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Planning Challenges for Rail Transit In Established Low Density Settlement, and for New Corridors

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Contents of this Presentation

- Perth Public Transport Context and Built Responses
- 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

Public Transport Authority

NewMetroRail
Making the Connection

Southern Suburbs Railway – Kwinana Freeway

Public Transport Authority

NewMetroRail
Making the Connection

Perth CBD Underground Railway

NewMetroRail
Making the Connection

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

Application of Mass Transit Rail to Perth

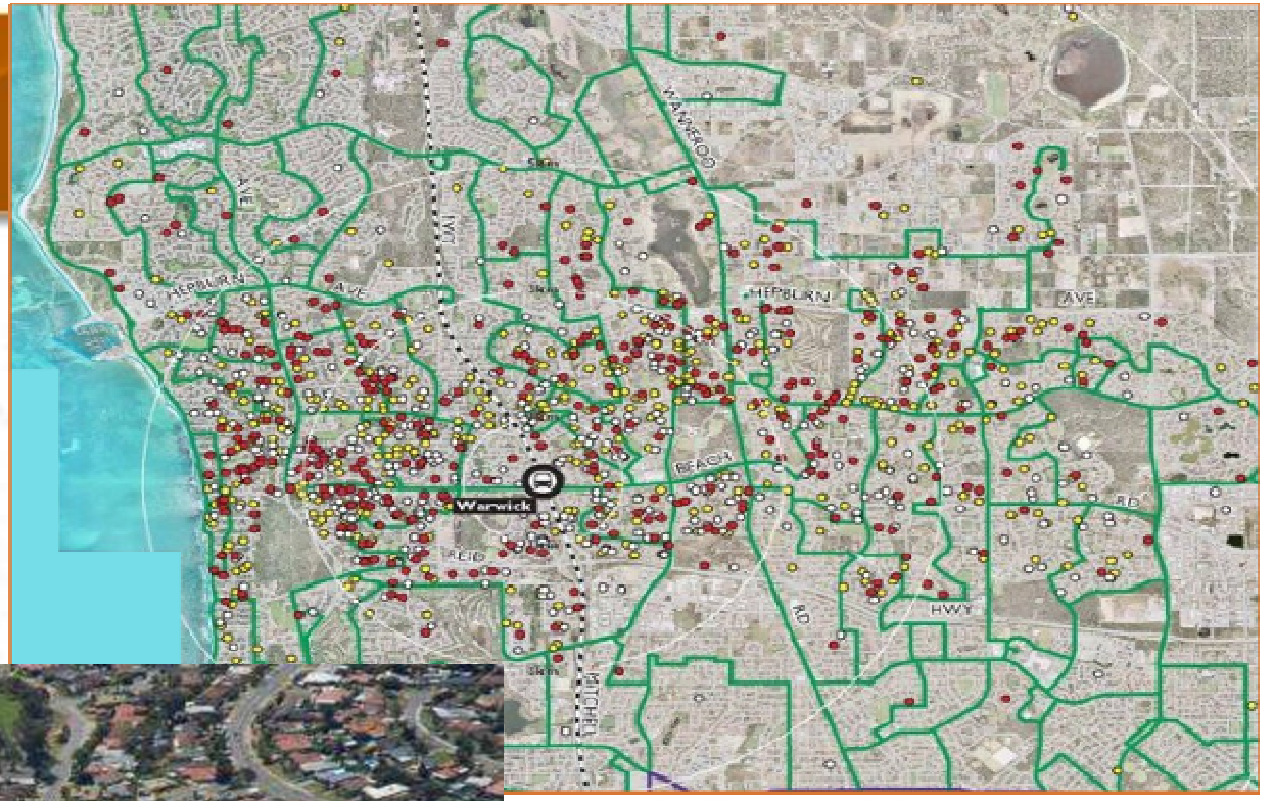
A traditional mass transit railway achieves its “mass” through penetration of high urban densities.

