TRACKLESS TRAMS
Why all the fuss?

By
Peter Newman
Professor of Sustainability
Curtin University and
Member of St Pauls. Anglican





The last train to Fremantle 1979…won back in 1983



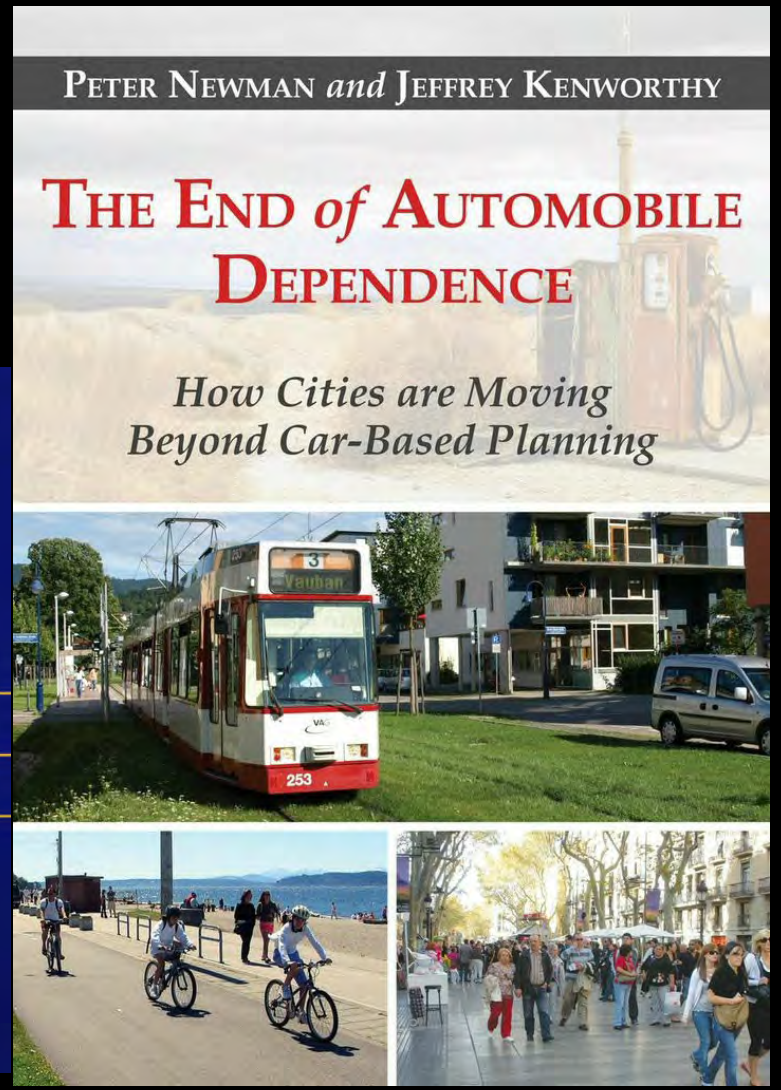
Created a career as a transport academic and planner….

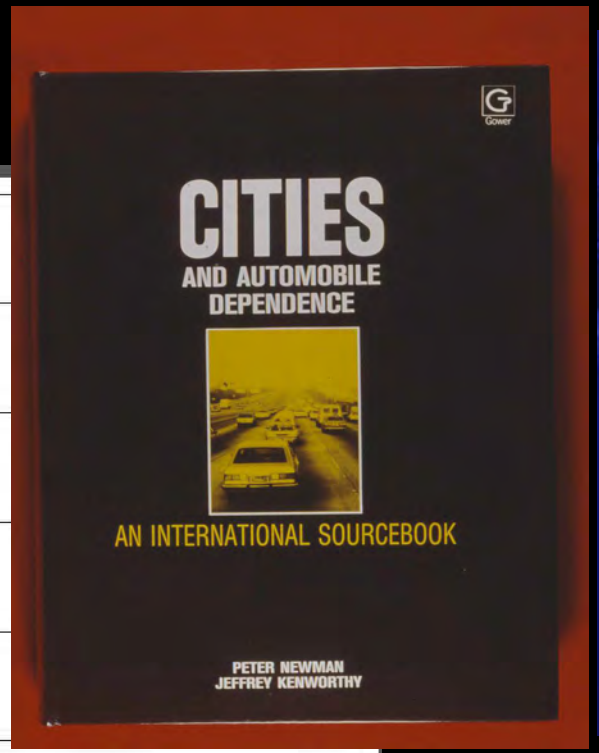
2015

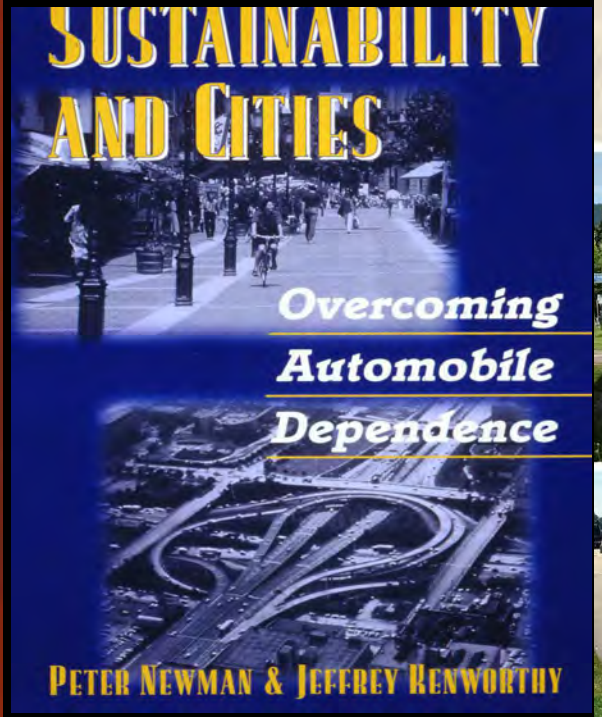
‘CAR DEPENDENCE…’

