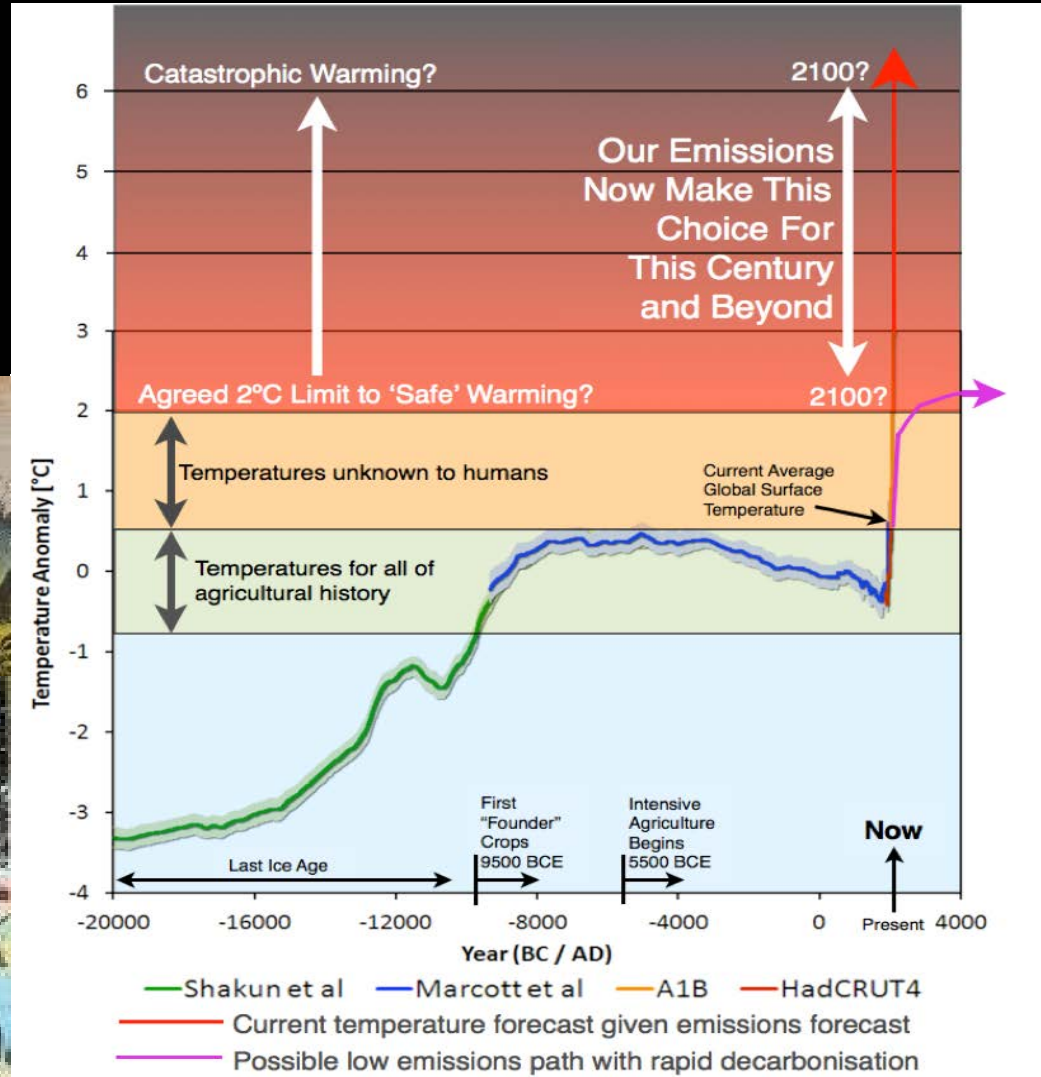
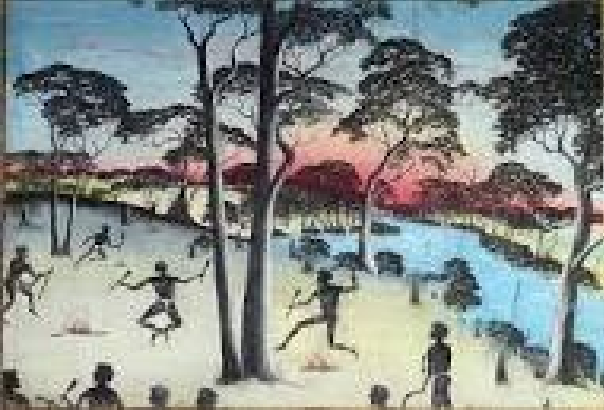