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

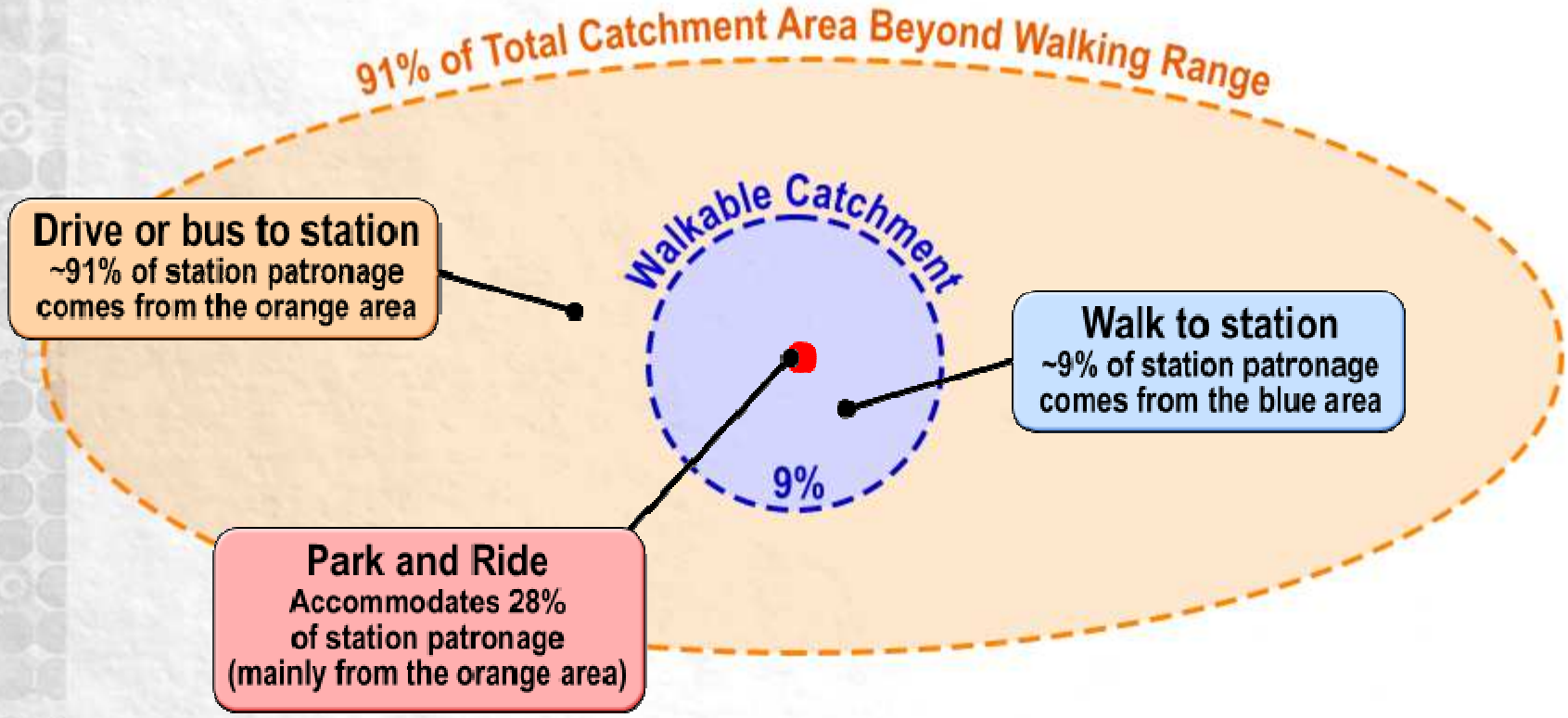
- Strategically located stations at wider intervals than older systems
- Well designed, large stations with good bus & car / rail interchanges
- Frequent services
- Provide high standard rolling stock

