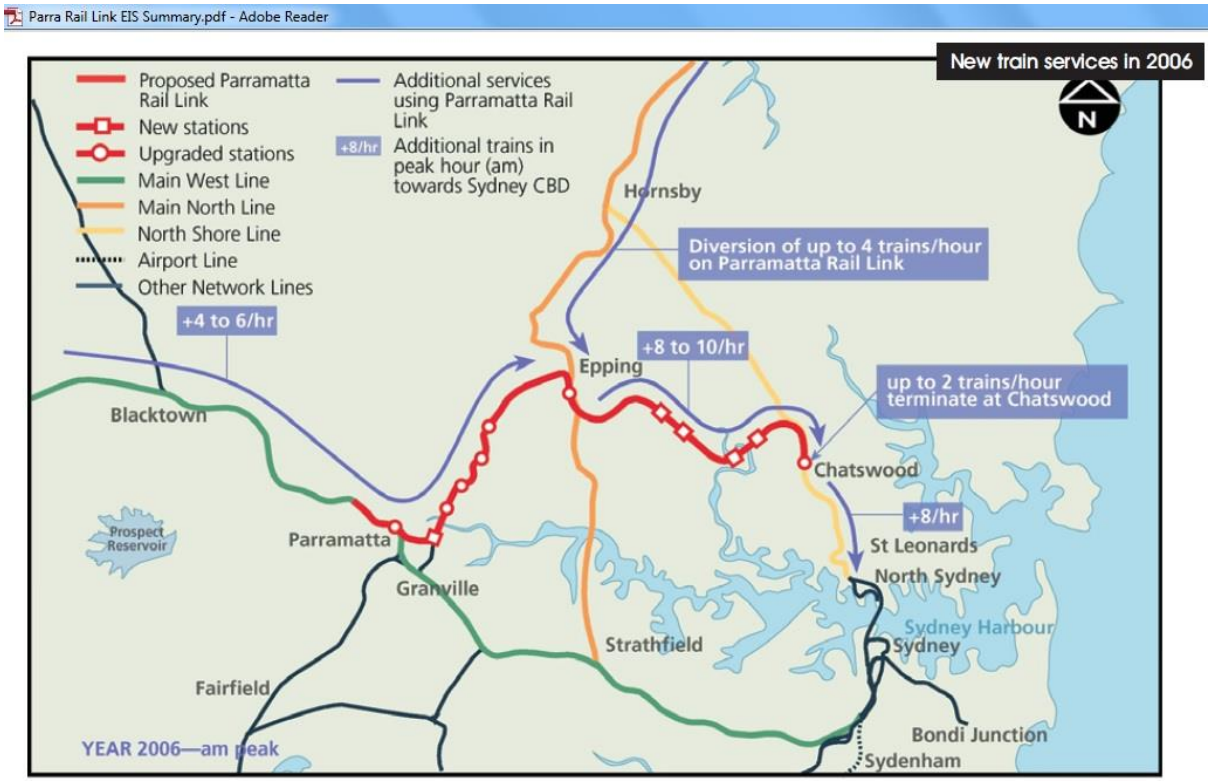


Fig 1 Parramatta Rail Link original EIS (p 5) March 2000

The original idea was to divert Western trains away from the Strathfield – CBD corridor which at the time of the EIS was estimated to reach capacity by 2016. Commuters west of Parramatta working in the corridor North Sydney – Chatswood have to go through the CBD.

The Chatswood-Epping tunnel was built and opened in 2008 but when treasurer Costa came to office he cancelled the Epping – Parramatta leg (PERL) because he thought that an initial 16,500 passengers would not be sufficient to justify the expenditure. The real reason was that he did not like rail because "any person who steps on a train costs me money."

PERL became a political football in the 2010 federal election and it was never built.

The result is that west bound trains in the evening peak are filling up before reaching the CBD to continue to Parramatta, just as predicted. Thank you Mr. Costa.

Fig 2: Standing only at Wynyard

When a new NSW government came to power in March 2011, the focus shifted to planning the Epping – Rouse Hill rail tunnel. But the original planning for the ubiquitous Sydney double deckers was changed to single deck automatic trains. The Parramatta stubs were moved 500 m north but the tunnel has a smaller diameter now so that double deckers cannot use it.

The original North West Rail Link has now been rebadged into a metro although the distance between stations was designed for heavy rail – while a genuine metro stops every 1,000 m or so and would usually run through a high density area. But what does not exist can be created – by building high rise residential towers around all stations like what is happening in Castle Hill:

Fig 3: Australians do not want to stay in high rise flats and cannot afford them anyway

Automatic trains were introduced for ideological reasons (union bashing) and the signals in the Epping-Chatswood tunnel for conventional trains are proposed to be removed in 2018.

The loss of operational flexibility is mind-boggling. The whole rail planning Parramatta – Chatswood has now been irreversibly botched.
4/1/2015
Sydney mismanages transition to driver-less single deck trains (part 2)
http://crudeoilpeak.info/sydney-mismanages-transition-to-driver-less-single-deck-trains-part-2

30/12/2014
Sydney plans to dismantle rail infrastructure built just 6 years ago (part 1)
http://crudeoilpeak.info/sydney-plans-to-dismantle-rail-infrastructure-built-just-6-years-ago-part-1

All this will be bitterly regretted in the coming oil crisis when trains will be full to bursting if only 10% of motorists try to catch trains.

