Newcastle Urban Renewal Strategy

Have Your Say Submission

Jeff Melvaine, 15/3/2013

Introduction

This submission focuses on transportation issues consequent on the decision of the NSW Government to truncate the Newcastle to Hamilton rail line at a new Wickham bus interchange. It is acknowledged that the Government has not solicited feedback on the truncation decision as part of the consultation process for the Newcastle Urban Renewal Strategy. Nevertheless, this decision influences the extent to which NURS can achieve some of its stated transport objectives. It would be unfair to attribute adverse consequences to NURS planners when those consequences derive from restrictive terms of reference.

Similarly, there has been media agitation recently, from sources including at least one member of the NSW Government, advocating truncation of the rail line to a bus interchange at Broadmeadow. Another recent suggestion advocates restricting 8-car electric trains to operate only as far as Broadmeadow, in conjunction with the Wickham truncation. It is appropriate that the Broadmeadow interchange proposal should be compared with the Wickham interchange, because publicly accessible analysis of the former interchange proposal is more detailed in some important respects, and indicates that truncation at Broadmeadow would have more serious effects on the NURS transport objectives.

Demand Effect of a Truncated Rail Line

Forcing a change of mode upon passengers creates dissatisfaction, in respect of waiting time and overall journey time. The TIDC report on the proposed Broadmeadow Interchange (2003), incorporating a rail patronage review by Halcrow Group, provided estimates of the number of rail passengers passing through Broadmeadow, and the number who would desert rail for road transport when compelled to interchange, in the first year of planned operation of the interchange (2008). The Currie review (2005) quoted Halcrow's figures, and observed that the loss of rail patronage attributable to the interchange was 38%, but dismissed this estimate as biased in favour of the interchange proposal, and suggested that the loss of rail patronage would be at least 60%. Currie also noted that the percentage change in the fare revenue collected from passengers should be very similar, so in effect this was a prediction that the Broadmeadow interchange would cause a drop of the order of 60% in the revenue from rail users who would be forced to use the interchange.

For the Wickham interchange, the effect on patronage would be less severe. Using data published on the Transport for NSW website, the combined total of the barrier counts in 2008 from stations Hamilton to Newcastle (to be closed for the Broadmeadow interchange) was 3610, compared with 2250 from stations Civic to Newcastle (to be closed for the Wickham interchange). The figure for the Wickham interchange is about 62% of the figure for the Broadmeadow interchange. As a rough

guide, one might expect that the corresponding 2008 estimates for loss of rail patronage from a Wickham interchange would be 23% according to the Halcrow method, and 37% according to Currie.

These figures relate only to passengers passing through Broadmeadow, so it is not clear how they would relate to the total revenue from Cityrail Newcastle-based services on the Hunter and Morisset lines. However, the 2008 barrier counts for stations Hamilton to Newcastle account for 34% of the total for the Hunter and Morisset lines, while those for Newcastle and Civic are 21% of that total. Scaled down in this ratio, the rail patronage losses come out as 13% (Halcrow) or 20% (Currie) for the Broadmeadow interchange, 8% (Halcrow) or 13% (Currie) for the Wickham interchange. These last estimates are very rough ballpark numbers for the loss of rail patronage as a percentage of total Cityrail passenger journeys over the Hunter and Morisset lines. These numbers are much lower because they include journeys not passing through the interchange, such as journeys from Morisset line stations to Sydney and the Central Coast.

In the event that a hybrid interchange is adopted, with electric trains terminating at Broadmeadow and Hunter line trains at Wickham, a significant transfer penalty is imposed on passengers who would otherwise have a simple change of trains at Hamilton or Broadmeadow; they would be required to interpolate a bus journey from Broadmeadow to Hamilton between trains. The impact of this is difficult to estimate, but the passengers affected would include all those travelling between Morisset line stations and the University at Warabrook, a significant traffic attractor. It is doubtful whether this arrangement would show much less loss of patronage than the Broadmeadow Interchange.

These rough estimates are useful mainly as an indicator of risk, specifically the risk of a significant decline in fare revenue. A more interesting calculation would involve the application of more recent statistics directly to the Wickham truncation. This has been done, but the report (AECOM 2010) very tactfully avoids any mention of the predicted loss of rail patronage as an immediate consequence of the truncation. I am surprised that, after the dramatic impact of the Currie report, subsequent studies are not always scrupulously careful to make it clear that the mistakes of the past are not being repeated.