Northern Suburbs Railway
Warwick Station



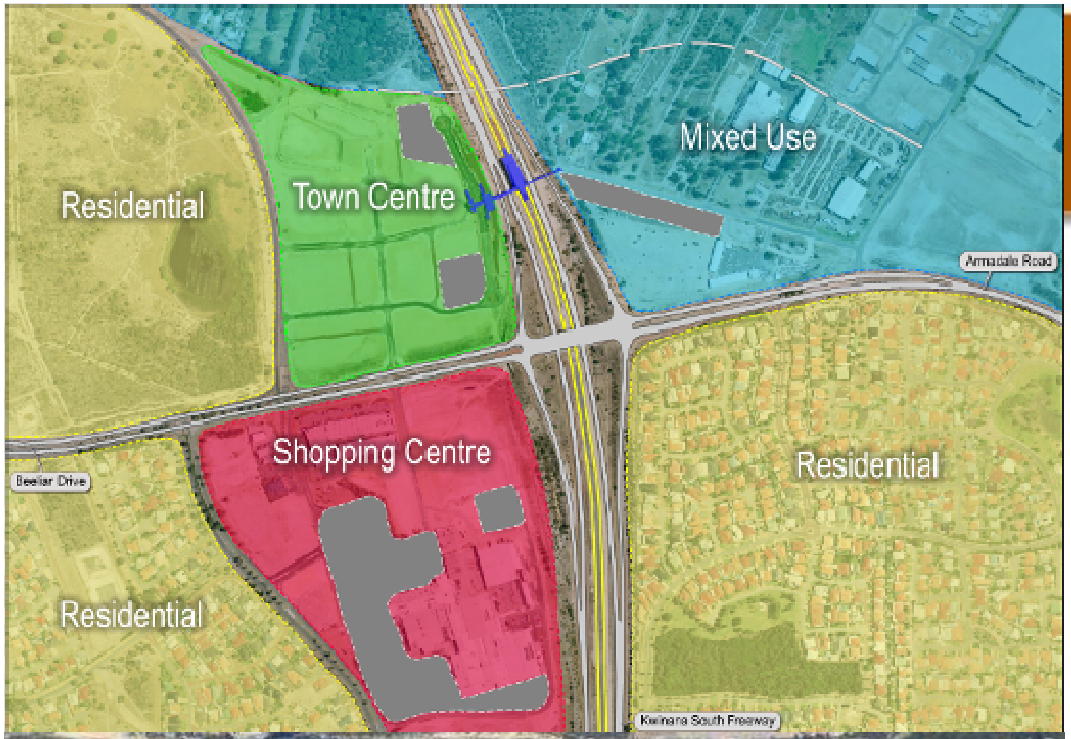
NewMetroRail
Making the Connection

Typical Rapid Transit Station Catchment Yield Warwick Station



Warwick Station
Actual vs Predicted Modal Access

	Park ‘ Ride	Car Drop Off	Bus	Other	Total
Actual	27%	23%	38%	12%	Say 4,500
Predicted	30%		66%	4%	