Fig 4: Parramatta light rail alignment

Current planning is for a light rail from Parramatta to Carlingford. That is easy as it involves converting and duplicating an existing heavy rail line.
But the hard part is Carlingford-Epping. At a public meeting in August 2016 we were told that the continuation is a State matter. As if it is not the State government which forces population targets onto Councils which then have to deal with the consequences.

The light rail proposal Parramatta – Carlingford is the final nail in the PERL coffin. It is basically a low floor tram. And since the North West "Metro" does not connect to the Richmond line at Schoefields the bottleneck for western trains will continue. An unbelievable strategic blunder of the 1st order for the whole rail network of Sydney.

A proper mass transit light rail which could somehow be considered to replace a heavy rail link must be up to 100 m long trains in peak hr as they are used in Frankfurt.

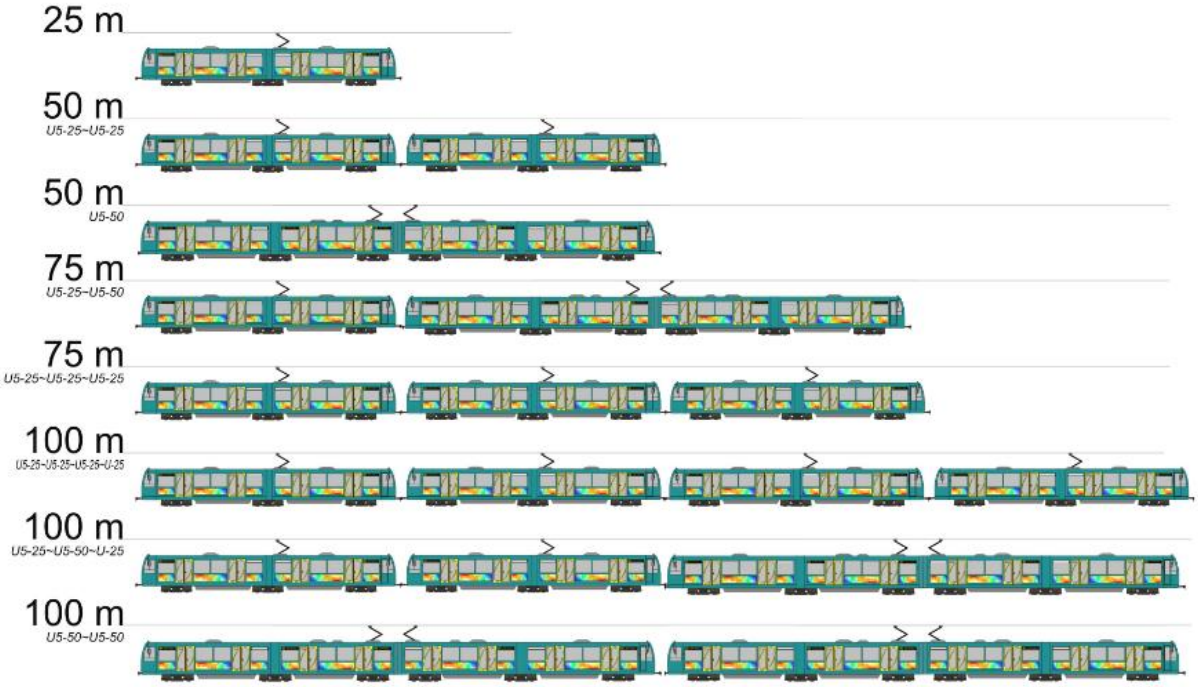


Fig 5: Frankfurt (700K population) running light rail trains up to 100 m in peak hr.

Anyway, let's see how we could continue to Epping:

The location of the Carlingford station on the LR map seems to suggest that there is no intention to continue on Pennant Hills Rd (steep hill and sharp 90 degrees intersection with Carlingford Rd). That is promising because at least a short tunnel is needed up to Carlingford Court shopping centre (under the car park corner Carlingford Rd – Rembrandt St) which should be the next stop (that was forgotten in the original PERL EIS)

