

# Let's Get Real About High Speed Rail in Australia

Presentation to Transport Australia Society, NSW Parliament House Auditorium 22 Feb 2017



Good afternoon – thanks for the opportunity to speak on this important and topical matter. This is a short version of what's on my website.

- I have been involved in this topic since the mid-1980s with many roles for both Government and the private sector;
- It has been a 30 year journey of learning, activity, some disappointment and quite a lot of frustration;
- But there is hope .....I hope!
- But only if we finally get real about it all.



It may be a bit funny running down the road up there in Rock- Vegas;

- but at least they tried to do something up there in Queensland;
- Something practical, achievable and deliverable.
- Even if average actual speed over the corridor is less than 50% of maximum train speed.
- Which shows it's about the investment in

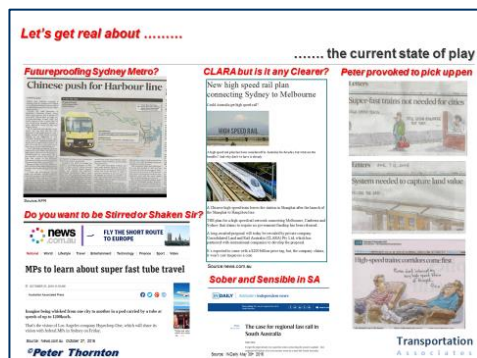
infrastructure – not technology – that is really needed;



The fact is we haven't always learnt from the past;

- Sydney Canberra competition was unique in the world – 4 separate business cases put up; 4 different technologies – 4 different patronage forecasts;
- What should we have learnt? That grand schemes just don't cut it and we need to be more modest – to start with anyway.
- Two major studies commissioned by Federal Govt 2001(Liberal party) and 2012 (Labor/Greens);
- What did we learn from the first? That it isn't going to ever happen unless its driven and largely funded (or at least underwritten) by all the governments; that it needs to be grounded in a policy for the future patterns of settlement and connectivity; that it is ruinously expensive; that shorter range corridors using 200 250km/h technology might work commercially;
- And what did we learn from the second?

- Well actually not a lot more than from the first and in fact it pretty much said the same but did add an the action to reserve corridors;
- But having been the lead author of the first Commonwealth Govt study and not involved with the second, I suppose I would say that wouldn't I?

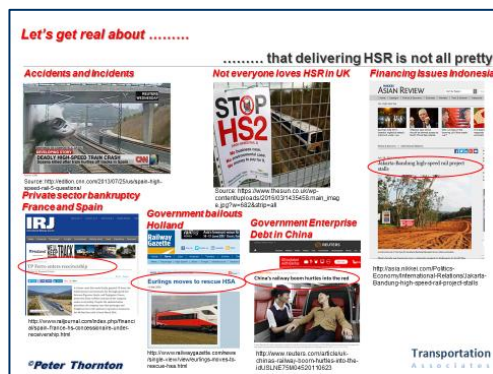


No specific Government policy as yet – but that could be changing;

- Federal Govt interested but not at any cost; States interested but not at their cost – but are interested in regions; Victoria doing some good work;
- State competition – “not in their state if not in mine”; SA wants it too;
- Back to HSR again being pushed at Government –

CLARA, Centurion; Hyperloop; Federal Opposition even;

- HSR back to being marketed on packaged up national supplier lines;
- Technology divide – VHST; HSR + Tilt; Maglev; Maglev plus evacuated tubes; all been considered before – not a coincidence that SWSR preferred for China; Europe; USA
- Consortia still not operator led but constructor /supplier/ led; Plenty want to build; not many want to take the risk to operate as a business;
- And now – land developer led and asking for an exclusive mandate no less;
- And of course, as usual, the cub reporters in the press are getting breathless about it all and sundry retired politicians are talking it up;
- I know we have all learn to be afraid, very afraid when the phrase “*imagine getting whisked*” gets used in connection with transport. Does conjure up a picture of passengers looking like a foam of eggwhites, doesn't it.



We need to remember that the pioneers – SNCF and JNR (1998 \$233.3 billion debt to be paid by taxpayers)- both required entire corporate restructuring because of the financial burden of HSR construction and operation; Later, HSR lines far less economic;

- Taiwan HSR - initially privately funded, has required Govt refinancing;
- Madrid – Seville HSR - Govt funded - has not

met regional development economic goals;


*"the big difference between Spain and other European countries is that the others plan services while we just plan spending";*

- London and Continental Railways – initially privately funded – bailed out by Govt;
- China – massive MoR enterprise debt; Heads rolled; low patronage on new lines;
- California HSR – Govt funded – is strongly opposed by sections of public;
- HSR 2 in UK – Govt funded - whilst proceeding, has many vocal critics on its economics;