NSR Lessons Applied to th Cockburn Central Concept

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

NewMetroRail

TOD – NSR - Clarkson

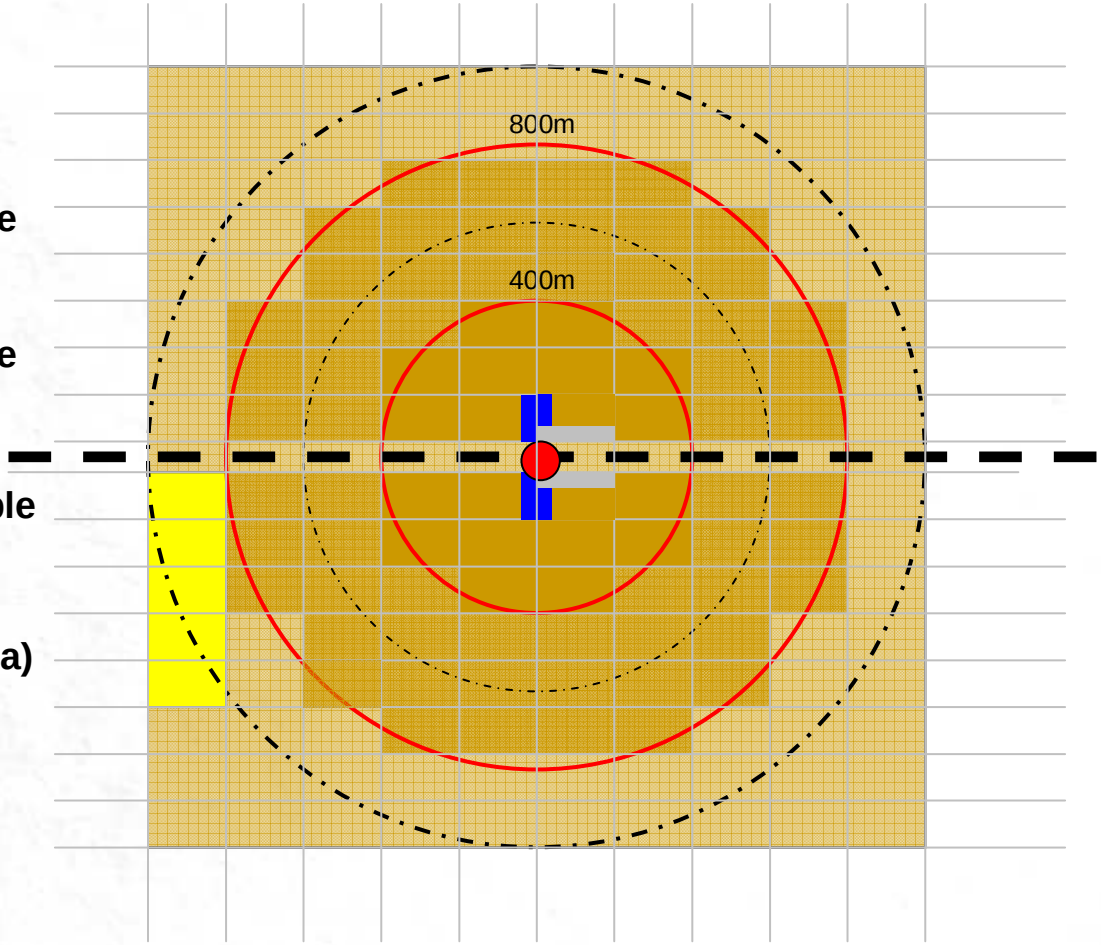
NewMetroRail
Making the Connection

Optimising TOD in a Greenfield Station Site

Concept – 10,000 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)