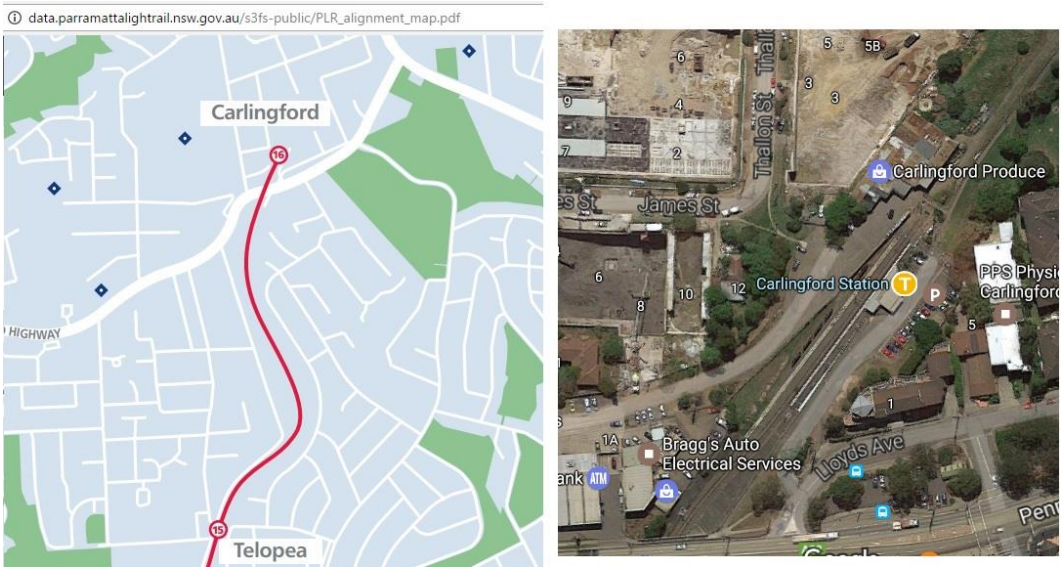


Fig 6: Carlingford station

However, flats with underground car parks have already been built near or over the alignment of such a tunnel, forcing it to be lower than preferable for the level of a station under Carlingford Court. This is another example of botched planning.

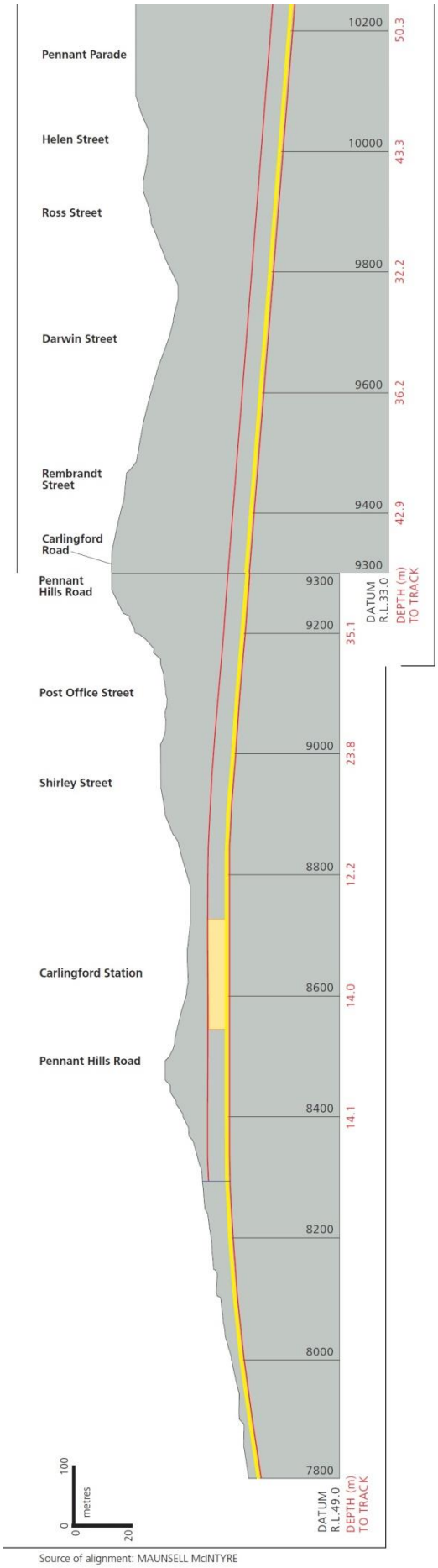


Fig 7: View north: end of the line at Carlingford

<< Fig 8: In the original PERL EIS, Carlingford station was underground, and no station under the shopping centre, also an inexcusable omission.

<< Fig 9: Plan of the original PERL EIS between Carlingford and the shopping centre.

The Baulkham Hills Council had a precinct plan.

See Part D Section 12
part_d_section_12_-_carlingford_precinct.pdf
from:
http://www.thehills.nsw.gov.au/Building/Planning-Guidelines/The-Hills-Development-Control-Plan

They had a completely different alignment for a rail tunnel between Keeler St and Carlingford Rd.

This block is now full of flats with deep underground car parks

How can you build a rail tunnel under these foundations? The location is already in a valley.

Fig 10: Embankment collapse in Keeler St due to cheap and hasty construction

'part_d_section_12_-_carlingford_precinct%20.pdf

Figure 4. Structure Plan – Access and Circulation

Fig 11: This is an excerpt from the Carlingford precinct plan on page 9. Who approved this tunnel alignment? It is definitely not that of the Original PERL EIS. It seems Councils do their own rail planning

Fig 12: The black line shows a possible alignment under the Carlingford Court car park which is just 100 m long. The only problem is Rembrandt St. Traffic lights would have to guide the safe access of rail cars to and from the underground station.

Fig 13: How do we connect Carlingford Court station with Epping station? Ramps could come out from the shopping centre station but on one side the flats are too near with all their own ramps. That should never have been approved. When I presented the flawed traffic reports to the Hornsby Council I was told that Council only rubberstamps what the NSW government tells them to do. The proper planning would have been an internal access road between the 2 rows of flats connecting to Carlingford Rd at the traffic lights with Rembrandt St.

No space for public transport was set aside, not even a bus-bay. Bad, car oriented planning everywhere.

