ACNU08

2008 NATIONAL CONGRESS OF THE AUSTRALIAN COUNCIL FOR NEW URBANISM

Brisbane

6th - 9th February, 2008
Planning Challenges for Rail Transit In Established Low Density Settlement, and for New Corridors

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Tension between Current Built Responses and TOD Expectations

Northwest Corridor

Southwest Corridor - Current Dilemmas and Future Possibilities
New MetroRail Project Scope

93 new Railcars

Nowergup Car Depot

4km NSR extension

Two NSR stations

New Thornlie Station

Bored tunnels under Perth

Two underground City Stations

71km SSR extension

Nine SSR Stations

Virtually doubles the system

Cost $1.663B
Perth CBD Underground Railway
Freeway Constraints

- Major north–south artery is the Mitchell Kwinana Freeway system
- Limited to 3 lanes in each direction
- Already choke points
- Future viability dependent on public transport effectiveness
A traditional mass transit railway achieves its “mass” through penetration of high urban densities.

In low urban densities the “masses” must be brought, or come to the railway in their own way.

The following provisions have been made in Perth:

- Strategically located stations at wider intervals than older systems
- Well designed, large stations with good bus & car / rail interchanges
- Frequent services
- Provide high standard rolling stock
Typical Rapid Transit Station Catchment Yield

Warwick Station

91% of Total Catchment Area Beyond Walking Range

Drive or bus to station
- ~91% of station patronage comes from the orange area

Walk to station
- ~9% of station patronage comes from the blue area

Park and Ride
- Accommodates 28% of station patronage (mainly from the orange area)
<table>
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<th>Park 'Ride</th>
<th>Car Drop Off</th>
<th>Bus</th>
<th>Other</th>
<th>Total</th>
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<tr>
<td>Actual</td>
<td>27%</td>
<td>23%</td>
<td>38%</td>
<td>12%</td>
<td>Say 4,500</td>
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<tr>
<td>Predicted</td>
<td>30%</td>
<td>66%</td>
<td>4%</td>
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Cockburn Central

- Station positioned adjacent to future Town Centre, not shopping complex
- Transfer Penalty argument rejected
- Bus deck over platform rejected as it would isolate commuters
- Bus interchange integrated with the Town Centre
- Car set down integrated with Town Centre
- Car Parking allocated within Town Centre
Optimising TOD in a Greenfield Station Site

Concurrent 12,300 within 1000 metres

**Land Uses**

- **R60 (21Ha)** - 2520 people
- **R40 (91Ha)** - 7280 people
- **R20 (65Ha)** – 2600 people
- **Commercial/Retail (3Ha)**
- **Education (2Ha)**
- **Park and Ride (2Ha)**
Optimising TOD in a Greenfield Site Potential Concept for Early Station Implementation

<table>
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<th>Park ‘Ride</th>
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<th>Bus</th>
<th>Walk/Cycle</th>
<th>Total</th>
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<td>Stage One</td>
<td>560</td>
<td>470</td>
<td>770</td>
<td>100</td>
<td>1900</td>
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<td>Stage Two</td>
<td>560</td>
<td>470</td>
<td>770</td>
<td>800</td>
<td>2600</td>
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Tension between Current Built Responses and TOD Expectations

Jindalee/Brighton and Alkimos Structure

Indicative Design by ESD and Taylor Burrell Barnett
Jindalee - Comparing Employment

**Conventional Design**
- Population: 29,259
- Dwellings: 9,753
- Jobs Needed: 14,629
- Proposed Jobs: 2,612
- Containment Factor: 18%

**Liveable Neighbourhoods Design**
- Population: 30,234
- Dwellings: 11,768
- Jobs Needed: 17,652
- Proposed Jobs: 11,306
- Containment Factor: 64%
But no rail yet to Brighton, and now too low density and not enough jobs, so no station.
Perth’s Southwest Growth Corridor

Note: the Western Australian Planning Commission (WAPC) has not take a position on the design or funding of this project, whose plans ESD and Taylor Burrell Barnett designed in 2007. Significant environmental site analyses have yet to be completed, which will inform the feasibility of the plans for this growth corridor for about half a million people.
Heavy Rail divides, except at its stations

Light Rail attracts along its route, with more stops
How can we reconcile local habitat preservation, in conflict with TOD catchments for the new Perth to Mandurah Railway?

Which is more important: preservation this very important local habitat, or possible habitat extinction later, due to Climate Change and sea level rises?

Note: the Western Australian Planning Commission has not take a position on this project
Is this a new inland TOD corridor for 300,000 people?

Which public transport mode will work better?

How do we ensure sufficient performance from this urban structure?
How do we ensure sufficient performance from this urban structure?

**Draft Policy Framework**

- Minimum resident/worker densities per township
- Strong links to regional centres for jobs and services there
- Delivery of public transport infrastructure concurrent with development
- Priority for TOD over local habitat
Conclusions

Dilemma of funding Perth to Mandurah Railway, or Northwest Corridor Railway (but not $$ for both)

Park & Rides are important, when cornered in low density.

Risks across Australia of a disconnect between public transport infrastructure planning, its funding, its timing, and regulation to ensure sufficient resident/worker densities and urban structure.
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