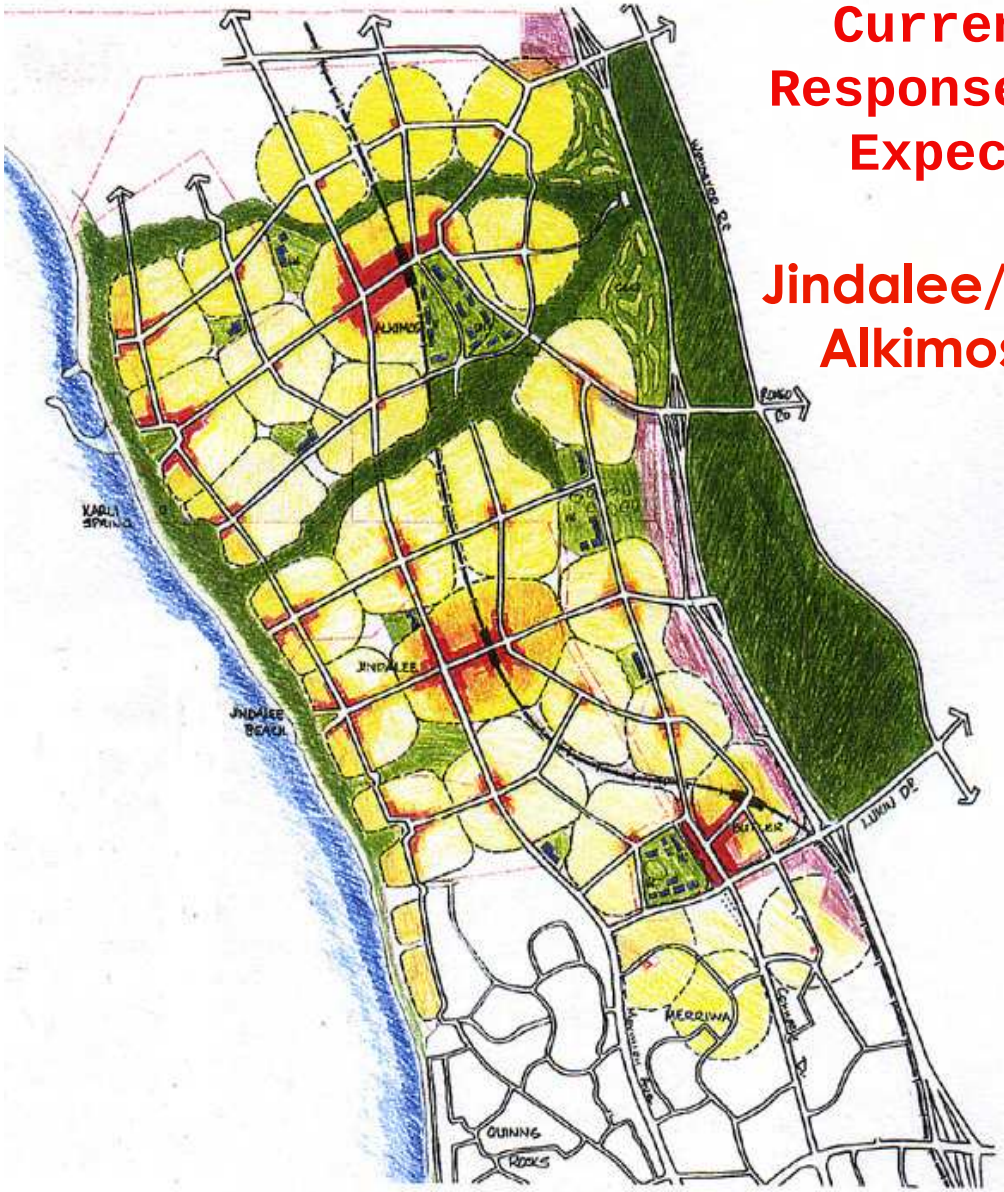


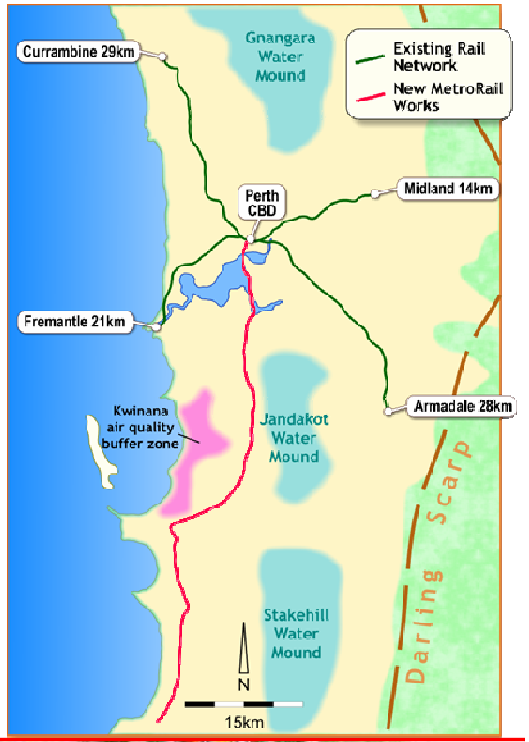
Optimising TOD in a Greenfield Site Potential Concept for Early Station Implementation

	Park 'Ride	Car Drop off	Bus	Walk/Cycle	Total
Stage One	560	470	770	100	1900
Stage Two	560	470	770	800	2600