There would be following solutions on Carlingford Rd:

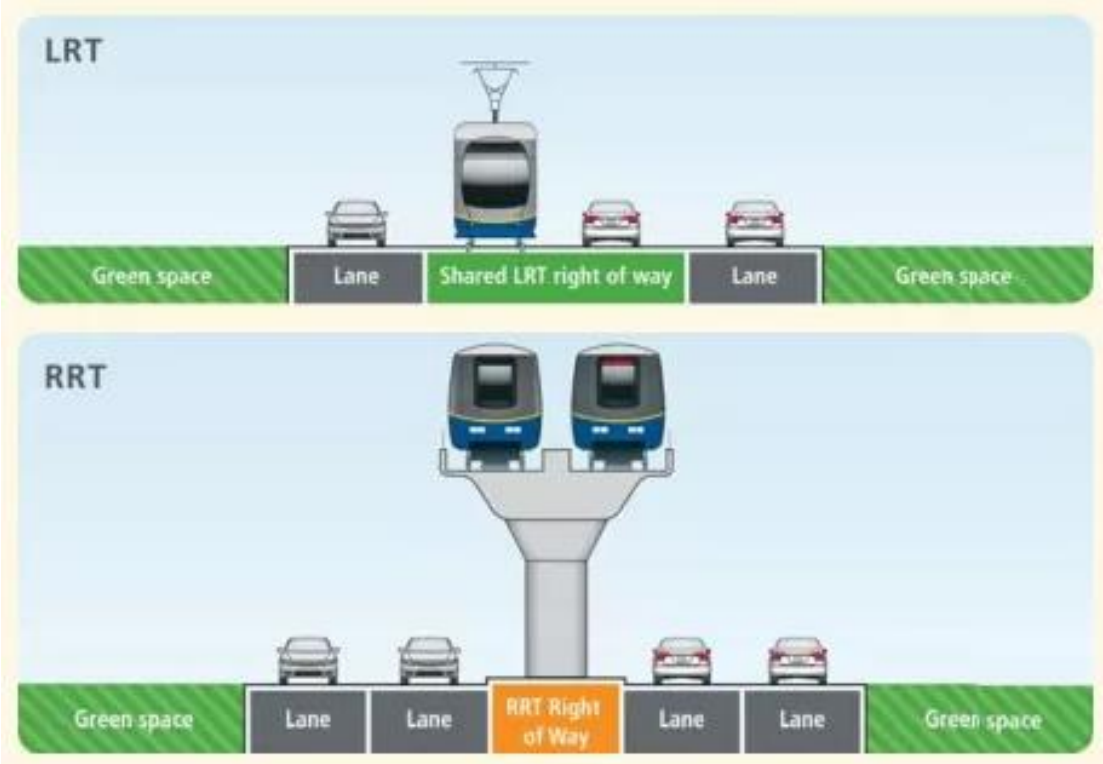


Fig 14: Light rail vertical alignment options

The LRT solution on Carlingford Rd will definitely mean the end of car oriented planning. Traffic lights ahead of moving trains would clear the road.

A variant to the LRT layout would be to run the LR on the outer lanes. There should be at least one stop, at West Epping Public school.

There must be a proper LR terminus at Epping. Let's look at the options. The closest location to the station would be on the South bound part of Beecroft Rd. That's how it looks like:

Fig 15: Oops. A lift and staircases, just built in 2008, are in the way. At that time of course the Epping Parramatta rail tunnel was under planning, not light rail.

So we would require 1 southbound car lane on Beecroft Rd which will have an impact on the 3 east bound lanes on Epping bridge for which the traffic modelling is done now. All work for nothing.

Buses can turn into bus lane stop, but not light rail. One south bound lane on Beecroft Rd will have to be set aside for the light rail terminus

Fig 16 Approximate location of light rail terminus west of Epping station

Fig 17: As there is no space for a loop, trains would have to return on the same track until the Beecroft Rd / Carlingford Rd intersection which would have to be rebuilt, needing also new traffic modelling. For safety reasons, a concrete barrier would have to be built to protect the tracks along Beecroft Rd

The other alternative for an above ground light rail terminus can only be the Council carpark in Rawson St

Fig 18: Light Rail terminus on Council car park

It will be difficult to accommodate 100 m long tram trains as the car park is less than 100 m long. There is a possibility to do it diagonally.

Fig 19: But no, car oriented planners have already something else in mind: the extension of Victoria St north wards to connect to Carlingford Rd, cutting right through the recently upgraded Boronia Park, wasting Council rates.

That's how it looks like:

Fig 20: View from the end of Victoria St toward Boronia Park. Trees are proposed to be chopped off.
Sydney's car addiction will stop at nothing.

But the real problem is that Council changed the land use for the car park in Mar 2013. The following graphs show extracts from what was called "Epping Town Centre Urban

Activation Precinct" although it was not clear what was actually to be activated exactly. In 2011 it was SP2 "Infrastructure", the proper use.