- Morocco HSR – no business case analysis done? French soft loans?
- Jakarta – Bandung HSR – China & Japan competing – economics doubtful – difficulties in land acquisition and raising funding?
- Spain to France (Figueres-Perpignan) HSR – privately funded – bailed out by Govt;
- Venezuela – Chinese aid project – now abandoned;
- Hong Kong – massive cost overruns due to tunnelling problems – leadership heads rolled!
- Netherlands HSR - saved from bankruptcy by £250m government bailout
- But none of these are a reason to sit on our hands in Australia, only a reason to be very careful, to be real

**Let's get real about .....**

..... about what it's not about and what it is about



Not about the technologies or whether its French or German or Japanese or Chinese or Spanish or Alstom or Bombardier or Hyundai or whoever .....

**- there are plenty of technology options!**

Or who wants to provide it and build it!! - **Any number of companies available to do that.**

BEIJING-SHANGHAI  
1,318 km  
16 hours  
1st profit after 4 years of Operations  
but most of all.....

It is about creating a **successful and commercially sustainable transport system**

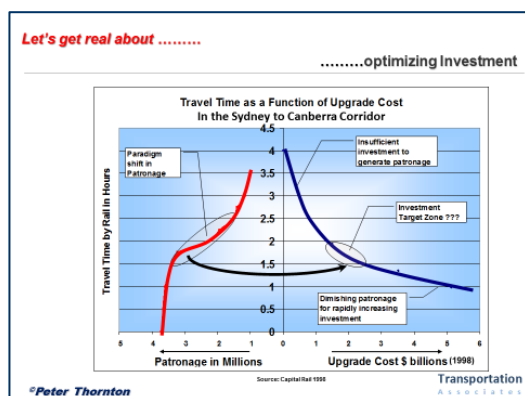
it's about the big **NATIONAL** goals for **patterns of settlement in this country and how to make these work**

**Peter Thornton**

Transportation ASSOCIATES

This slide really shouldn't need any explanation – if we have learnt from our history in the matter;

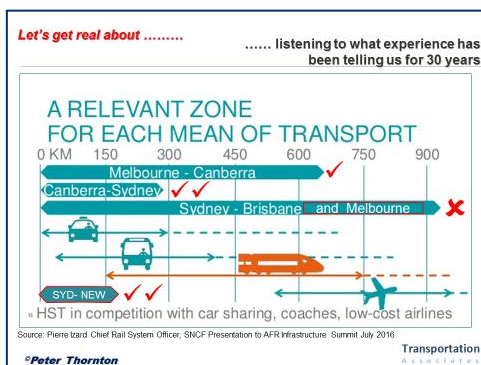
- But to reiterate.....
- It's not about any country's or any company's technology any more – there are plenty around – we don't want to be locked in to any of them;
- It's not about who wants to build it - If there's a sniff of a **funded** project, there'll be any number of people from all over the globe lining up to help us do it;
- It **is** about creating a transport business – one that is successful and commercially sustainable – one that we want not one someone wants to give us;
- And one that serves a national goal of settlement patterns;
- And I might note people who want to use their money to create a transport business are rather scarce on the ground.



I have been showing this graph for nearly 20 years – no one has ever seriously challenged what I think it says; it may not be perfectly correct but it is the kind of reality check we need to do.

- The vertical axis is travel time – Sydney – Canberra;
- The right hand horizontal axis is investment in upgrading the corridor – it's what the four bidders actually said back in 1998;
- You can clearly see the law of diminishing returns in action as the margin cost of saving time increases from around \$11 million to over \$70 million/minute
- And you can see on the left how patronage responds to reducing travel time;
- Not much increase till the time is less than 2.5 hours; a paradigm shift and then below about 1.5 hours very little addition growth

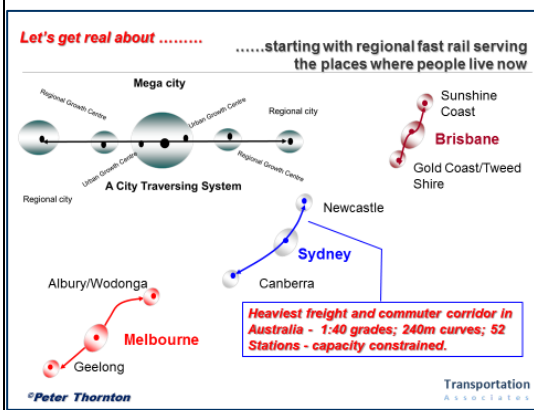
- On a marginal per passenger minute saved basis, costs double from less than 2 hours to between 2 and 1 hours and beyond that are ten times as great.
- So what is the point of building infrastructure to travel at 500 km/h when most of the market can be captured by SWSR high powered, maybe plus tilt, technology and selective alignment upgrades giving less than 2 hour travel?