# Transforming main roads into net zero boulevards

By

Peter Newman AO  
Professor of Sustainability  
Curtin University

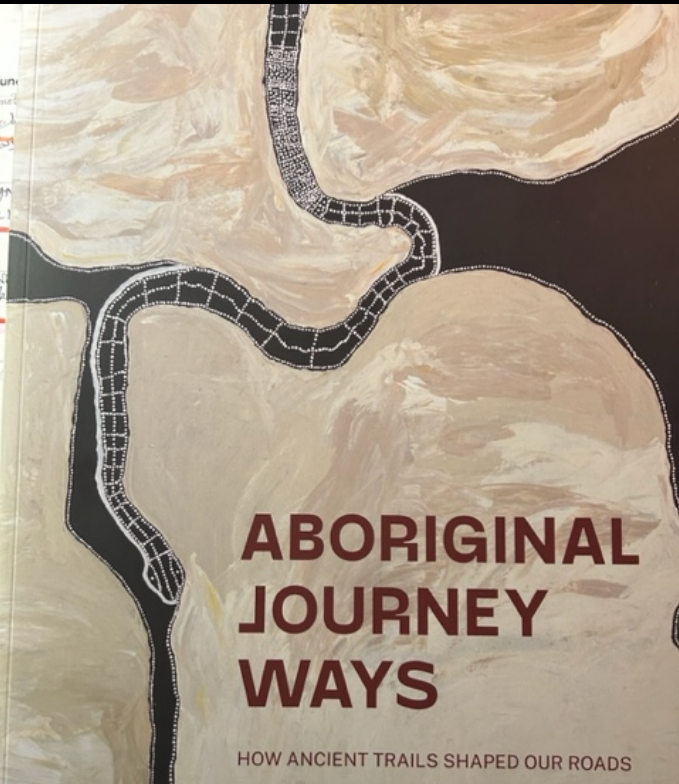
# Thanks for looking after our land over the past 60,000 years....



Please help us through the next 60.



From Parramatta Road  
to Main Roads  
everywhere...



Can songlines be part of the future of roads?

# Pathways to Net Zero Precincts

RACE for  
**2030**  
BUSINESS

Precincts are defined urban areas that include buildings, infrastructure, streets and open space. Precincts vary in scale, but are typically synonymous with neighbourhoods and as such they present an ideal scale for trialing, monitoring and managing decarbonisation activities that integrate land uses and distributed energy resources.

A Net zero precinct is one that achieves an overall zero balance between CO<sub>2</sub>-e emissions and removal of carbon from the atmosphere. This project will involve research into seven net zero innovation areas and how these can be scaled through synthesis pathways to accelerate adoption.



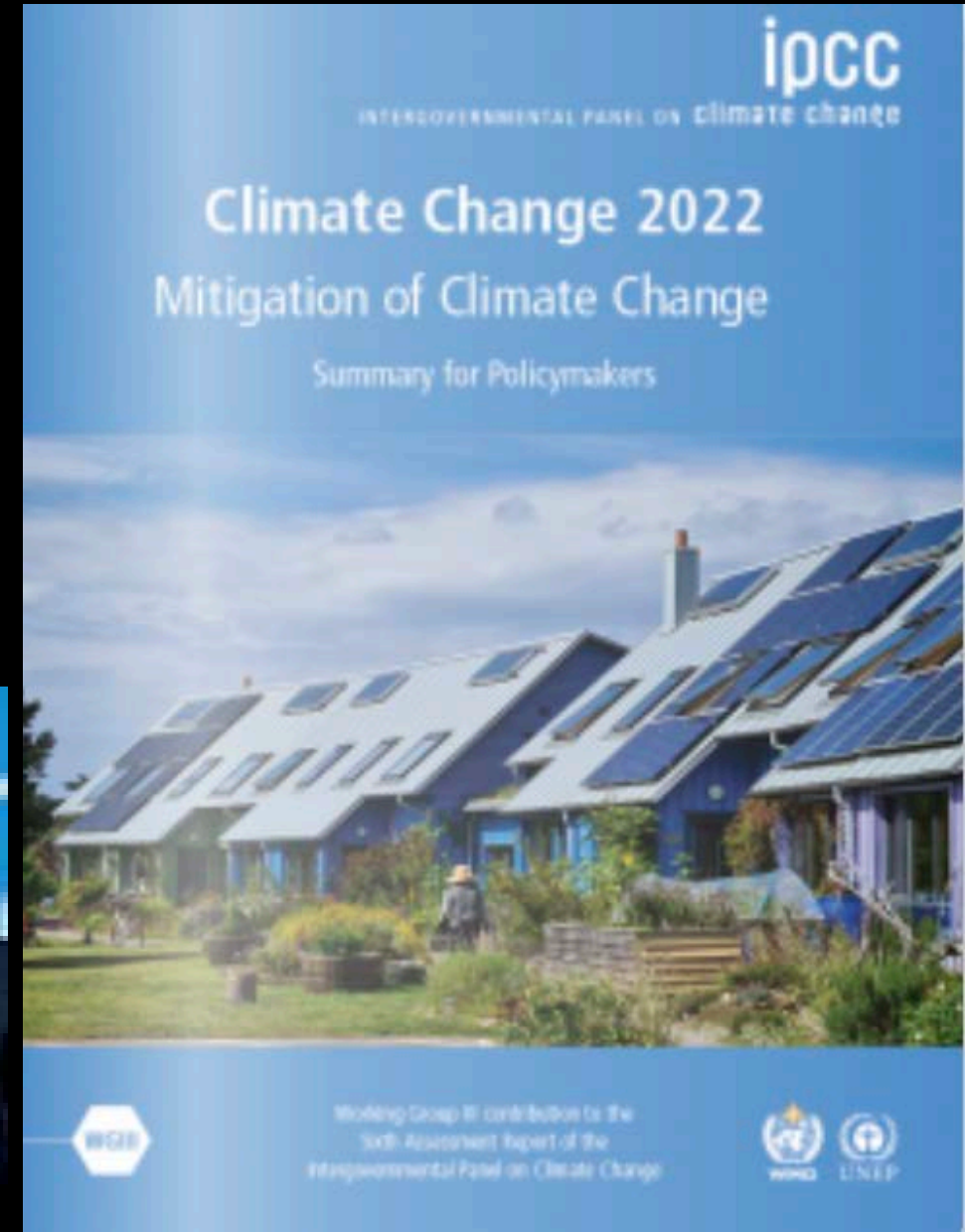
# Transport and cities often left out of climate discussions