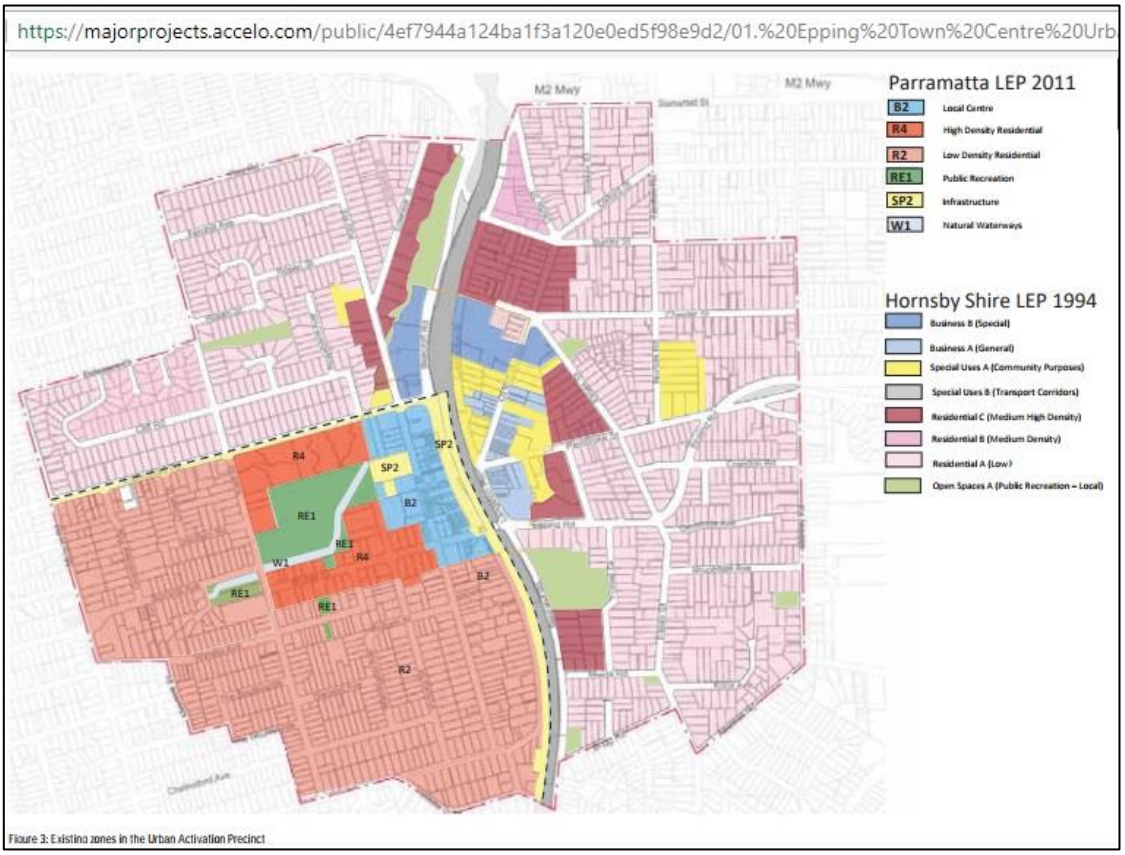


Fig 21: Land use planning before the changes

Then on page 17 we learn that the car park is a new public space to be "investigated". In order to prepare the reader what that means, the area has already been colored for 15 stories.

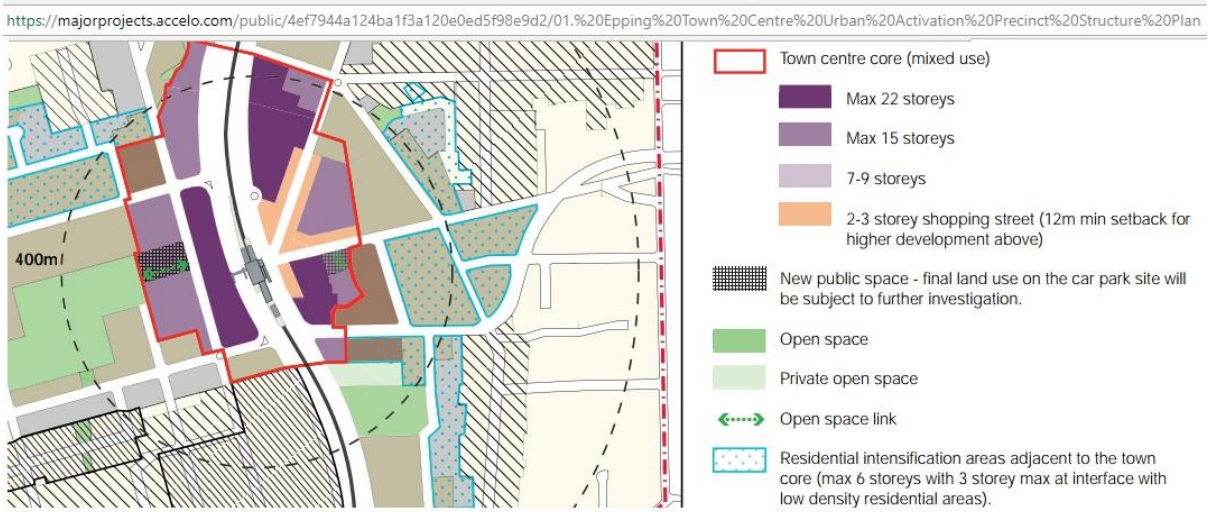


Fig 22: If under investigation the car park area should have been left white.