The Rise and Fall of an Empire – a Trilogy 1989

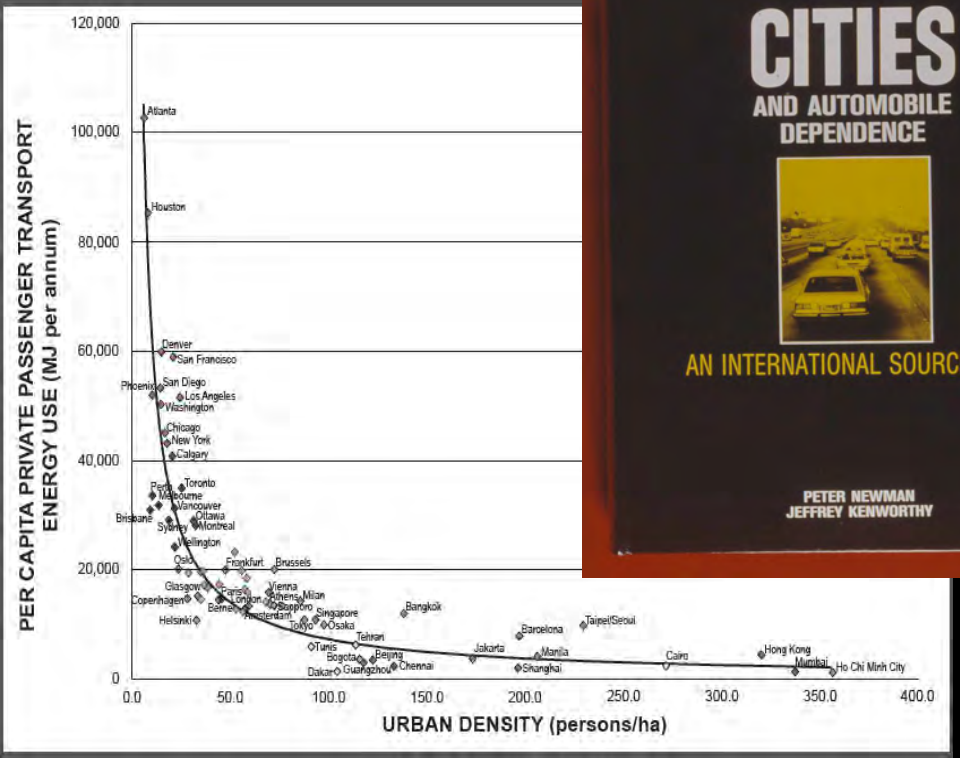
1999
Launched in
White House





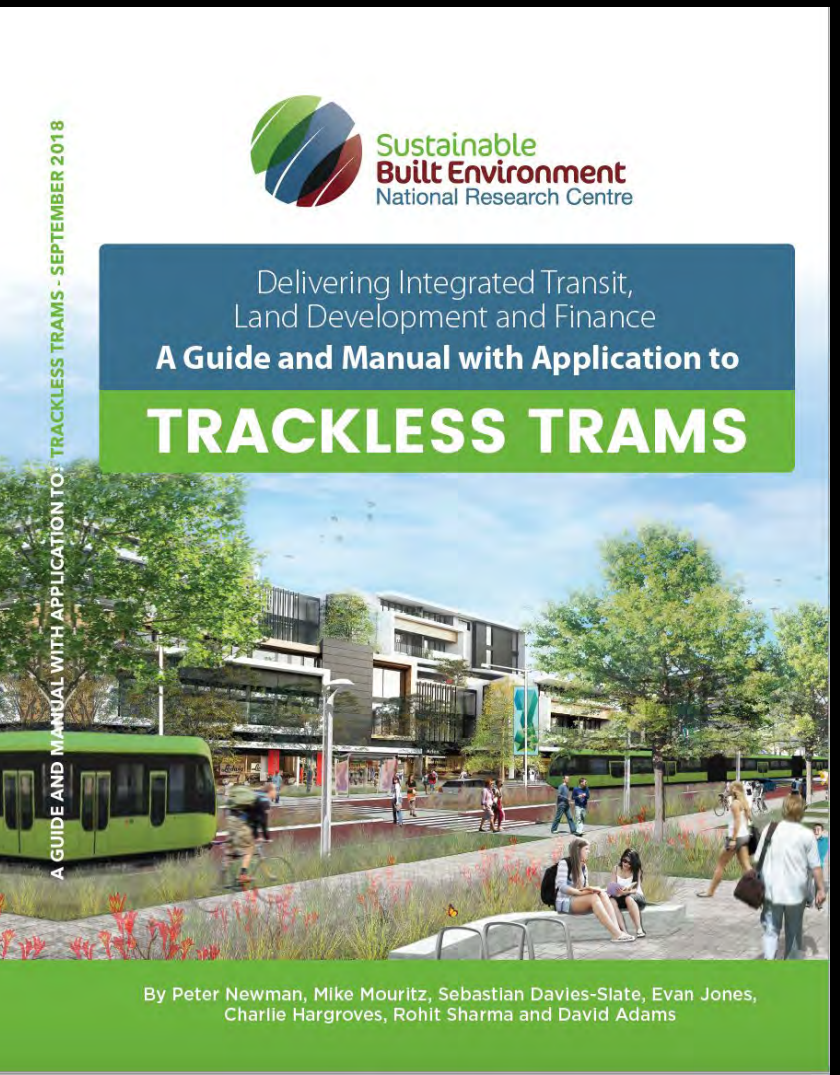


FUEL



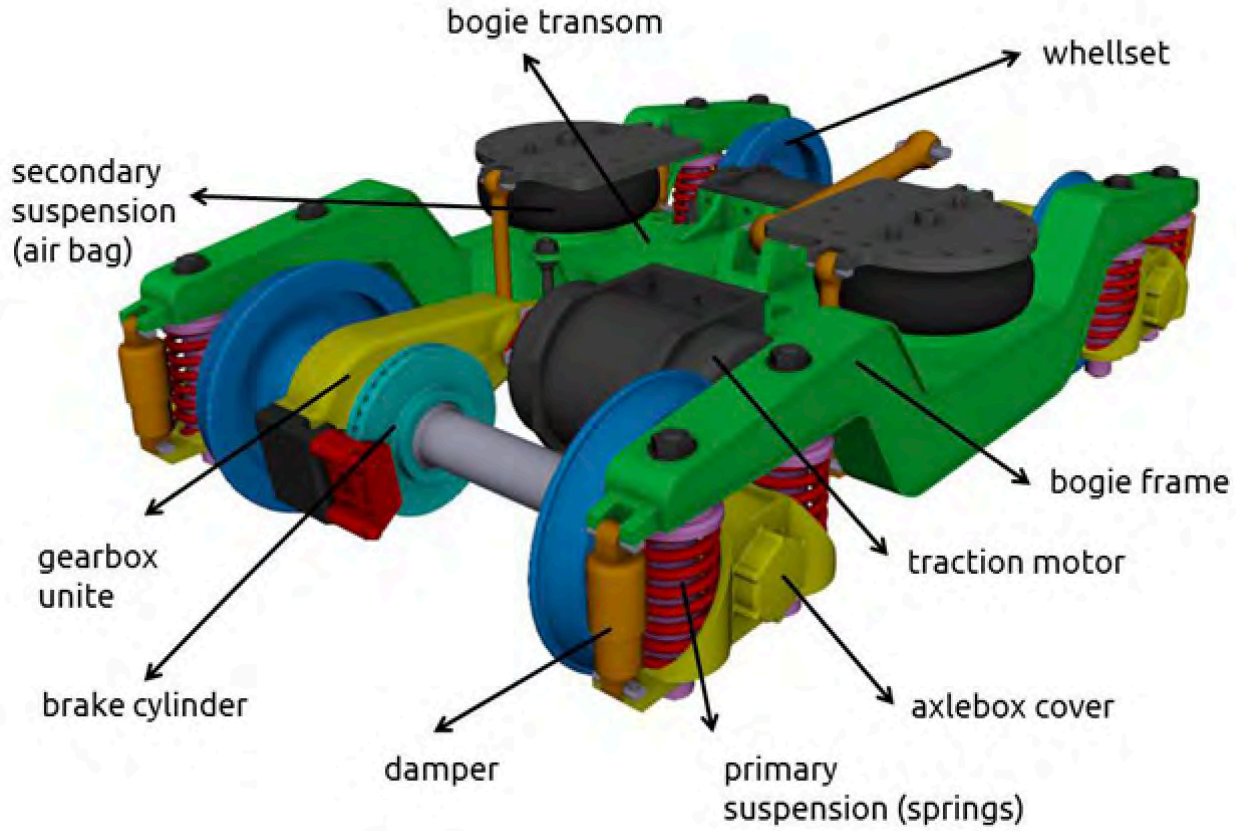
DENSITY

TRACKLESS TRAMS…7 years ago.
‘Its just a bus….’ ‘You cant stop sprawl….’





CRRC took 6 innovations from Hi Speed Rail and transformed a bus…









TRACKLESS TRAMS
– 6 year SBEnrc project

Case studies in Perth, Wyndham, Liverpool, Townsville, Sunshine Coast, Philadelphia, Chandigarh and Bulawayo



Perth was given task of certifying



Net Zero Transit Symposium

21 and 22 November 2023



Trackless Trams

A Stirling way to connect

Hosted by: City of Stirling *City of Choice* Curtin University

Jump on Board!