# IPCC 2022 Mitigation Report

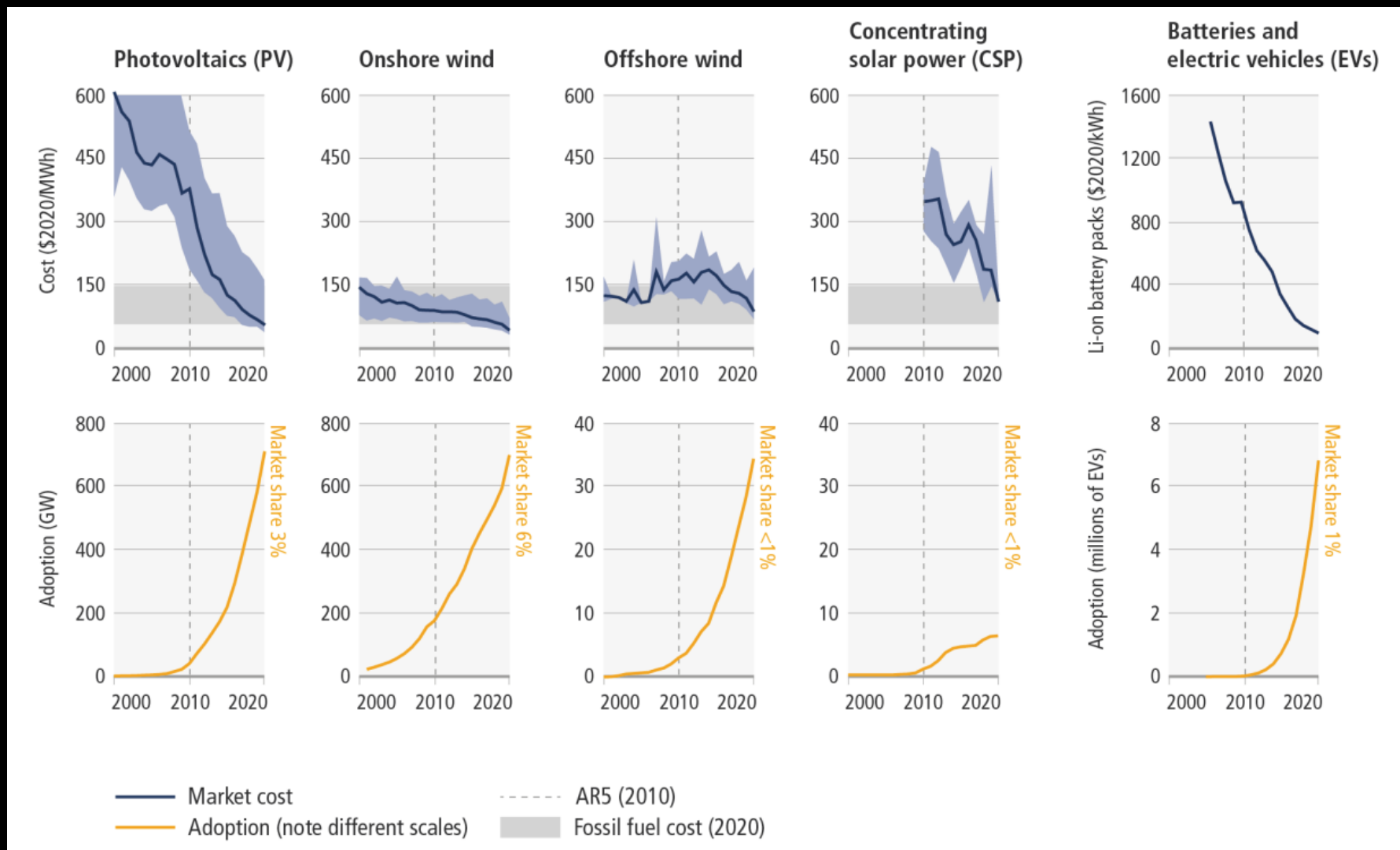
‘We are on a fast track to climate disaster...’

IS THIS ALL?