5 pages further down, the true land use is shown

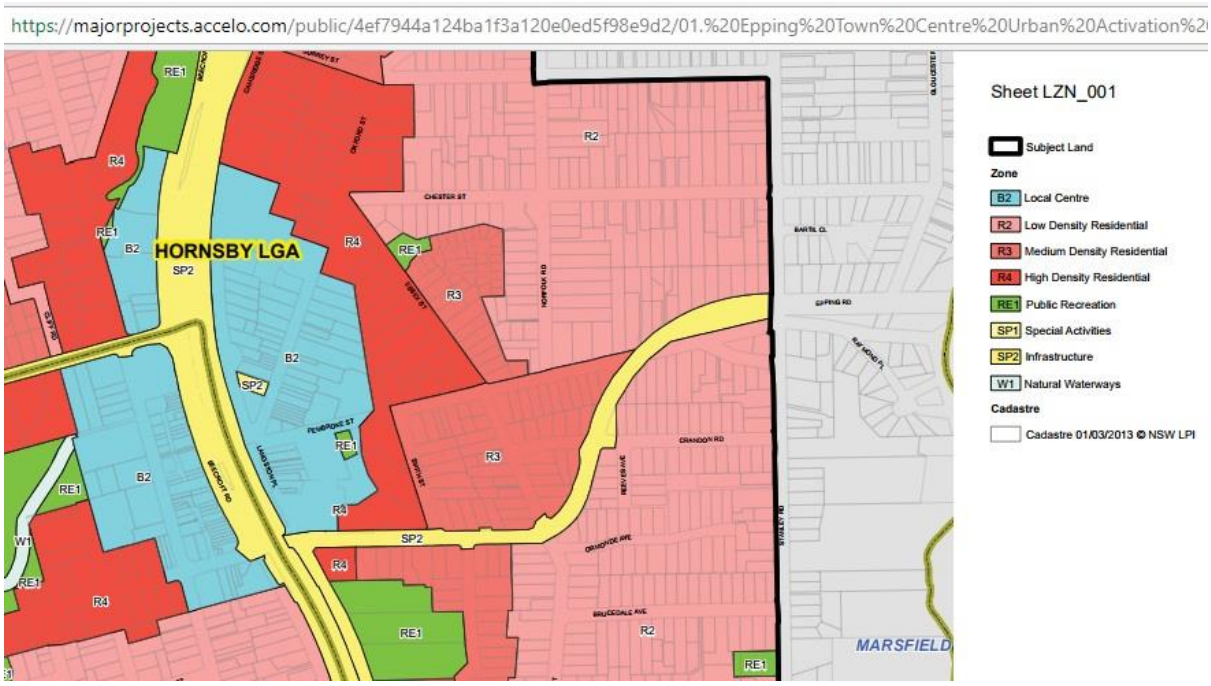


Fig 23: B2 is a chewing gum type of land use where anything is possible. Actually B stands for "Business" but that does not matter. The SP2 infrastructure is gone.

And while we are in this document, let's have a look at the rail planning that goes with it.

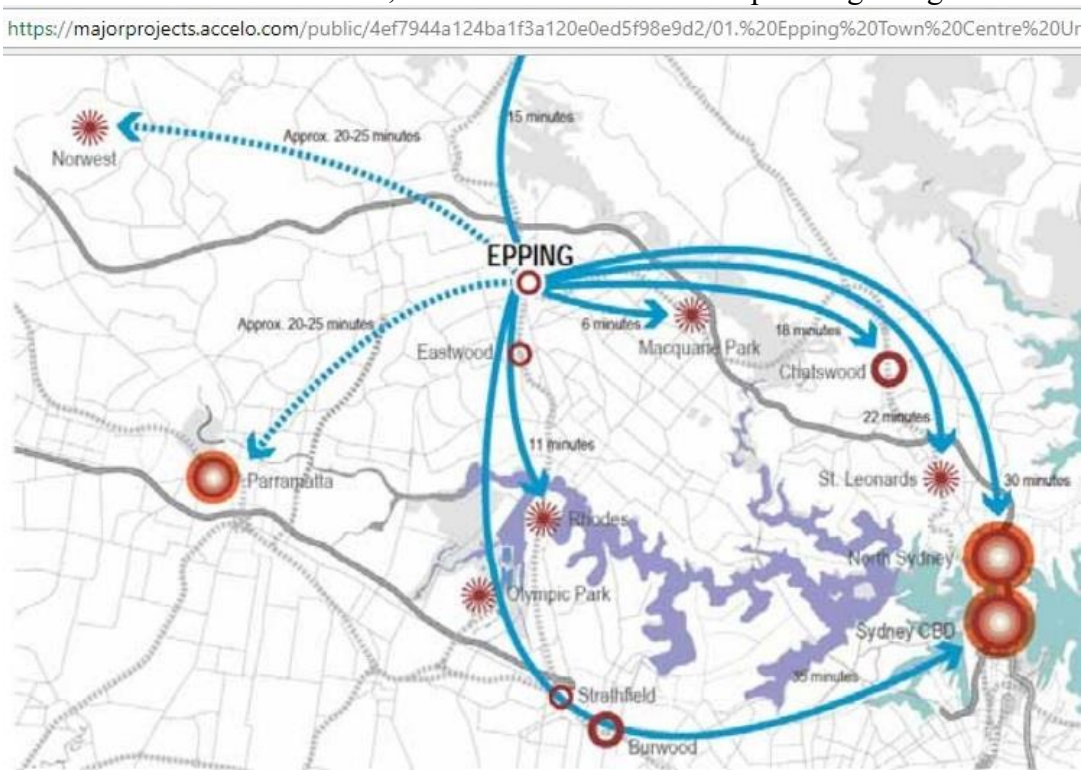
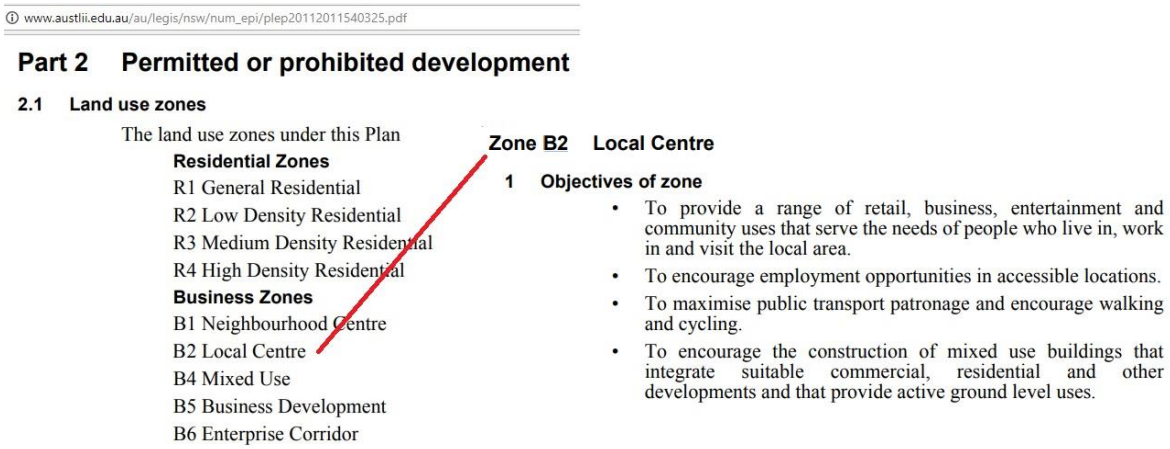