Tension between Current Built Responses and TOD Expectations

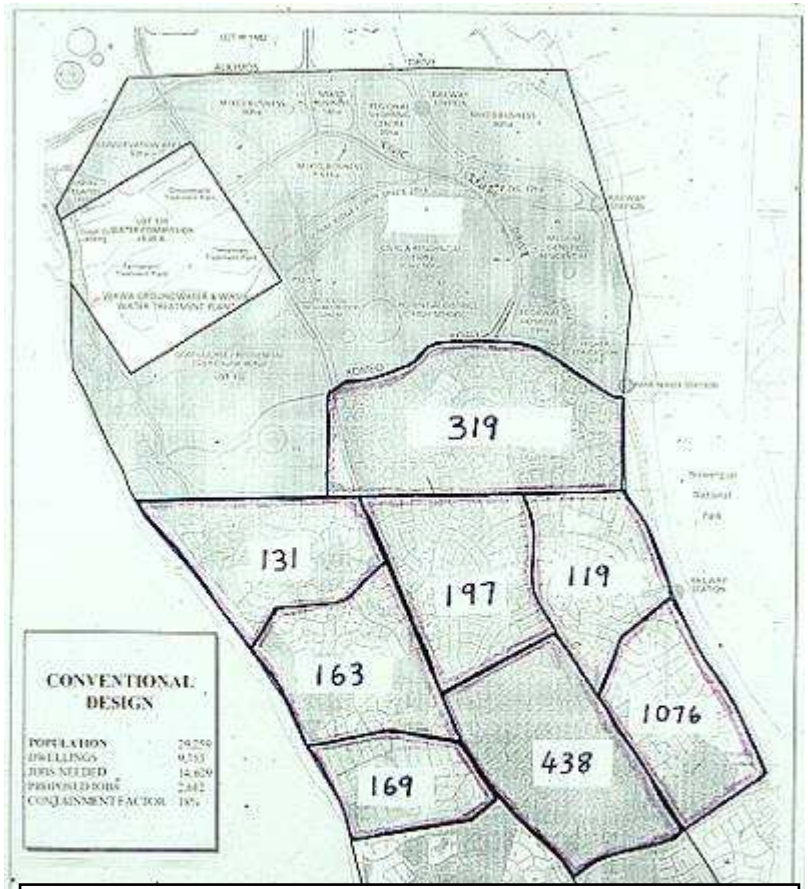
Jindalee/Brighton and Alkimos Structure



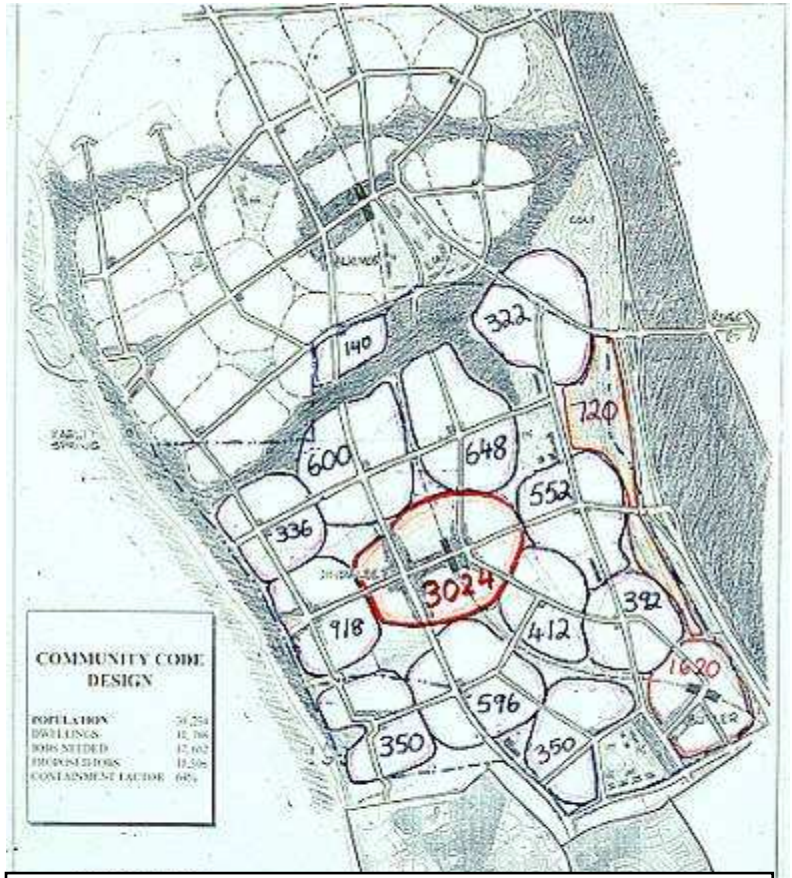


Indicative Design by ESD and Taylor Burrell Barnett

Jindalee - Comparing Employment



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

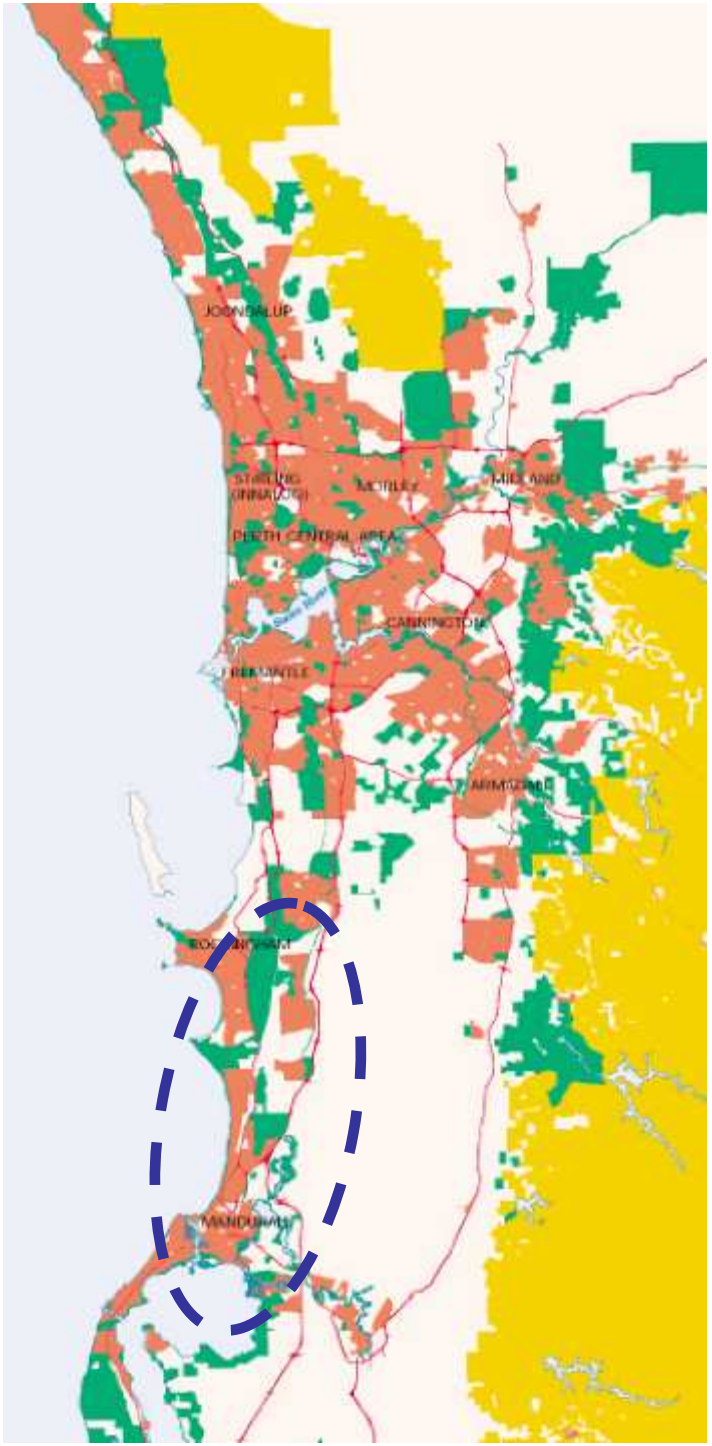