# THE GOOD NEWS –

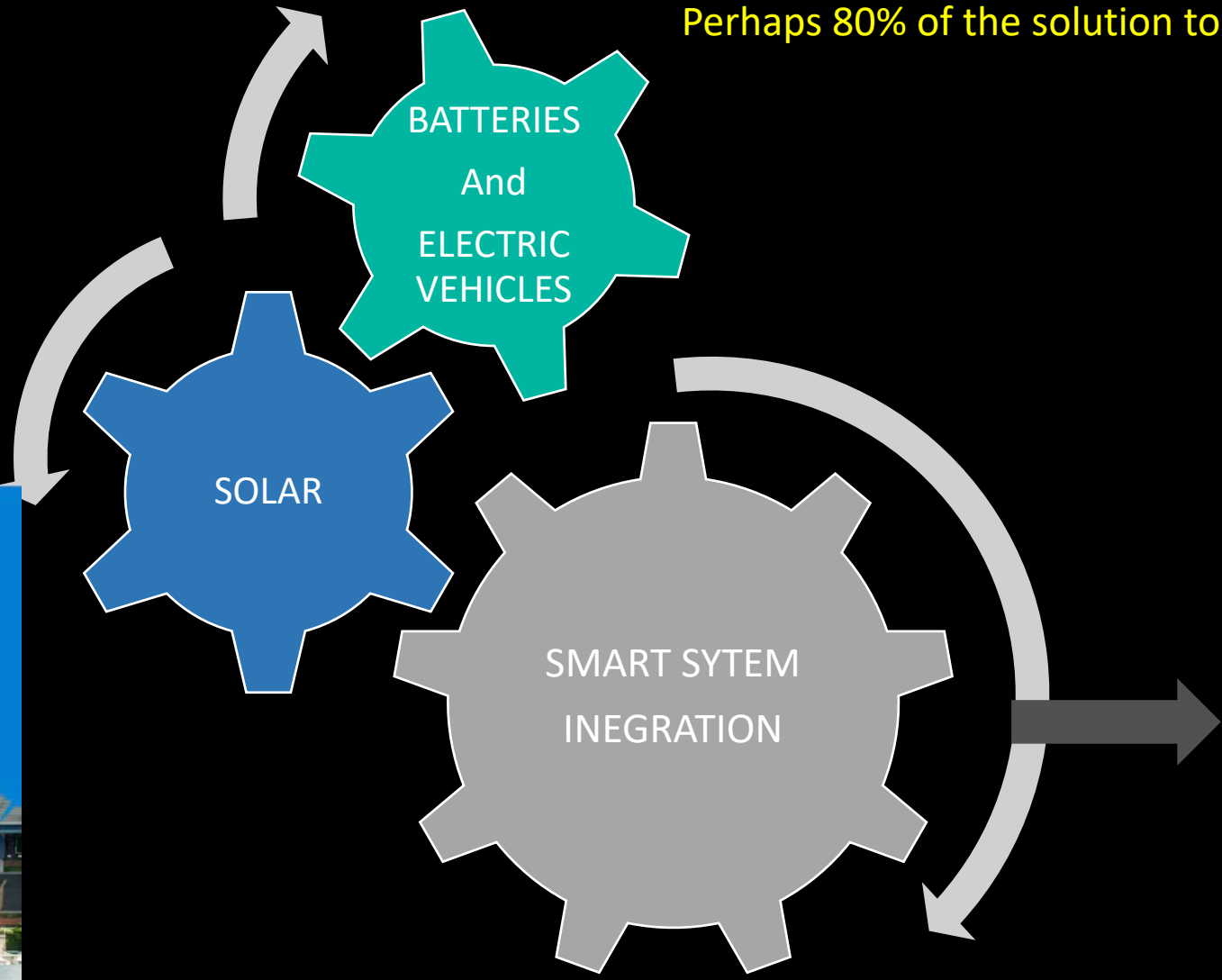
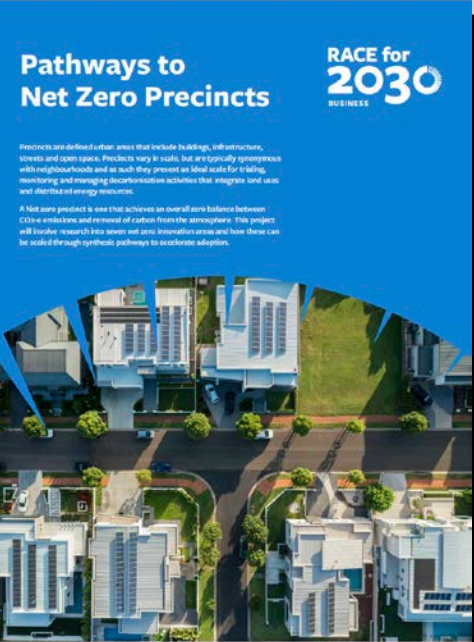
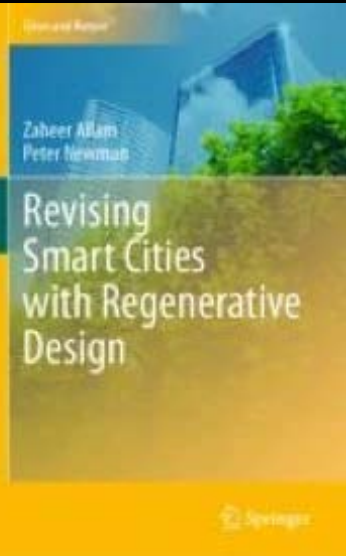
The unit costs of key low-emission technologies have fallen continuously since 2010 and their adoption continues to rise...



Need to integrate  
With smart  
technologies

# Every net zero project has to be created differently...

Perhaps 80% of the solution to global warming



**NET ZERO PRECINCTS**

**GRIDS**  
**INDUSTRIES**  
**CITIES**  
**And**  
**CORRIDORS**

New in 2023

# Pathways to Net Zero Precincts

*Embedding Research to Accelerate Adoption*



13 case studies  
5 cities across Australia  
5 universities, 13 industry partners