The AECOM report does admit that the total public transport share in 2016 (five years after implementation of the truncation) would be about 1% less as a consequence of rail closure, a forecast that does not directly address loss of rail patronage. It describes the demand forecasting method used in some degree of detail. Interpolating from the AECOM demand elasticity, -0.74, as against -0.6 (Halcrow) or -1.0 (Currie), this would give a rail patronage decline of 47% (Broadmeadow interchange) or 28% (Wickham interchange) of passengers passing through Broadmeadow, assuming that this demand elasticity is applied as in the Halcrow patronage review. The rough ballpark estimate, of rail patronage loss as a percentage of total Cityrail passenger journeys over the Hunter and Morisset lines, would then come out as 15% (Broadmeadow interchange) and 10% (Wickham interchange).

The significance of these numbers is twofold. Firstly, the displacement of rail passengers onto road transport will not be restricted to the operation of the bus interchange. This has consequences to be explored below.

Secondly, passengers can trust only the charity of Cityrail and the NSW Government that local Newcastle rail services will not be cut in response to a significant dip in patronage. Service cuts would make the service less desirable from the point of view of the remaining passengers. This latter point becomes more urgent if a reversion to the Broadmeadow interchange becomes Government policy. It has the potential to trigger a "death spiral" towards removal of all Newcastle-based rail passenger services (Hunter and Morisset lines). Clearly this would not help to achieve the NURS objective of greater use of public transport.

Displaced Rail Traffic

It is optimistic to believe that displacing passengers from rail to bus will have a negligible impact on vehicular and pedestrian traffic flows in the city. According to the STA website fleet details, the modern buses in the Newcastle fleet have seating capacity of 40 to 50. A four car diesel railcar has the seating capacity of about seven of these. An eight car double deck electric train has the carrying capacity of about 20. But there is some controversy about how fully loaded these trains are in the Newcastle CBD, so let us work from the Transport for NSW barrier counts for 2011 to see how many buses would be needed for the Newcastle and Civic passengers. This source shows 750 arrivals in the morning peak (06:00 to 09:30), and 930 departures in the afternoon peak (15:00 to 18:30).

Assume that every bus has a crush load of 60 passengers when it arrives or departs at the interchange. That comes out at 13 bus trips from the interchange to handle the morning arrivals, and 16 to the interchange for the afternoon departures. These numbers do need adjustment, because, as discussed previously, some train passengers will switch to bus only or car rather than use the interchange. This will not improve the overall road congestion. Does it really help the city to function, having these additional vehicles clogging the streets?

It could be argued that not all these buses will be headed towards Newcastle station, and therefore the sector between Hunter Street and the harbour will benefit in some degree from those buses that take other routes. But road traffic has a tendency to flow like water, to equalise the pressure as far as possible. The situation could be improved only slightly by investment in modern higher capacity buses.

It is worth remembering that the 2003 Broadmeadow Interchange proposal was based on the idea that passengers changing to buses would take up unused capacity on existing services. The idea was not just to save capital outlay, but to avoid additional bus trips through the city traffic to replace the trains. The Currie report (2005) identified problems with this approach, but in any case it is no longer consistent with NURS objectives, which seek to improve the passenger loadings on existing bus services by other means such as clearways and bus priority measures, in order to attract patronage from private vehicle users. If it is true that many desirable destinations in the city are not in close proximity to the rail corridor, then diverting existing bus services away from those desirable destinations to run via the interchange would not make the services more attractive.

If the Broadmeadow site for the interchange is again adopted, the 2011 barrier counts for stations Hamilton to Newcastle are 1330 for the am peak arrivals (23 bus trips) and 1540 for the pm peak departures (26 bus trips). These bus trips and their return workings would pass through the full length of the west end, the new CBD hub.

Use of the Rail Corridor by Other Transport Modes

The higher frequency possible with bus (or light rail) services on a dedicated corridor may be seen as an advantage over heavy rail. But this actually has a negative effect on permeability. The cross traffic, although experiencing shorter interruptions, will experience them more often. This will lead to shorter, more disjointed periods of cross flow between bus/tram-priority interruptions. All this assumes that cross traffic is free to move when the rail corridor is not occupied at crossings; in reality, movement is often obstructed by road traffic signals or general congestion ahead of the crossing. Much more careful co-ordination of cross traffic flows with other road traffic pinch points would be required when cross flow periods are short.