- Attend the Net Zero Transit Symposium
- Hear about sustainable, cutting-edge transit solutions
- A program set to inspire and drive positive change in the industry
- Plus – you can take a ride on the Trackless Tram and see this innovative technology first-hand!

Trackless Trams

A Stirling way to connect

Australian First Trial

Project Partners

City of Stirling
City of Choice

Curtin University

ITSG
Infrastructure Technology Solutions Group

CRRC

上海电气
SHANGHAI ELECTRIC

The Trackless Tram arrives…



It’s off to Stirling!

- After travelling more than 7,000km from Shanghai
- The first Trackless Tram in Australia
- Set for a trial in November at the City of Stirling



What is the Trackless Tram?

- Net zero emissions vehicle
- Electric or Hydrogen powered
- Capacity for 150 passengers
- Entry on both sides
- Access for wheelchairs, e-scooters & surfboards
- Bi-directional
- Trial will be conducted at the City of Stirling

City of Stirling

Trackless Trams

A Stirling way to connect



Minister is not on board

JAKE DIETSCH

Transport Minister Rita Saffioti is not along for the ride when it comes to Stirling's trackless tram ambition.

The City of Stirling is currently testing a 'net-zero' tram on loan from Shanghai that has driver carriages at the front and back — meaning it does not have to turn around — runs on rubber, giving it a smooth ride, and would have priority through traffic.

The city hopes the trams will travel a 7km route from Glendalough train station along Scarborough Beach Road to the sand, removing some of the 30,000 cars currently clogging the road each day.

Stirling mayor Mark Irwin has said the city is not a public transport authority and hopes State agencies would take over in running the trams.

But Ms Saffioti dismissed the idea as an "experiment" and a waste of money.

"This experiment had the backing of the previous Liberal and National Federal government but it's not something we support," she said.

Ms Saffioti said the State had an issue with the trams being imported from China, rather than being made in WA.

"We do not support fully importing rail cars or buses for our network," she said.

"The State Government's focus is on completing our existing Metronet projects, delivering our locally manufactured C-series trains, transitioning our locally made bus fleet to fully electric and planning a realistic and deliverable mid-tier strategy.

"We can't be wasting State taxpayers' money on fully-imported and untested technology, that likely doesn't meet Australian Design Rules, may not be safe for use on the road network and would require huge investment to deliver supporting infrastructure.

"If this is a priority for the City of Stirling they are welcome to do it."



A trackless tram is hoped to one day run from Glendalough train station to Scarborough Beach. INSET: Amber Sumpton, integrated planning and reporting officer. Pictures: Jackson Flindell

Mr Irwin said the city was playing its role in strategic planning and was confident the State could be won over.

"This model (currently undergoing tests) won't be the model running along the road, it will be one or two versions on," he said.

"I'm pretty sure the State Government will have a level of excitement for this technology."

If the bold proposal takes off, they would be the the first trackless trams in Australia.

"This needs to be sexy enough, it needs to have the efficiency, it needs to have the trust of the community that it will have priority through traffic lights so that when people do move into those planned apartments along Scarborough Beach Road, they sell their second car," Mr Irwin said.

The net zero-emissions trams, which can carry about 170 people, can be charged through a hydrogen fuel cell, lithium battery or a supercapacitor that can power up the vehicle in minutes. The tram for testing, which costs about $3.3 million each, is on loan from Chinese manufacturer CRRC.

Mr Irwin said the project could involve road widening, but the city would look to find the "path of least resistance" by designating one lane as a priority lane for the trams "exactly like light rail".

The city does not know the cost of the project, which it expects could take up to 10 years to realise, but believes it would be cheaper than light rail. The mayor said if tests showed extensive road resurfacing was not required, it could be built for as little as 10 per cent the cost of light rail.

"It's about bringing all the different agencies that deal with public transport — Main Roads and the State Government itself — along on the journey," he said.

Where does local government want it to go?

Stirling have a Business Case completed on Scarborough to Glendalough.

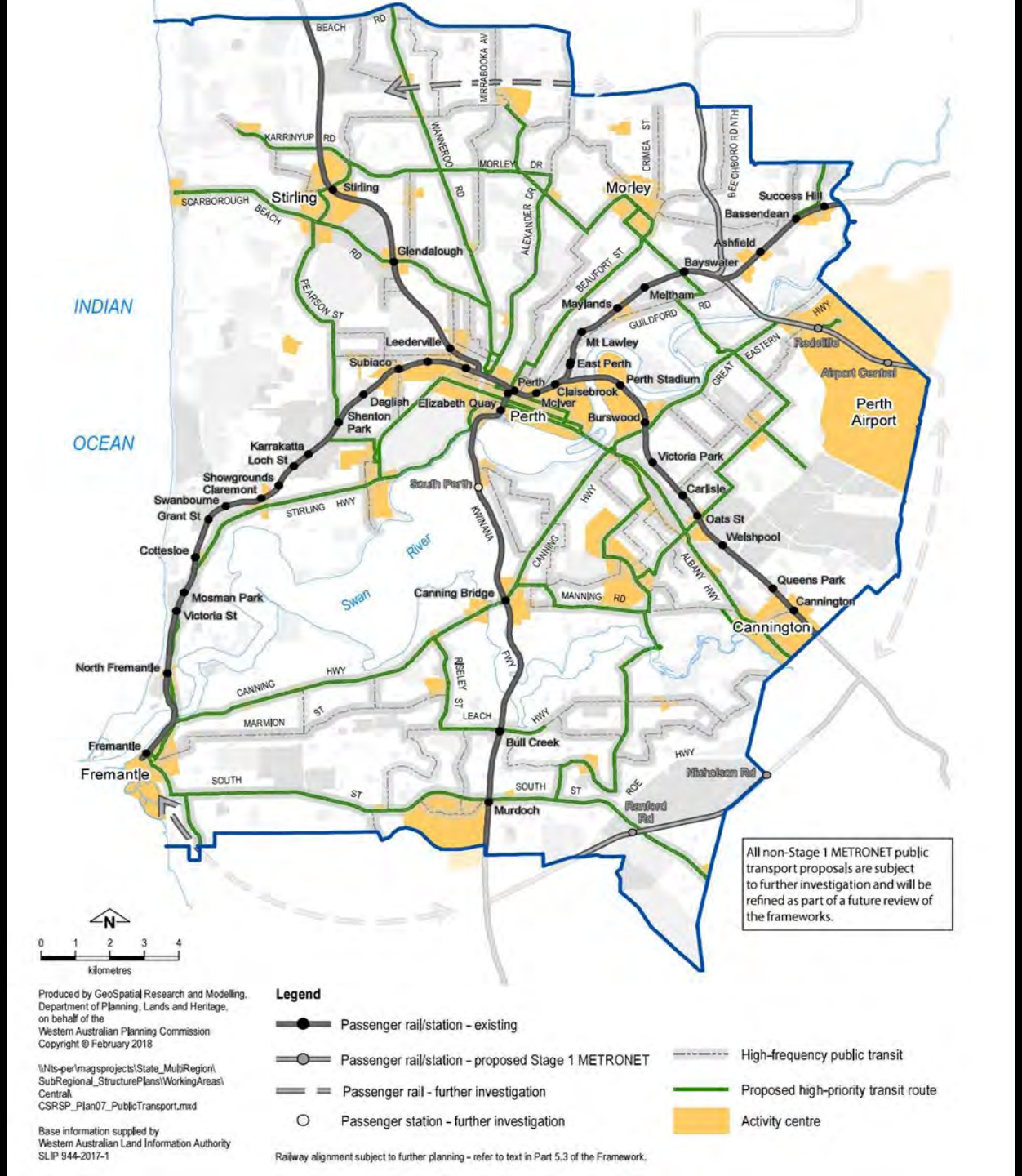
Trackless Trams

A Stirling way to connect



Green routes… Transit and Density priority…not car capacity

Drafted by State Government



What Local Govt want….