Fig 24: We see here rail planning instruments so typical for Sydney: Aspirational dotted and other arrows. Epping - Parramatta never materialized. And Epping - CBD will no longer be direct, change at Chatswood. Who knows whether the CBD/Bankstown metro will ever be finished before the next financial/oil crisis?
https://majorprojects.accelo.com/public/4ef7944a124ba1f3a120e0ed5f98e9d2/01.%20Epping%20Town%20Centre%20Urban%20Activation%20Precinct%20Structure%20Plan.pdf

The August 2011rezoning was justified as follows:

"To simplify the planning controls for the centre, a single B2 Local Centre zoning is recommended. This zone permits a wide range of uses, including retail, business, office, residential, community and entertainment purposes. There is no reason to continue to prohibit retail uses on those sites currently zoned Business B (Special) zone under the Hornsby LEP 1994. As such, it is not necessary to differentiate between zones".
http://www.hornsby.nsw.gov.au/media/documents/planning-and-building/epping-town-centre/epping-town-centre-study-september-2011/Epping-Town-Centre-Study-Chapter-5-Structure-Plan-Part-A.pdf

And here are the definitions for B2:


www.austlii.edu.au/au/legis/nsw/num_epi/plep20112011540325.pdf

Part 2 Permitted or prohibited development

2.1 Land use zones

The land use zones under this Plan

Residential Zones
R1 General Residential
R2 Low Density Residential
R3 Medium Density Residential
R4 High Density Residential
Business Zones
B1 Neighbourhood Centre
B2 Local Centre
B4 Mixed Use
B5 Business Development
B6 Enterprise Corridor

Zone B2 Local Centre

1 Objectives of zone

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.
- To encourage employment opportunities in accessible locations.
- To maximise public transport patronage and encourage walking and cycling.
- To encourage the construction of mixed use buildings that integrate suitable commercial, residential and other developments and that provide active ground level uses.

Fig 25: Free-for all definitions
http://www.austlii.edu.au/au/legis/nsw/num_epi/plep20112011540325.pdf

We see that item 4, mixed use, allows residential use to sneak in and overwhelm business use. The definitions are not based on principles but the wishes of developers. That is why the planning outcome in Epping will be a sleep city.

Fig 26: The media enjoy it with impressive illustrations
http://www.dailytelegraph.com.au/newslocal/northern-district-times/northern-district-times-claims-community-newspapers-of-australia-award/news-story/c67e4e8ed958f331f1eee2add70ff9d0

Council's car park will now be used as a bargaining chip with developers to test the meaning of B2: developers should build an underground car park with free parking at the current capacity and are then allowed to build as high as they like. Skyscraper #39 doesn't look as if it were just 15 storeys. Free for all. Monopoly pure.

No wonder therefore that the above mentioned Epping Planning Review has now increased the dwelling unit targets from 3,750 to 10,000 – through the backdoor without informing the public in the call for submissions.

If a location for a light rail terminus at Epping station cannot be found and if 10,000 dwelling units really materialize then the density would be so high that light rail would not be sufficient to serve as an adequate local rail link between Epping and Parramatta, not to mention as regional link. A tunnel would be needed, on a slightly shifted alignment of the original PERL proposal and definitely with a stop under the car park of the Carlingford Court shopping centre. In that case the light rail Parramatta – Carlingford should be stopped immediately.