And let's get real about what we have been told for over 30 years by people who know and who aren't here to sell us something;

- This isn't my graph though I have annotated it - Pierre Izard of SNCF presented it at last year's Fin Review Conference on Infrastructure – and guess what! It is exactly what his colleague Luc Aliadere told me in 1985 sitting over there in the Menzies Hotel.
- The facts are Syd-Bris, Syd-Mel, Mel-Bris are natural aviation markets and corridors;
  - *Aviation is fully privatised...*
  - *Australia needs a strong domestic and international aviation capability....*
  - *We should not spend taxpayers' dollars to destroy it;*
- But we need a high level plan about how we are to live in the 21<sup>st</sup> century;
  - *A few mega cities or better distribution of population in key corridors?*
  - *Despite claims to the contrary, no one private sector "outfit" can do this;*
  - *This is always simply a distraction, everyone gets hot and bothered and it always ends with us doing nothing; at the end of the day government will have to underwrite the risk!*
- Land value capture will not fully fund a project of this scale in the time lines that are needed;
  - *Certainly it may be able to help – over the long term;*
  - *But Banks are unlikely to securitize the uncertain promise of future land value increase; for the debt and equity needed to finance a project upfront;*
- By and large, the State Transport Agencies know what is needed;
  - *But lack funding and an integrative cross border long term plan.*
- What we need is very much better rail in regional corridors that span our cities:
  - *where it offer better travel time than road and which will never be served by air and which supports the above view and plan:*
  - *i.e. where it has a natural competitive advantage*

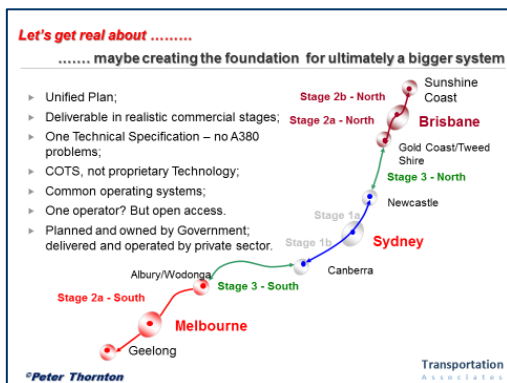




So let's get real that we need a practical way to create much better rail services in Australia

- That first we need much better regional rail to across and through our cities to serve urban growth centres of the fringes of cities, regional growth centres and regional cities
- And for the east coast here are some potential corridors that fulfil that concept.

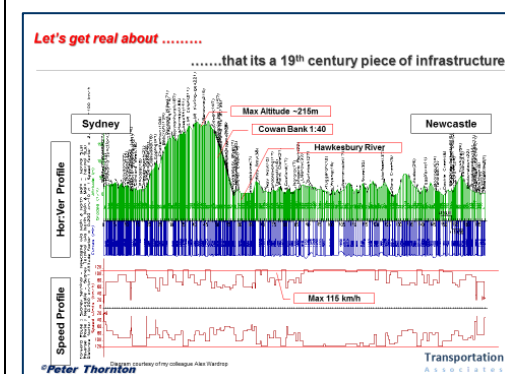
- And let's get real about what is Australia's most heavily used and most capacity challenged rail corridor – its Sydney to Newcastle; it must be a candidate as the place to start.



And while we at it, we need a Unified Long Range Plan;

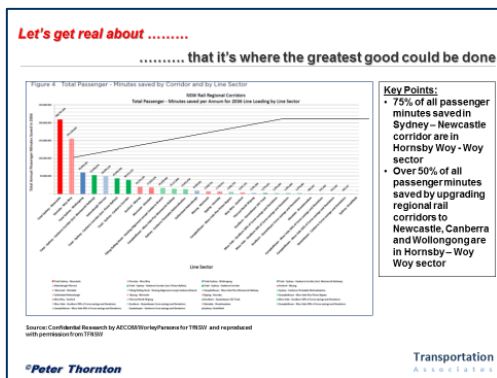
- Deliverable in realistic commercial stages;
- One Technical Specification – no A380 problems – see me after for an explanation;
- COTS, not proprietary Technology;
- Common operating systems;

- One infrastructure operator? But open access for above rail.
- Planned and owned by Government; delivered and operated by private sector.
- And if we get it right maybe creating the foundation for ultimately a bigger system
- And at this point, while I'd like to go on explain more about Sydney – Newcastle, I think I am running out of time – happy to come back if the moderator permits later.