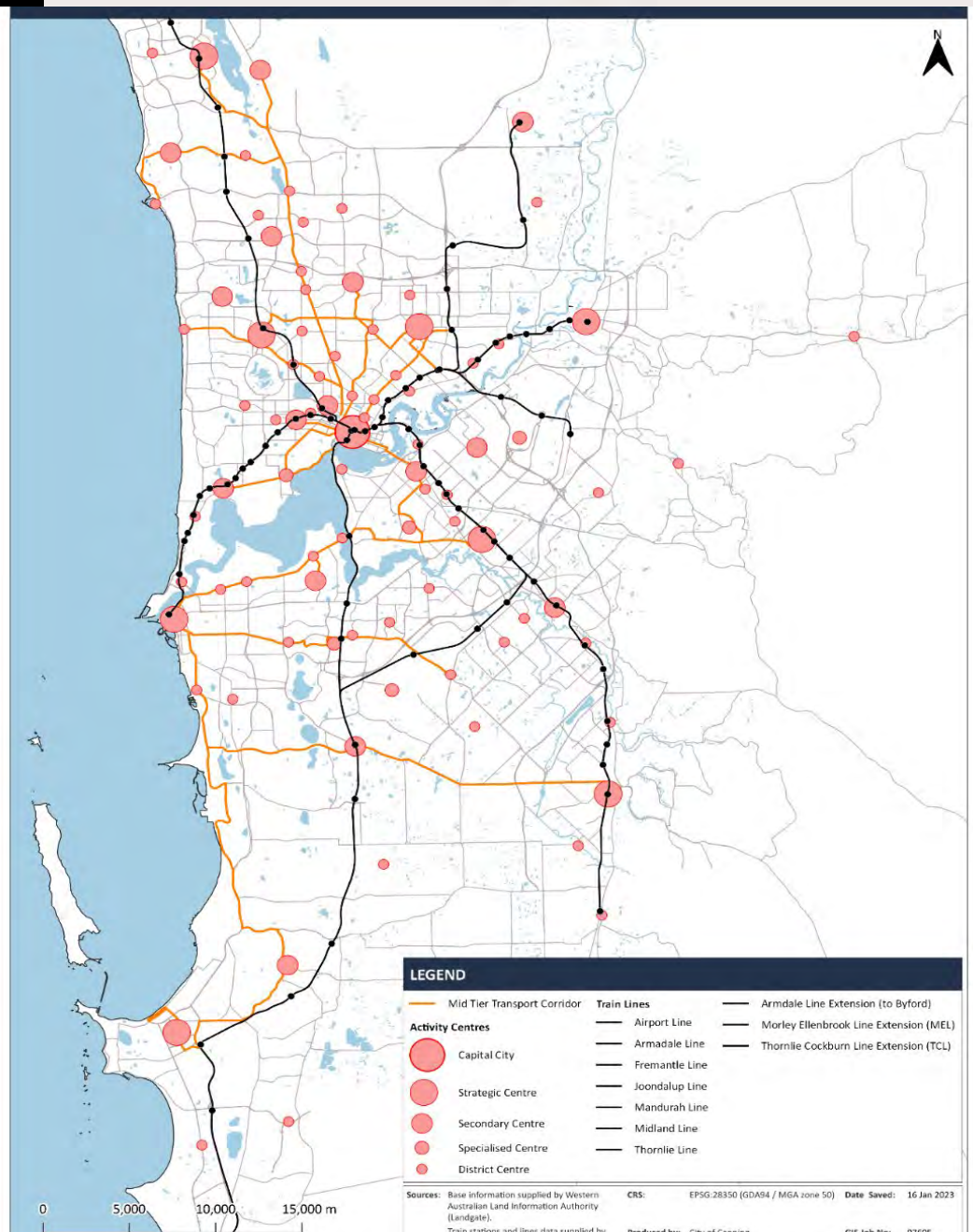


Mid-Tier Connections across the corridors.

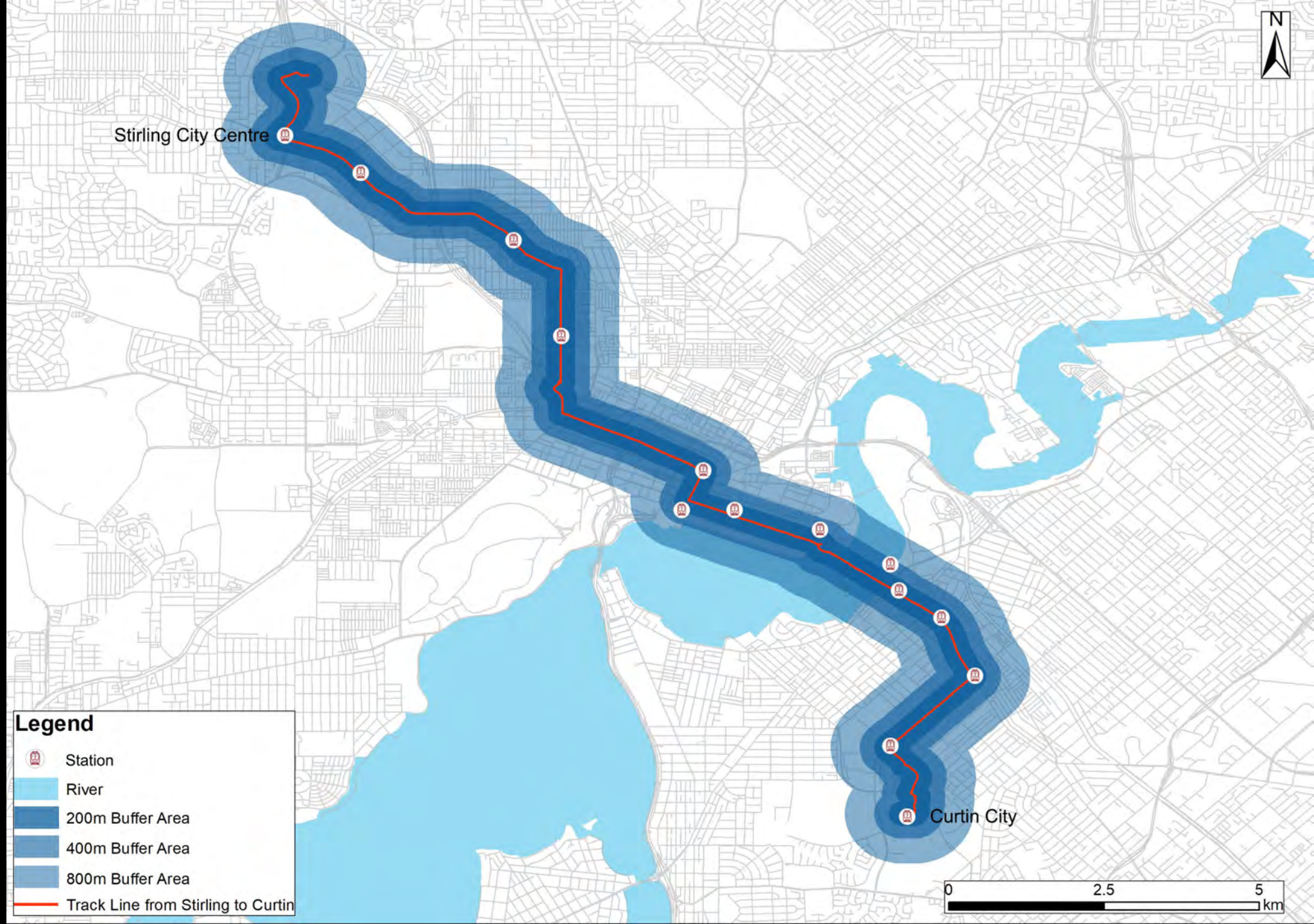
Urban regeneration opportunities

Movement and Place Strategy

What State Govt want…



Perhaps next….