Bus Characteristics

The use of buses instead of trains, and in particular electric trains, will have a net negative impact on air quality in the city. The use of CNG and low emission diesel buses would reduce this effect as they are incrementally introduced, but it is very difficult to see the expulsion of electric trains from the city as an improvement.

Another benefit of gradual modernisation of the bus fleet would be increased availability of units with wheelchair ramps and kneeling suspension, although the latter might well increase the time penalty at the interchange, and at subsequent stops. The absence of wheelchair accessible buses at the interchange at any time would give reason to regard the level of service as degraded, relative to the through train service. In an inclusive society, such regression would be unacceptable, other than in exceptional circumstances.

I doubt that the existing Newcastle bus fleet has enough wheelchair- accessible buses to guarantee wheelchair accessibility, especially if the interchange is sited at Broadmeadow. In the event that a decision is made to run the interchange connections using unused capacity on existing bus services, the provision of wheelchair accessibility becomes an even more acute problem.

Disuse of the Rail Corridor

Disuse of the rail corridor, between Newcastle and the point of truncation, would shift the permeability issues away from the rail corridor and onto parallel east-west road corridors. Any suggestion that nobody would notice because those road corridors are already saturated might well represent a pedestrian's perspective, but would be contrary to the spirit of NURS traffic management objectives. Some of the shift would be to roads away from the rail corridor, but it is a questionable judgement to call that an improvement.

Disuse of the rail corridor also would result in an overall loss of public transport throughput. The introduction of road transport improvements elsewhere would be a dubious form of compensation; the NURS proposal makes it clear that such improvements are necessary in their own right. The introduction of clearways is a good initiative in the suburbs, although its impact would be limited, on those routes chosen for intensive bus services, by the number of bus stops in regular use during clearway hours. In the inner city there is less scope for clearways, as routes for buses, cars and commercial vehicles mingle.

The Effects of Interchange Design on Road Traffic

The AECOM report investigating the feasibility of the Wickham Interchange (2010) recommends the closure of the level crossings on the truncated line at Beaumont Street and Railway Street, because of the safety risks associated with points close to road and pedestrian traffic, the number of additional empty train movements between Wickham and the stabling sidings at Hamilton (which are to replace those at Newcastle), and the slow speed of trains traversing points or approaching buffer stops while also on the crossings. The effect of these closures on local road traffic will be significant, and this additional congestion will occur close to principal east-west road arteries, with a major influence on through traffic between the city and suburbs.

This is so clearly not an improvement on the existing traffic situation that I suspect it explains a major part of the agitation for a reversion to the Broadmeadow Interchange proposal. Other causes could be objections to land resumption at Wickham to construct the interchange.

The Broadmeadow Interchange proposal was thoroughly discredited in the Currie review for a number of reasons. Apart from the rail patronage issues already mentioned, the site was unsuitable for a bus interchange based on the Lambton Road overbridge for safety reasons, and inconveniently located as a central focus for bus services.

Future Growth Potential

As a rail corridor, the Newcastle line has unused capacity that can match future growth of the city. Signalling upgrades would be required to achieve maximum benefit, but this is a much less intrusive and expensive strategy than road-widening. To match this growth capacity with bus or light rail services along the corridor would completely saturate it, and require grade separation or closure of all crossings, hardly a cost-saving option. There will be more room for a bus interchange at Wickham if the rail line is retained to Newcastle.

The rezoning of the east end and Civic precincts does not remove growth potential to the extent that mass transit is unnecessary for the future. In addition to educational and non-bulky goods retail traffic, as well as some growth in other commercial use, there are mass attendances at major recreational events. The existing line performs a useful function in assembling and dispersing large crowds, particularly useful if late night revellers may become restless. In relation to truncation at Broadmeadow, the role of the rail line as a mass transit corridor to the new CBD is essential to all future commercial growth.

Visual Aspect

One of the virtues of the NURS proposal is that so many of its planned improvements could be achieved without abolition of the rail line. It is appropriate to point out that beautification of the visual aspect of the rail line does not require it to be removed or dieselised, in order to dispose of the unaesthetic overhead stanchions and wiring.