Any trains from/to a Parramatta tunnel would have to share 500 m of automatic "metro" services running between Epping and Rouse Hill. If this is really provided at 5 min intervals as planned it would be extremely difficult to feed in trains from/to Parramatta. With every bad decision of the past, the government has lost options for the future.

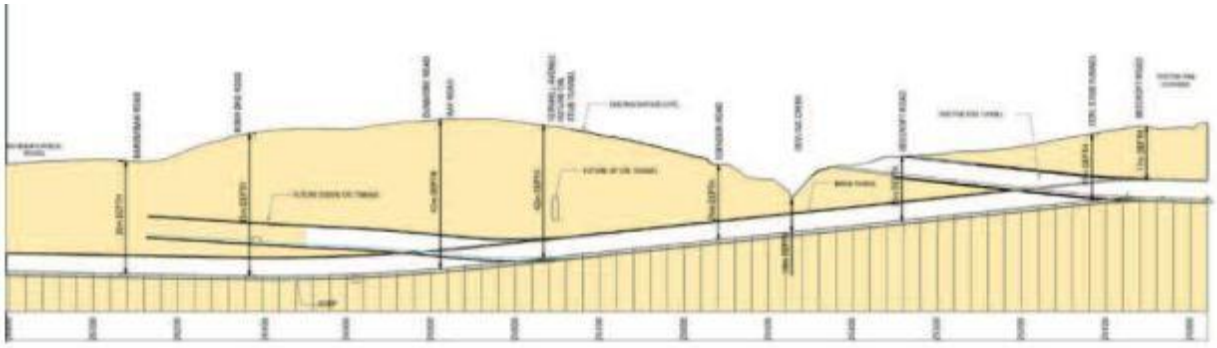


Fig 27: The Parramatta stubs are now 500 m north of Epping station

In summary, the government wilfully creates incompatible rail systems. Even if the light rail Parramatta - Epping were completed anyone travelling from, say North Sydney to the West (trying to avoid the CBD) would have the wide choice of

- Double deckers to Chatswood
- Single deck automatic trains to Epping
- Low floor trams to Parramatta – walk to station
- Double deckers to the West

Well done, NSW & Co.

This is exactly the opposite what is done in Europe.

Fig 28: To the right there is a dual voltage tram train which can also use heavy rail track on the same platform of an Intercity train (Karlsruhe). Note the moveable steps to bridge the gap to the platforms.

And that brings us to the last chance to rescue the double decker functionality of the Epping – Chatswood tunnel.

- Operate trains in automatic mode only between Rouse Hill and Epping

- Drivers to operate trains in Epping – Chatswood tunnel in mixed mode with double deckers using the existing modern signalling system

Fig 29: https://www.youtube.com/watch?v=xSwPYrkzUyc#t=4m51s

As Metro trains are only 2.90 m wide (and double deckers 3.04 m) the gap can be closed with retractable treads as shown above.

Advantages and other critical considerations to rescue the project

- Operational flexibility of double deckers is maintained (e.g. in case of accident between Epping – Strathfield Newcastle trains can alternatively use the ECRL). Future option of Epping – Parramatta rail link.

- No costly tunnel conversion and no risky 8 months closure which is actually unacceptable. In Europe absolutely impossible. Public is not aware of problem and sleeping.

- No platform congestion in Chatswood as all stations between Epping and Chatswood can be used to change to double decker trains going to the CBD

- To remove rail ramps to/from the tunnel at platforms 5 and 6 at Epping is dangerous negligence. How will management get rescue vehicles quickly into the tunnel?

- 2 metro trains possible between 1 double decker train every 15 min

- Metro trains every 5 min cannot be filled because of the low density area along the rail corridor and only 4,000 park and ride spaces. High rises around all stations to fill the trains is an untested assumption as they have become unaffordable and the long awaited housing crash will come one day, in all likelihood together with the next oil crisis around 2020 and a resulting credit crunch as already experienced in 2008.

- A global financial crash can happen any time. China sits on $3 tr debt. That is why we have so many financial refugees from China here who think they can safely invest in the Australian housing market. They have made housing unaffordable in the process.

- After the next financial crisis which according to Prof. Garnaut will be worse than in 2008, there will be no money to continue the metro project into and under the CBD. Priority will be to bail out toll-way operator Transurban which has become too big to fail.

The decision to downgrade double deckers with a lot of seats to metro style trains with a lot of standing over long distance trips is not very popular and will politically backfire before election time. We can already imagine what headlines we get in newspapers. When the financial crash happens building around stations will stop – the whole metro project which depends on a continuation to the bitter end in Bankstown will fail.

Conclusion:

There are similarities between botched rail and land use planning. Goal posts are constantly shifted by consecutive governments as original concepts are not adhered to and politically interfered with by ever changing ministers and their hire-and-fire departmental directors who don't have the technical, longstanding experience of civil servants. This is not the way to manage a 5 million city The result of all this zigzagging is what we see in Sydney: an unstructured settlement pie.
There is very little hope for Australia to make it through the next oil shock.

And while the last Epping workshop was held we get another warning:

Halliburton sees 2020 oil spike after industry cuts $2 trillion [investments in oil fields]
http://www.worldoil.com/news/2017/7/12/halliburton-sees-2020-oil-spike-after-industry-cuts-2-trillion

Prepared by Matt Mushalik

mushalik@tpg.com.au

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Twitter @crudeoilpeak