Precinct Concept



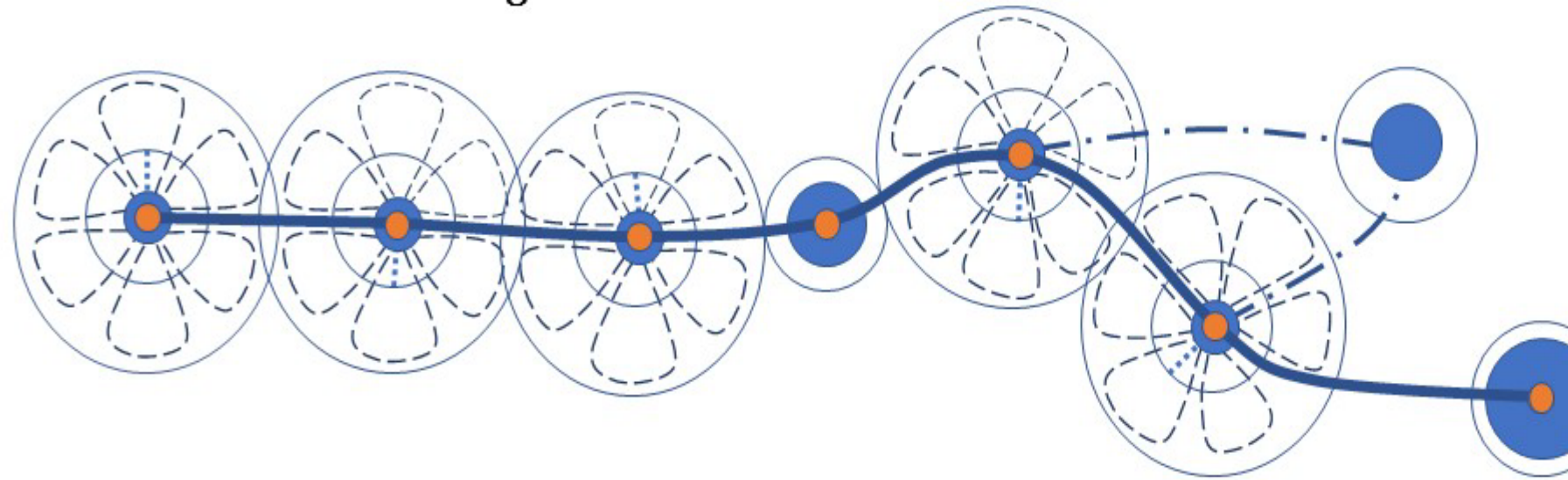
Net Zero Precinct  
Professional Practice For Delivery



Net zero precincts are not islands, they can be joined into the city along corridors...  
**- NET ZERO BOULEVARDS**



Corridor Transit Commuting



Cars and buses have been the solution on main roads until now....



240 Persons travel to work:

-- in 177 Cars

-- in 3 Busses

-- in 1 Tram



Created a career as a transport academic and planner....