Stirling to Curtin: Key Development Areas

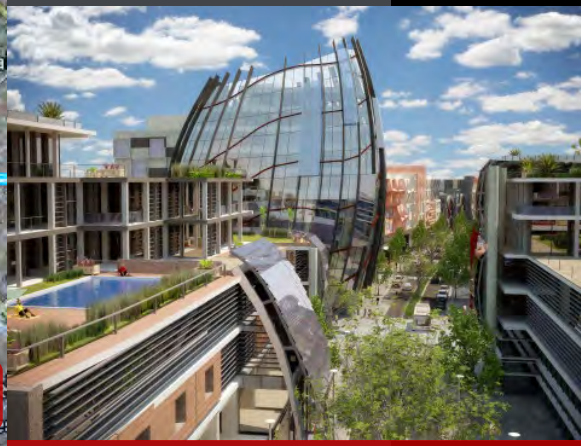




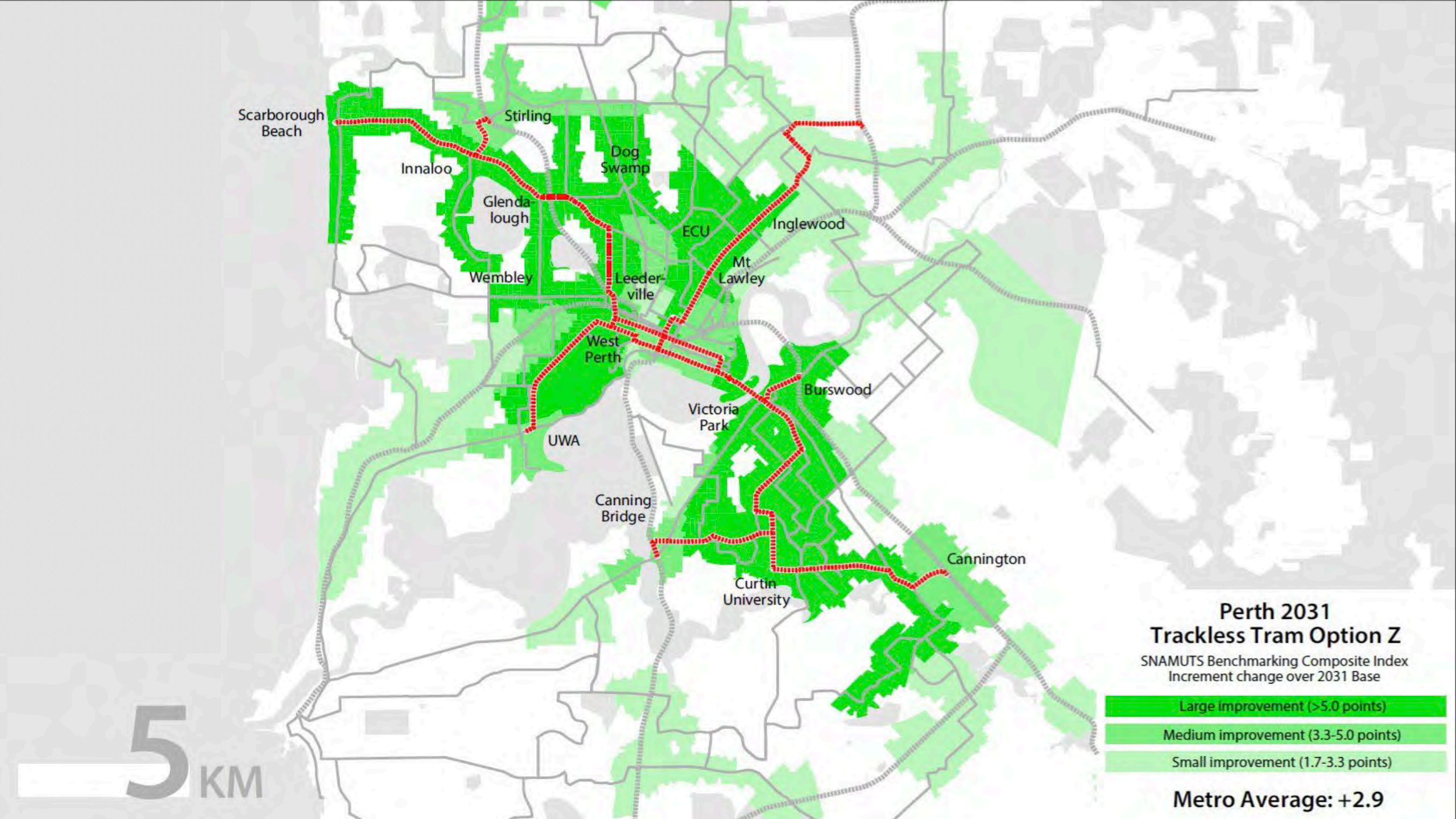
Stirling City Centre



Riverside Project



Bentley Technology Precinct


Scarborough Beach
Stirling
Innaloo
Dog Swamp
Glenda-lough
ECU
Inglewood
Mt Lawley
Wembley
Leeder-ville
West Perth
Burswood
Victoria Park
UWA
Canning Bridge
Cannington
Curtin University
5 KM
Perth 2031
Trackless Tram Option Z
SNAMUTS Benchmarking Composite Index
Increment change over 2031 Base
Large improvement (>5.0 points)
Medium improvement (3.3-5.0 points)
Small improvement (1.7-3.3 points)
Metro Average: +2.9

Trackless Tram right into the heart of Curtin's new precinct.



• FREMANTLE TO MURDOCH - TRACKLESS TRAM CORRIDOR

Knutsford
- 1000+ dwellings
- Yield $319M

Fremantle Station
- 400+
- Yield $119M

Fremantle Hospital
- 700+ dwellings
- Yield $229M

Beaconsfield
- 900+ dwellings
- Yield $245M

Hilton
- 800+
- Yield $161M

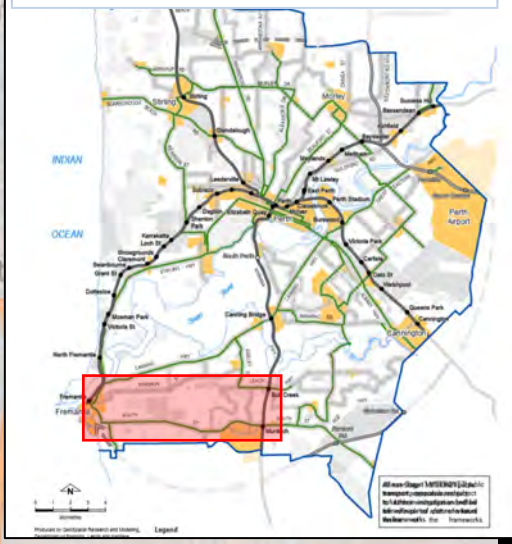
Kardinya
- 1000+ dwellings
- Yield $252M