The Newcastle rail electrification of 1985 extended the overhead wiring all the way from Gosford, over some very steep grades, at a time when electric haulage of freight trains was still regarded as a major benefit. The overhead equipment was therefore constructed to a standard supporting heavy haulage with high power requirements, and this standard was applied all the way to the terminus.

However the Newcastle line from Broadmeadow is almost perfectly flat, has no freight traffic, and passenger trains do not travel at high speed because of the relatively frequent station stops and level crossing safety issues. It should be possible to replace the industrial strength overhead equipment with something much lighter, more graceful and ornamental, in the style of modern light rail overhead, without impairing the ability of one train to help to move another in difficulty. A design competition could be held to achieve this objective.

This change would be intrusive, in the sense of requiring the traction power to be shut off during reconstruction work, but could be handled by weekend shutdowns such as are normal for major maintenance work. The best news is that only the highly visible parts of the line would need treatment. Those parts of the line enclosed in urban canyons, such as the shoreward side of the Honeysuckle development, would be seen only by those unusual people who turn their heads away from the harbour views to gaze at such things.

Minor Criticisms

I would argue that the Stockton Ferry service is quite regular even outside peak hours. And is it really true that nobody uses the ferry to travel to Newcastle outside peak hours? This might be nothing more than an artefact of rounding the statistics to the nearest hundred, but it looks very odd. Let us hope that any decision to cut ferry services is not made on such a basis.

I am unclear as to whether the plan is for 4000 or 6000 new dwellings in the east end. The NURS proposal quotes both figures in different places. The difference would have an impact on transport requirements.

Summary and Conclusions

There would be a loss of up to 13% in total fare revenue from stations on the Hunter and Morisset lines in consequence of the Wickham Interchange. For an interchange at Broadmeadow, the decline would be up to 20%. These numbers are high enough to call into question the viability of local Newcastle rail passenger services.

The best case estimate for additional road traffic generated by the Wickham interchange, using buses with crush loads of 60 passengers, is 13 am peak direction trips and 16 pm peak direction trips. For an interchange at Broadmeadow, the numbers are 23 and 26 respectively. To allow for loss of rail patronage, decrease these numbers by 13% (Wickham) and 20% (Broadmeadow), but also take into consideration the extra load this places on road traffic; there will be more pressure on existing bus services, and more congestion from additional private vehicle journeys.

Replacement of electric trains with diesel or CNG buses will add to exhaust emissions in the city. Transfer to buses will disadvantage wheelchair passengers unless suitably equipped buses can be provided at the interchange.

Permeability across the rail corridor will not be increased by substituting light rail or a dedicated busway. The higher service frequency will result in shorter intervals between interruptions for priority traffic on the corridor. Abandonment of the rail corridor as a transport corridor will push the transport task onto the road network, which will push back. This will also compromise permeability

on streets adjoining the corridor. The visual aspect of the corridor could be improved by cosmetic changes to the overhead equipment, without closing the line.

Newcastle railway station has a long and wide footprint because its bus interchange, platforms and sidings are located in close proximity, and the former level crossing between platforms and sidings has been closed. All proposals for a relocated terminus and bus interchange with the necessary capacity have been found wanting. The rail corridor west of Newcastle yard, including the junction at Broadmeadow, is constricted to a width just adequate for present operational requirements, with a few unhelpfully located exceptions. It intersects with roadways in inconvenient places that would have major safety and traffic congestion issues. In the case of the Wickham interchange, the price of safety is the closure of the Beaumont Street and Railway Street level crossings, with a heavy impact on local traffic and major east west roads.

The heavy rail corridor has significant future capacity expansion potential without the need for expensive widening of the corridor. This cannot be matched by other transport modes. The intended rezoning does not mean that transport requirements between Wickham and Newcastle have limited growth potential.

Put briefly, the truncation of the Newcastle rail line is unlikely to achieve more than a marginal improvement in permeability in the east end, in return for heavy additional pressure on road capacity across all three CBD precincts and the Hamilton area. All this comes at substantial financial cost, and ensures a loss of future transport capacity.

The NSW government apparently classifies most of the issues raised here as “operational matters”, and intends to delegate consideration of the problems to expert groups. It is to be hoped that these expert groups will report their findings comprehensively and publicly. NURS planners would be wise to keep open and flexible minds, in case the problems should be found to be fundamental and intractable.