2015

# 'CAR DEPENDENCE...'

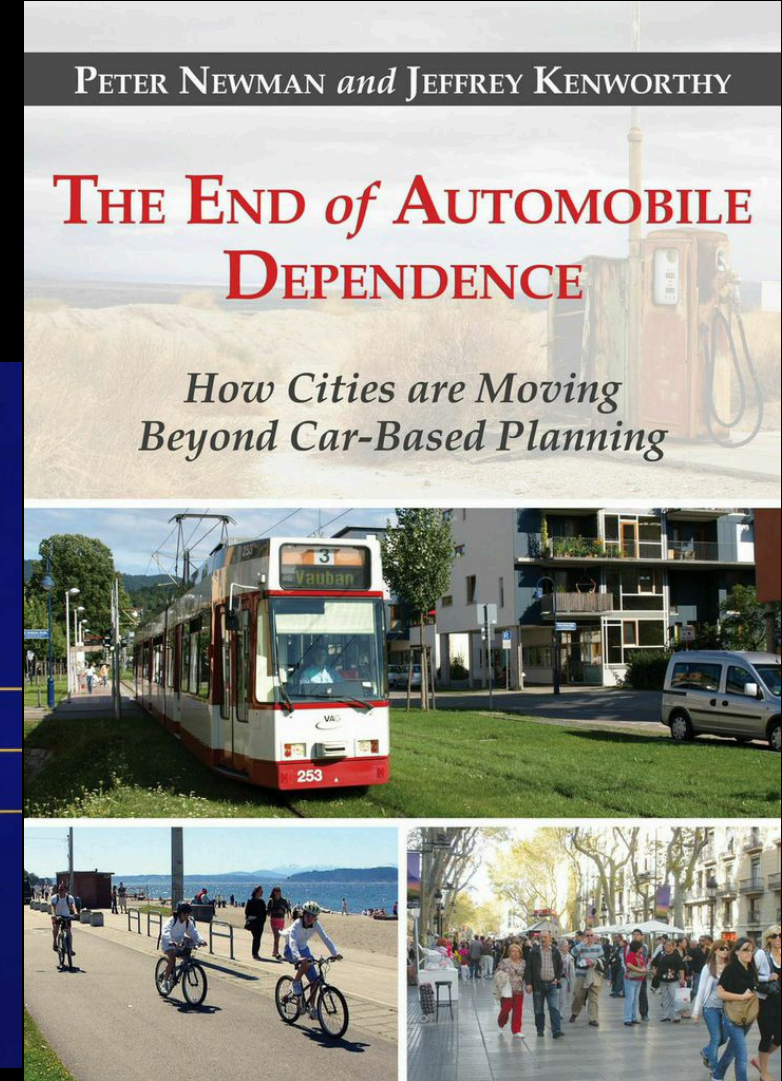
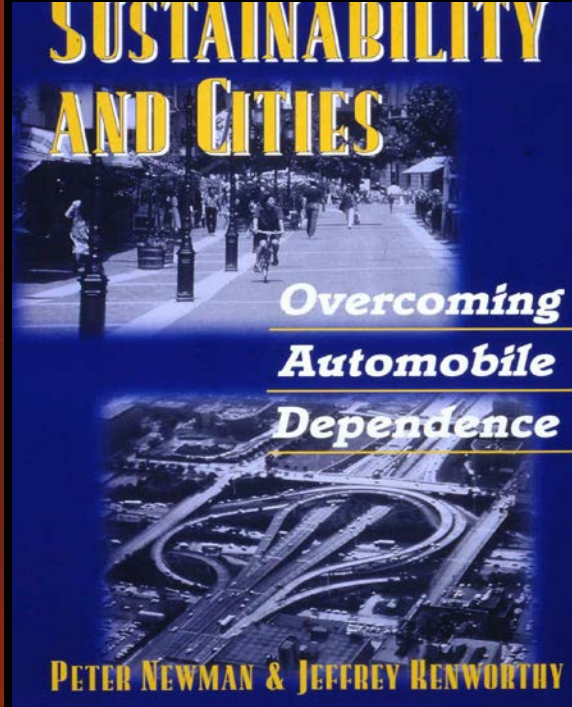
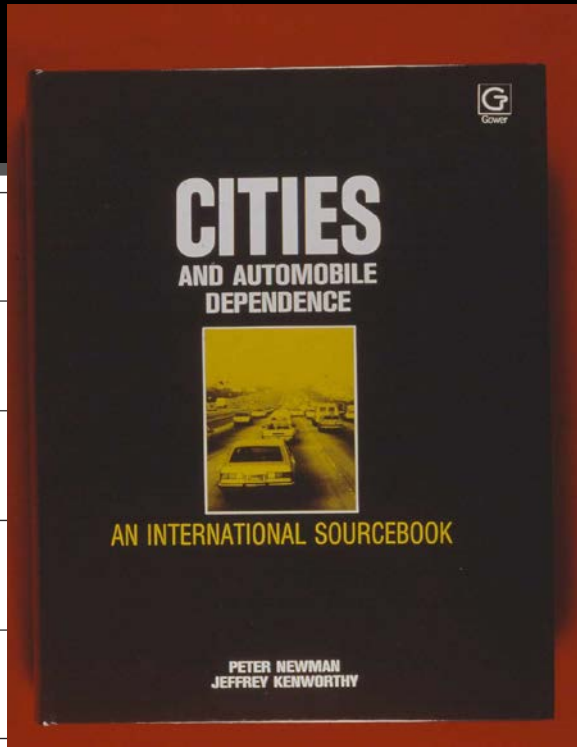
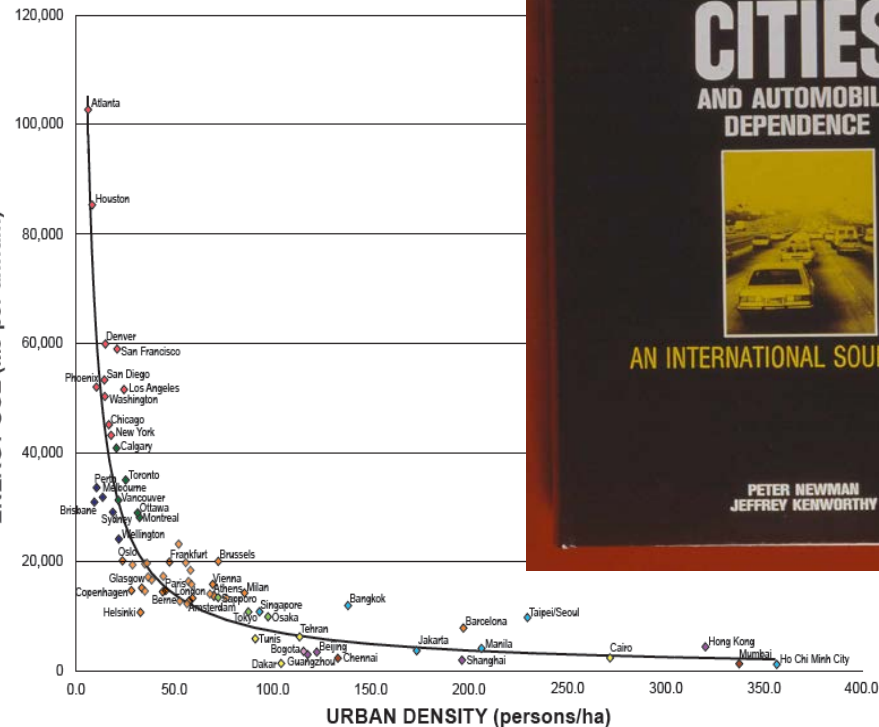
## The Rise and Fall of an Empire – a Trilogy

1989

1999

Launched in  
White House

FUEL



DENSITY



# STATEMENT FROM THE SYMPOSIUM on Trackless Trams

## Net Zero Corridors:

### *Fifth Estate*

Next steps – Choose the best corridors and begin planning with community and developers.

## Nobody called this a bus after taking a ride! The trackless tram experience and what they said

PETER NEWMAN, CURTIN UNIVERSITY 28 NOVEMBER 2023



#### TRENDING



“Time to step up” – white paper calls for architects and designers to implement wellbeing into designs



Nikola Tesla dreamed of free electricity; what happened?