Murdoch Stage 2
- 1000+ dwellings
- Yield $288M

Benefits of Trackless Tram Corridor

- ✓ Value creation of ~ $1.8B
- ✓ Leverages developmental sites
- ✓ Cost effective – 10% cost of light rail
- ✓ Implementation in 12 months
- ✓ Quality ride, low emissions

2050 Public Transport Network



Key

Corridor
Specific Development site
Development of vicinity


WGV by DevelopmentWA
DevelopmentWA
White Gum Valley

Regenerating tram fabric….Melbourne





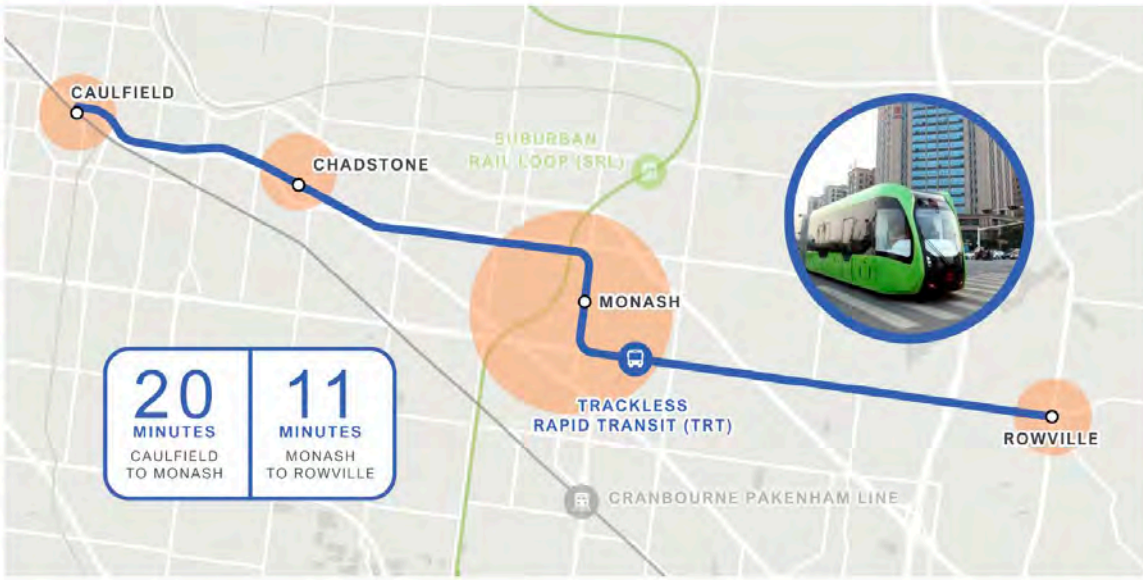


CAULFIELD ROWVILLE TRACKLESS RAPID TRANSIT
THE ROUTE

MONASH University

VICINITY CENTRES





MELBOURNE SOUTH EAST CORRIDOR

- Dandenong Road, Ferntree Gully Road and Blackburn Road between Caulfield and Monash Clayton (via Chadstone), and then via Wellington Road to Rowville
- Interchange with the Suburban Rail Loop (SRL) station at Monash



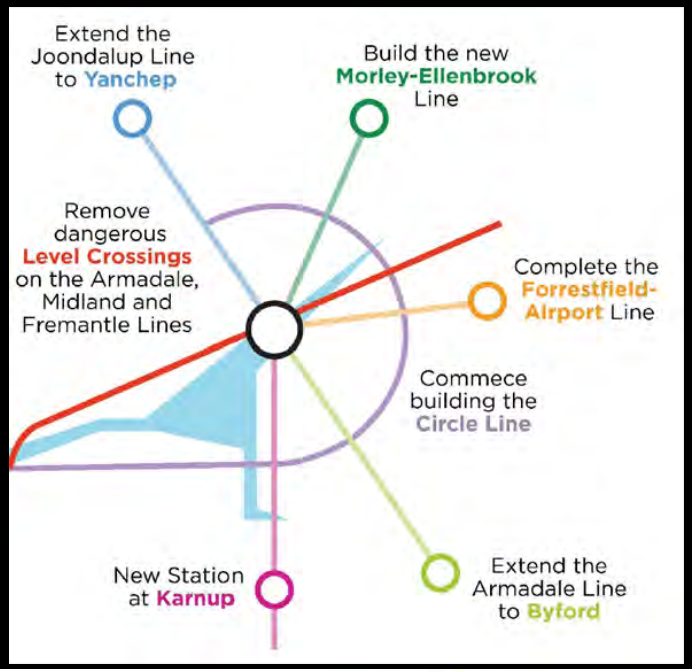
How do we do it in car-based suburbs like Perth?





Metronet and Metrohubs…big on trains but not much happening on hubs?





WA LABOR METRONET
CONNECTING PERTH SUBURBS

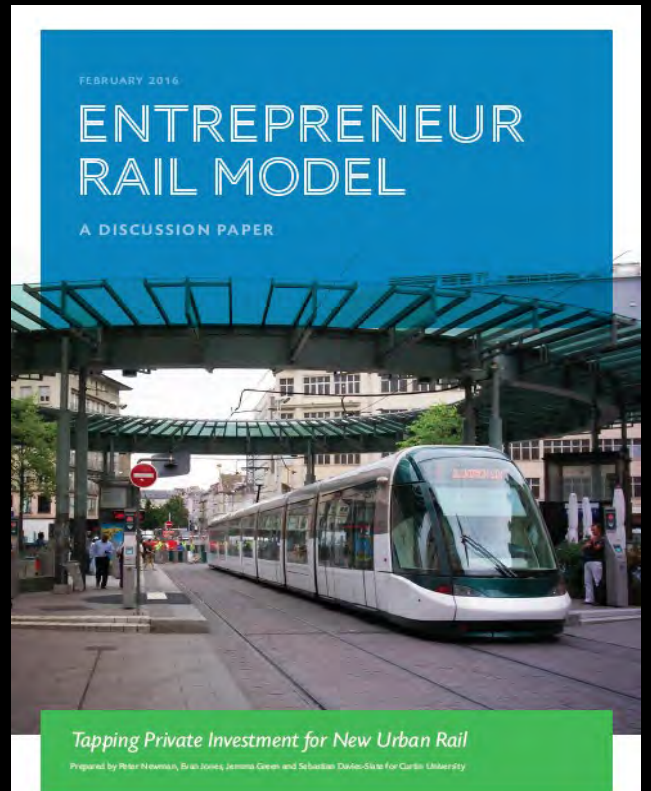


METROHUBS

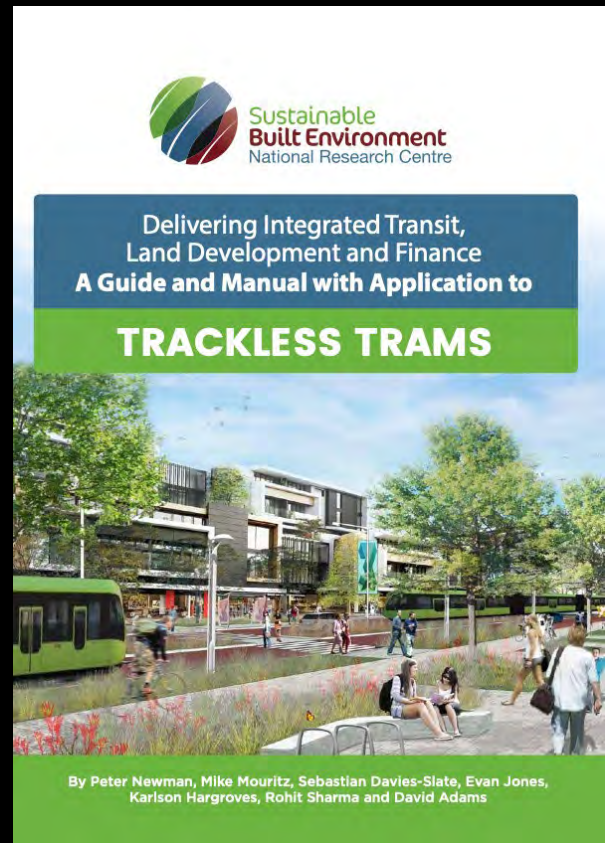
E: evanjones@iinet.net.au
Responsive ENVIRONMENTS
M: +61 412925442
Curtin University

How can we do urban redevelopment and quality public transport at the same time?