Liveable Neighbourhoods Design	
Population	30,234
Dwellings	11,768
Jobs Needed	17,652
Proposed Jobs	11,306
Containment Factor	64%

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

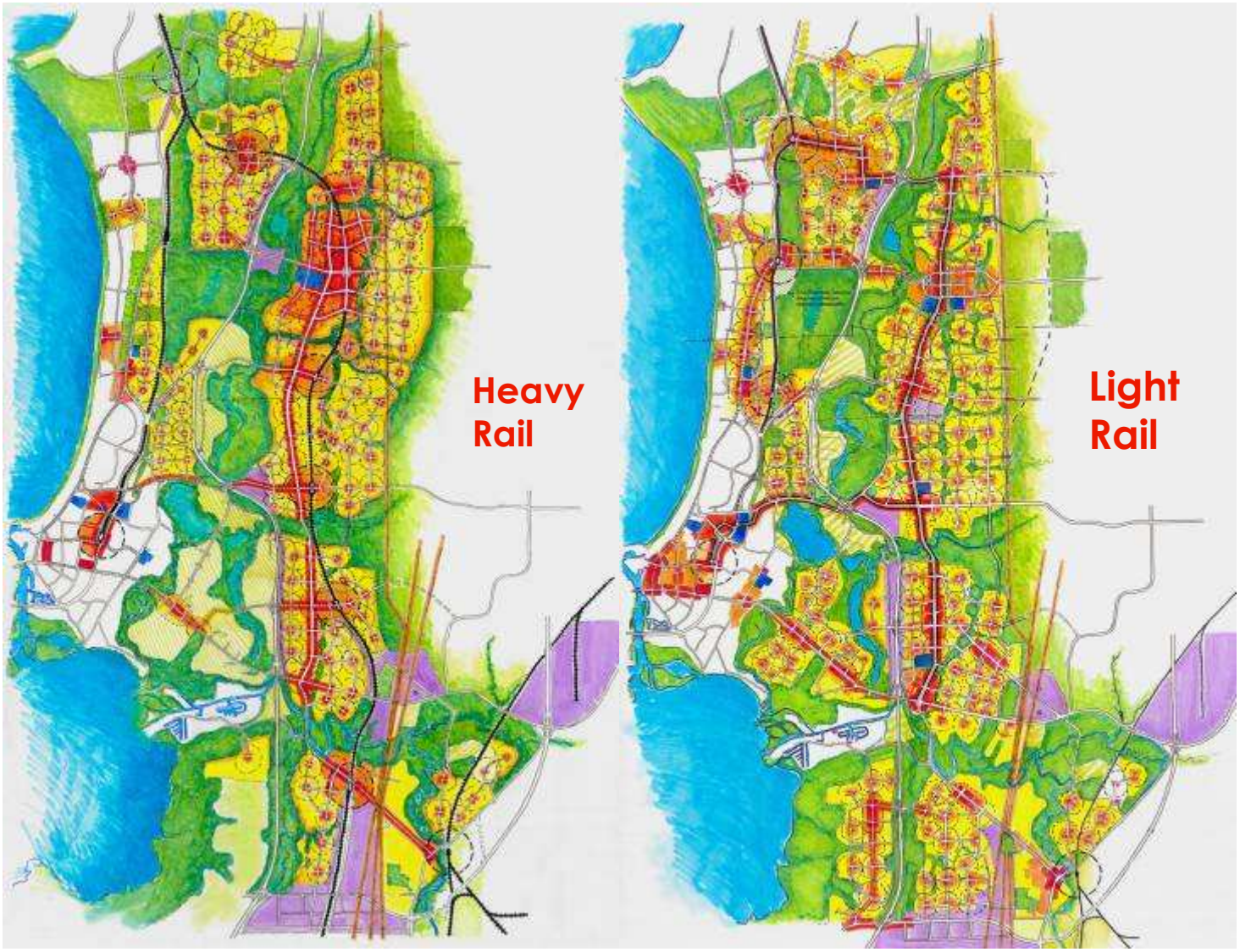
How can we reconcile local habitat preservation, in conflict with TOD catchments for the new Perth to Mandurah Railway?