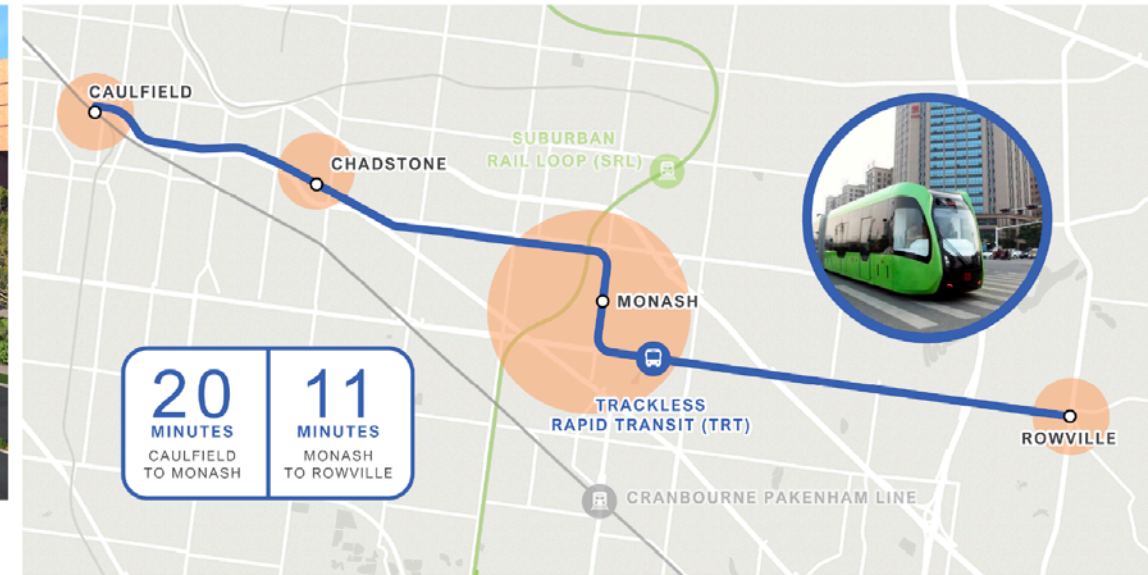
# Transit Activated Corridor – Trackless Tram with net zero station precincts



Microgrids in precincts spread into surrounding suburbs like tentacles....