Net zero precincts along main roads corridors using quality net zero transit to unlock the land value….CUSP research for decades







Net Zero Corridors

- change main roads into Boulevards with a string of *net zero precincts*

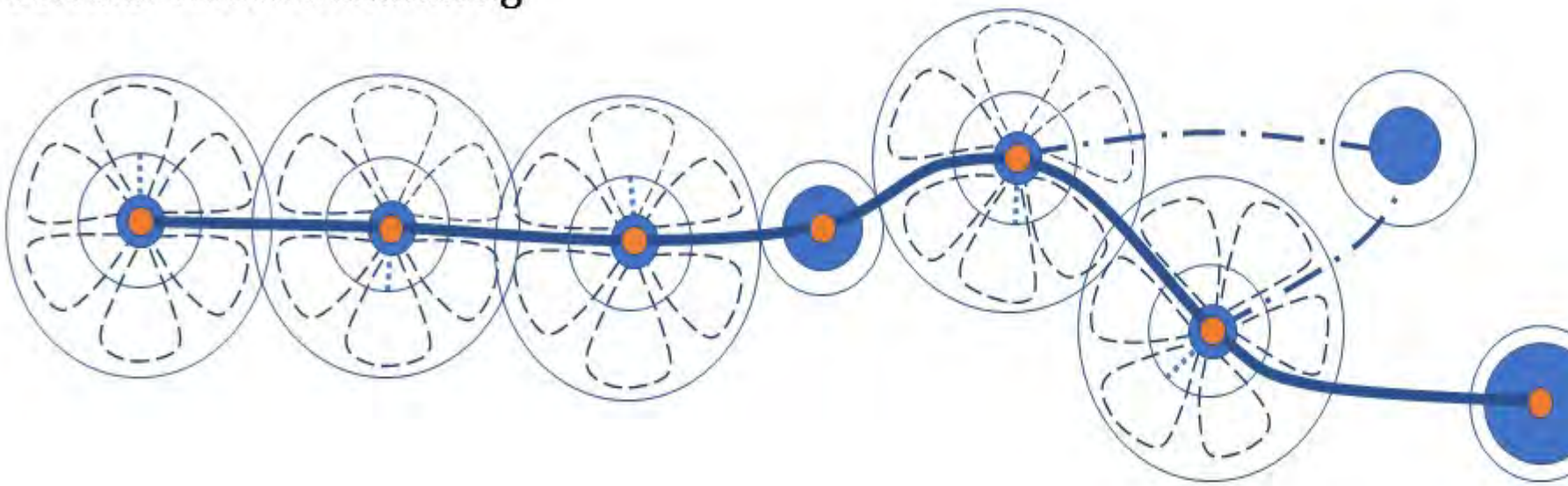






Micromobility feed-in, shared and private.

Corridor Transit Commuting



What can a Trackless Tram do to a Corridor?
Imagine the Possibilities



Transformation of a city…

What is California doing?

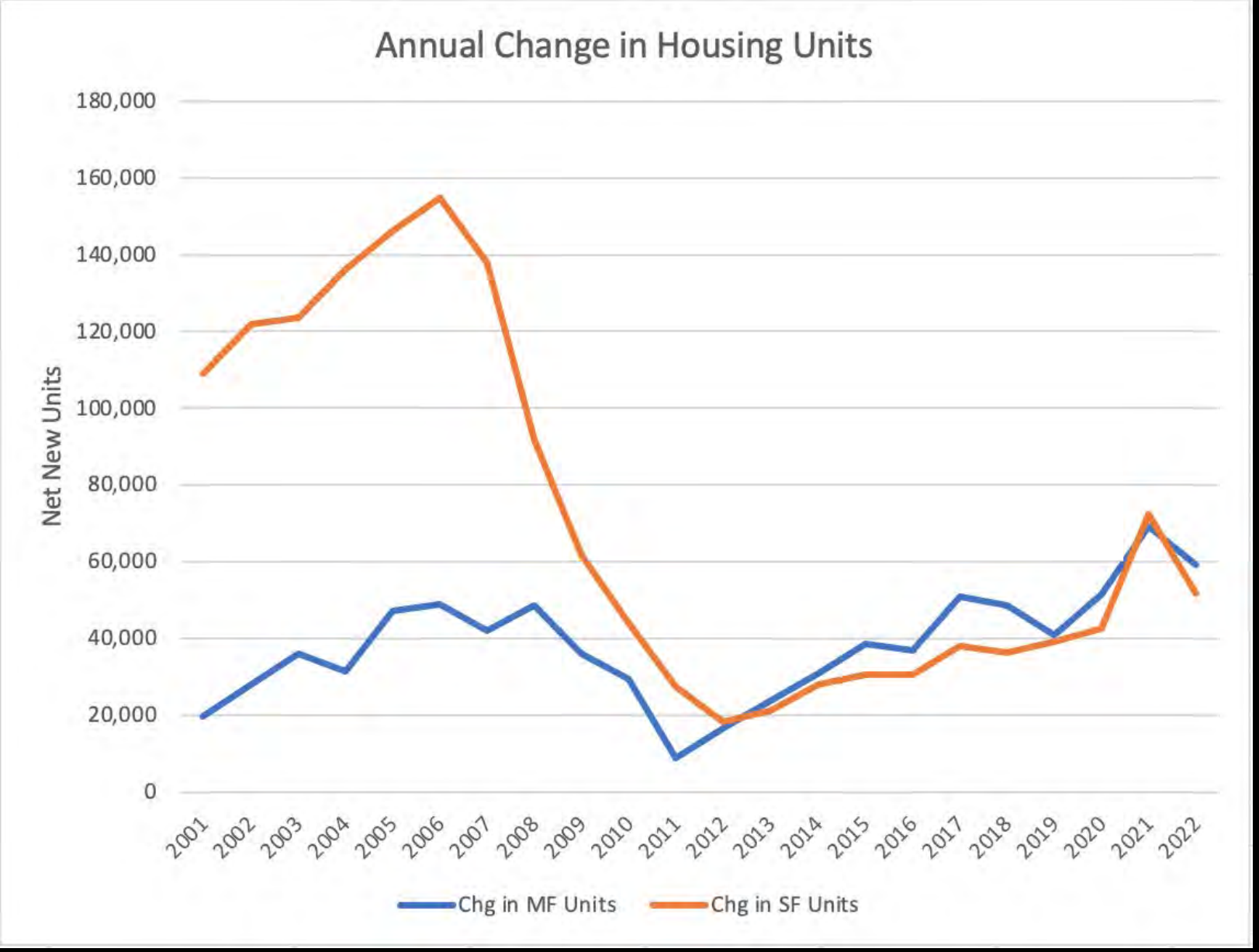
- Ask Peter Calthorpe, the inventor of Transit Oriented Development….