You can't read this can you – that's because there are so many curve and gradient changes;

- 1:40 grades; 240m curves; 52 Stations
- And a maximum speed of 115km/h
- And its capacity constrained
- As well as possibly being the only journey where you first travel due south to go due north.

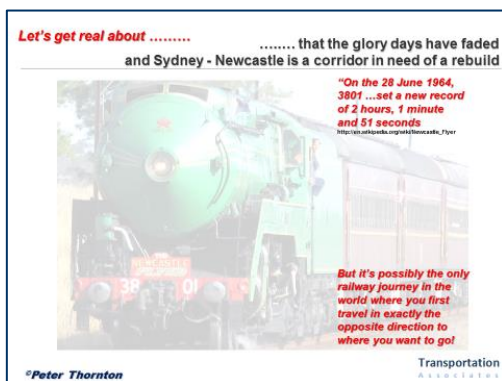


It's in this corridors where the greatest good could be done;

- 75% of all passenger-minutes which could be saved in an upgraded Sydney – Newcastle corridor are in Hornsby Woy - Woy sector
- And over 50% of all passenger-minutes which could be saved by upgrading regional rail corridors to Newcastle, Canberra and Wollongong are in the Hornsby – Woy

## Woy sector

- And even better of all major projects, Hornsby Woy – Woy sector is the best value for money on a cost per passenger minute saved.

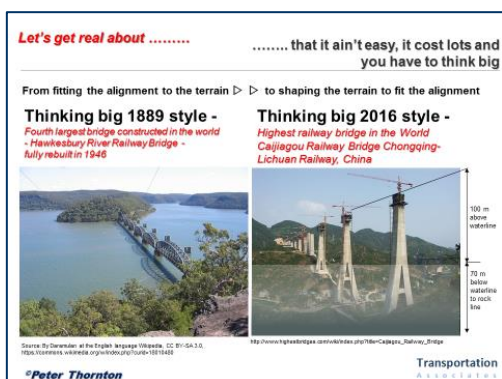


The corridor population is increasing but not as fast as metro Sydney;

- Demand for affordable housing around Sydney;
- Rail Freight is set to grow “*explosively*”;
- Peak Passenger rail demand high and increasing;
- Rail corridor capacity issues and upgrade costs;
- M1 (Newcastle) Freeway also reaching peak hour

capacity and subject to horrendous delays;

- In short it's a transport corridor under pressure where nothing really significant has been done in a century;
- So let's get real that in NSW, at least, Sydney – Newcastle fits the bill of a corridor that could deliver: *"A new paradigm of urban development, mobility and transportation connectivity"*



But to achieve that 75% of all passenger minutes to be saved you have to address this;

- 128 years ago our forefathers were up to the challenge;
- And I spent 18 months helping to build the last big bridge over the Hawkesbury in 1972;
- And today we'll have to be just as bold;
- We'll have to shape the terrain to the alignment that alignment to the terrain as best it could be.

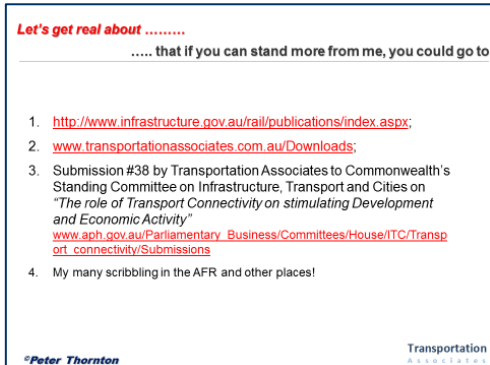


So in summary, let's get real about getting real and let's get there fast;

- Let's forget about bleeding edge technologies; Let someone else bleed proving them up;
- **But let's not continue to sit on our hands** – as my letter to the Canberra times recently said.
- Let's create better, **very much better, regional rail** links in all Australia States – *issue of equity of*

*national taxpayer investment;*

- Let's not be distracted by grandiose, private sector claims - in the end, Government (the taxpayer) will have to financially underwrite it, or bail it out, just like everywhere else;
- Let's encourage Government to decide on the big question of patterns of settlement, what is needed and where; And let's not driven by private interests;
- Let's not be locked into bespoke technologies but let's have a long term integrated technology plan for Common Off The Shelf kit;
- Let's not hand out any exclusive development mandates but let's put the private sector into competitive situations to deliver what we want – many models to finance and deliver and operate;
- But most importantly, let's just do it and take that single step towards successful regional fast rail;
- And let's hand the next generation a decent platform on which they can continue to expand to full intercapital HSR – if they want.



And now we've all got real, I promise never to say "get real" again – well unless I get unduly provoked by proposals that will simply distract Government from doing something ***sensible, achievable, affordable, deliverable.***