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?

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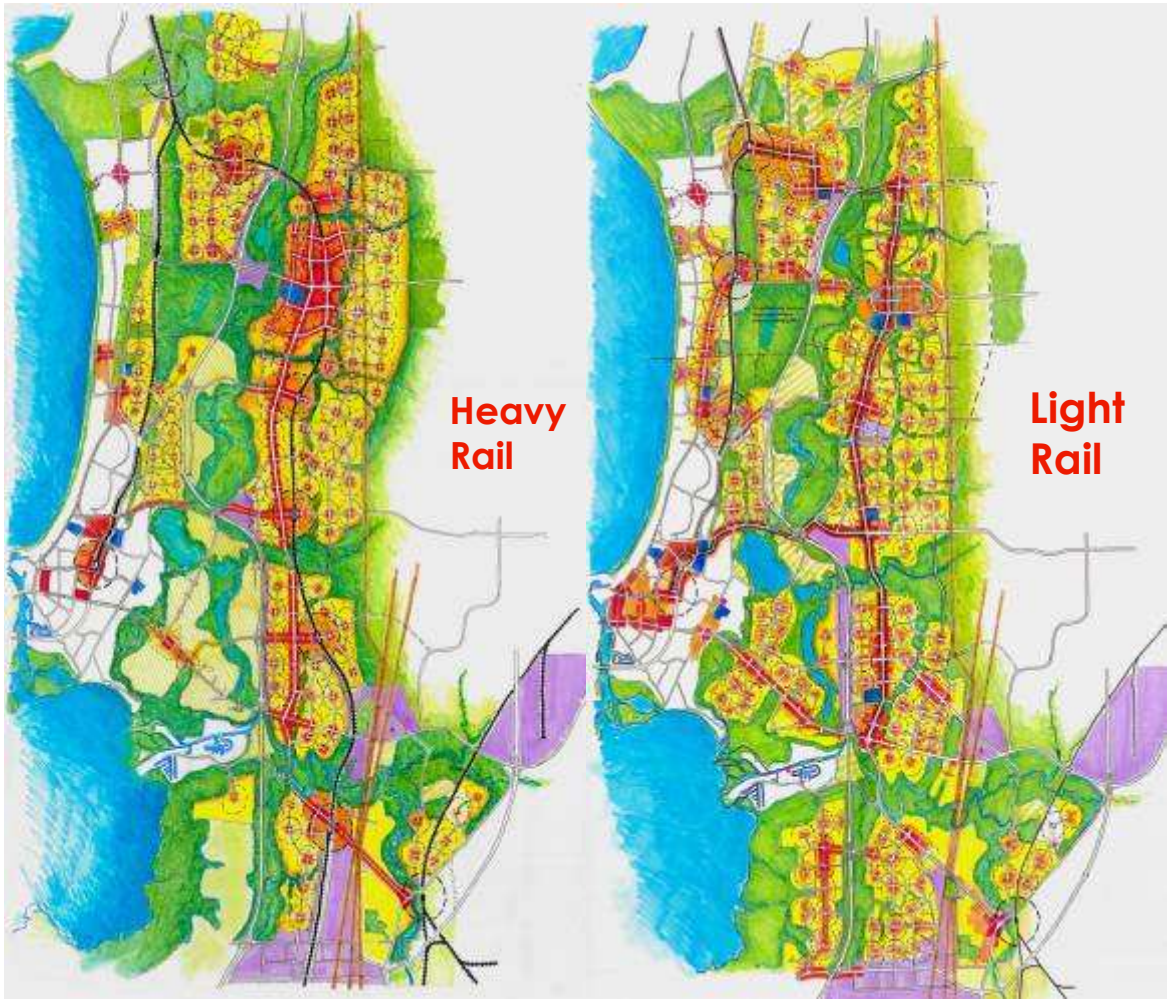

Draft Policy Framework

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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