A National Housing Crisis



Housing has become so unaffordable that over 75% of homes on the market are too expensive for middle-income buyers

United States is currently experiencing a housing shortage of between 5.5 and 6.8 million units

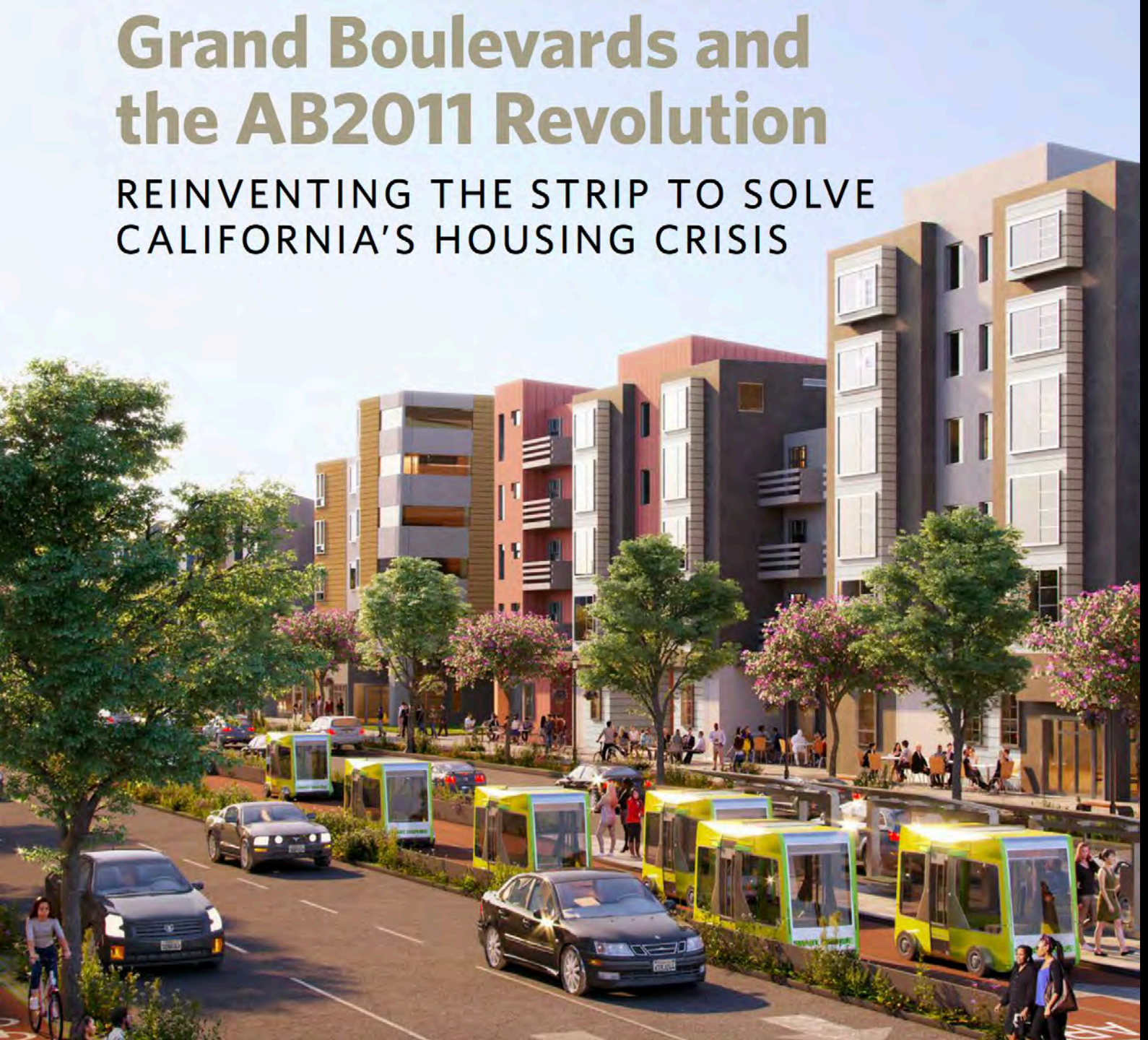


Construction collapses caused by too many large SF homes.

But where do you put all these new medium and high-density units?

Grand Boulevards and the AB2011 Revolution

REINVENTING THE STRIP TO SOLVE CALIFORNIA'S HOUSING CRISIS





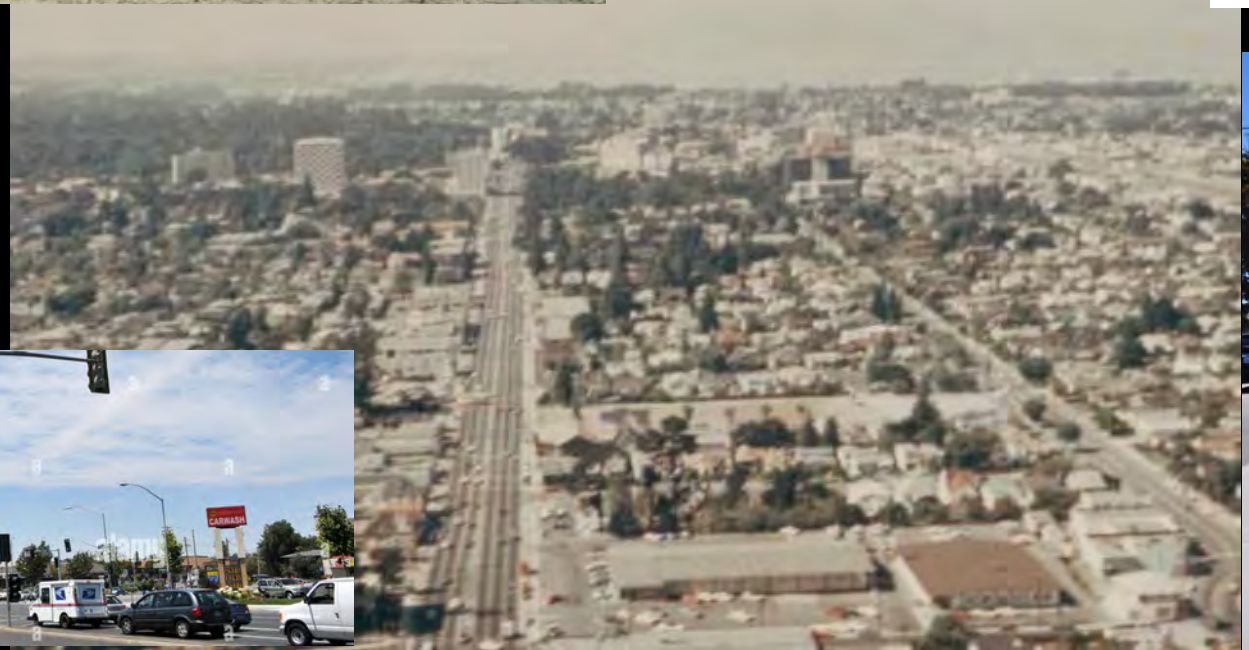
El Camino Real:

from historic journey way, to traffic sewer to Grand Boulevard



Partnerships











400,000 affordable housing units with $15,000 a year saving in living costs.

Something missing?





The famous Guangzhou BRT….

Or why you need a train

Or maybe a Trackless Tram

Perth Southern Rail…

Carrying 8 lanes of traffic at peaks. TT can carry 6 lanes





55% fewer auto miles;
cost 53% less in utilities and transportation;
consume 39% less energy; and
demand 62% less water

Transforming Main Roads into **Sites for Affordable Housing with Trackless Trams**