# CAULFIELD ROWVILLE TRACKLESS RAPID TRANSIT THE ROUTE

Strong  
developer-led  
proposal



## 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



# TRACKLESS TRAMS – 5 year SBEnrc project

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



Trackless Tram  
concept in City of  
Liverpool, Sydney

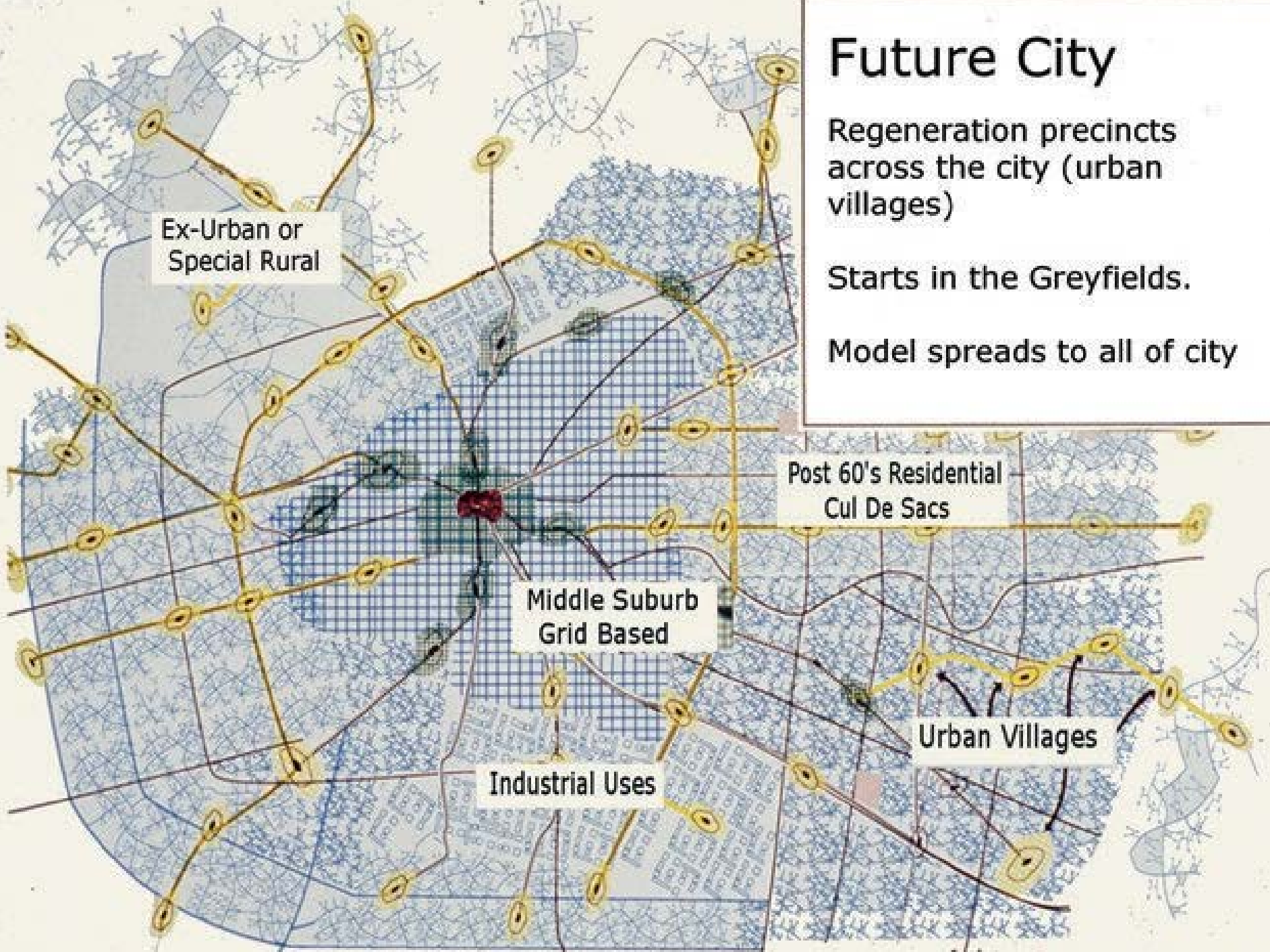


# Future City

Regeneration precincts across the city (urban villages)

Starts in the Greyfields.

Model spreads to all of city



Net Zero  
Corridors  
needed to  
create net  
zero cities

## Our plan

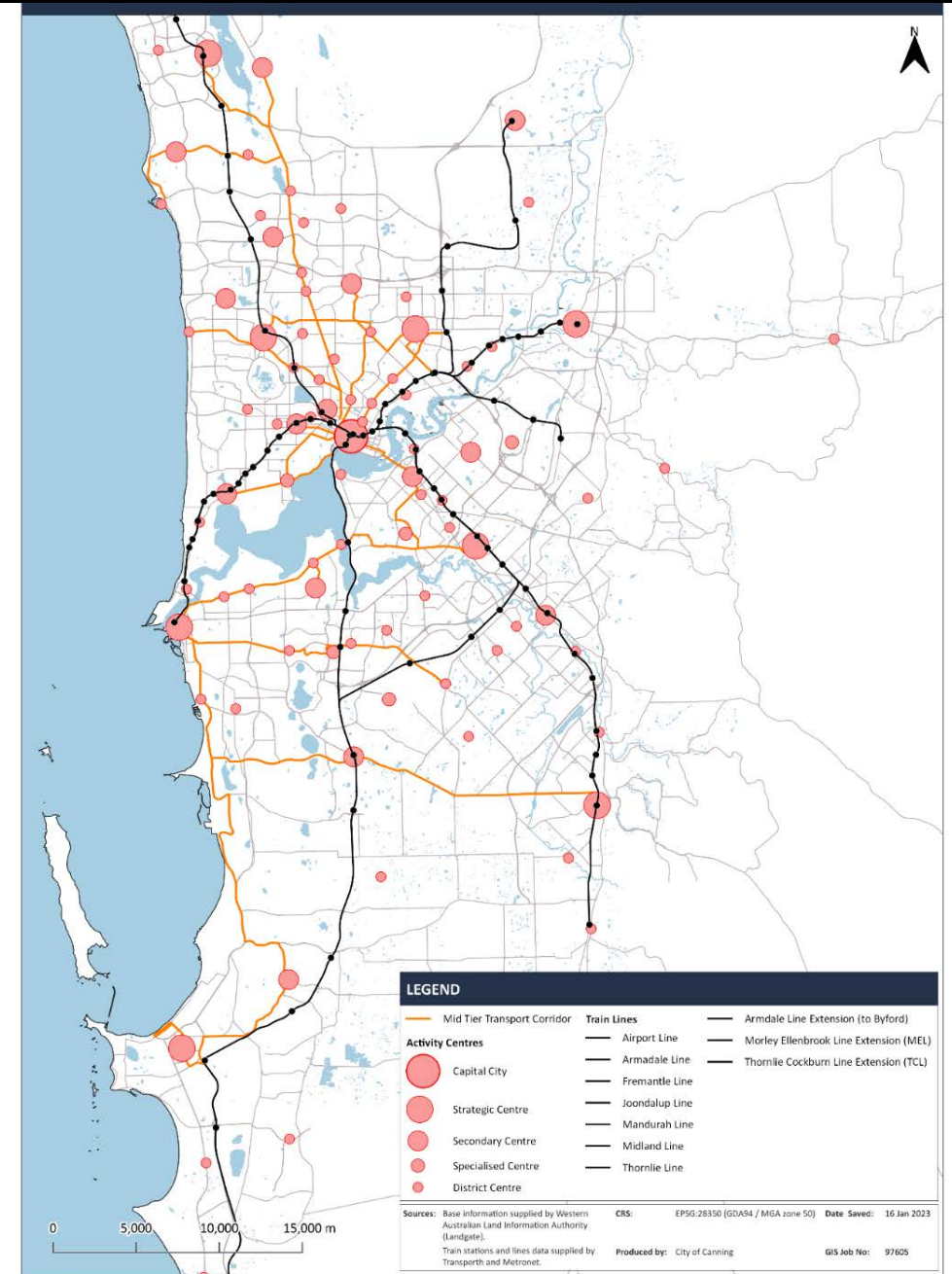


Mid-Tier  
Connections  
*across the  
corridors.*

Urban  
regeneration  
opportunities

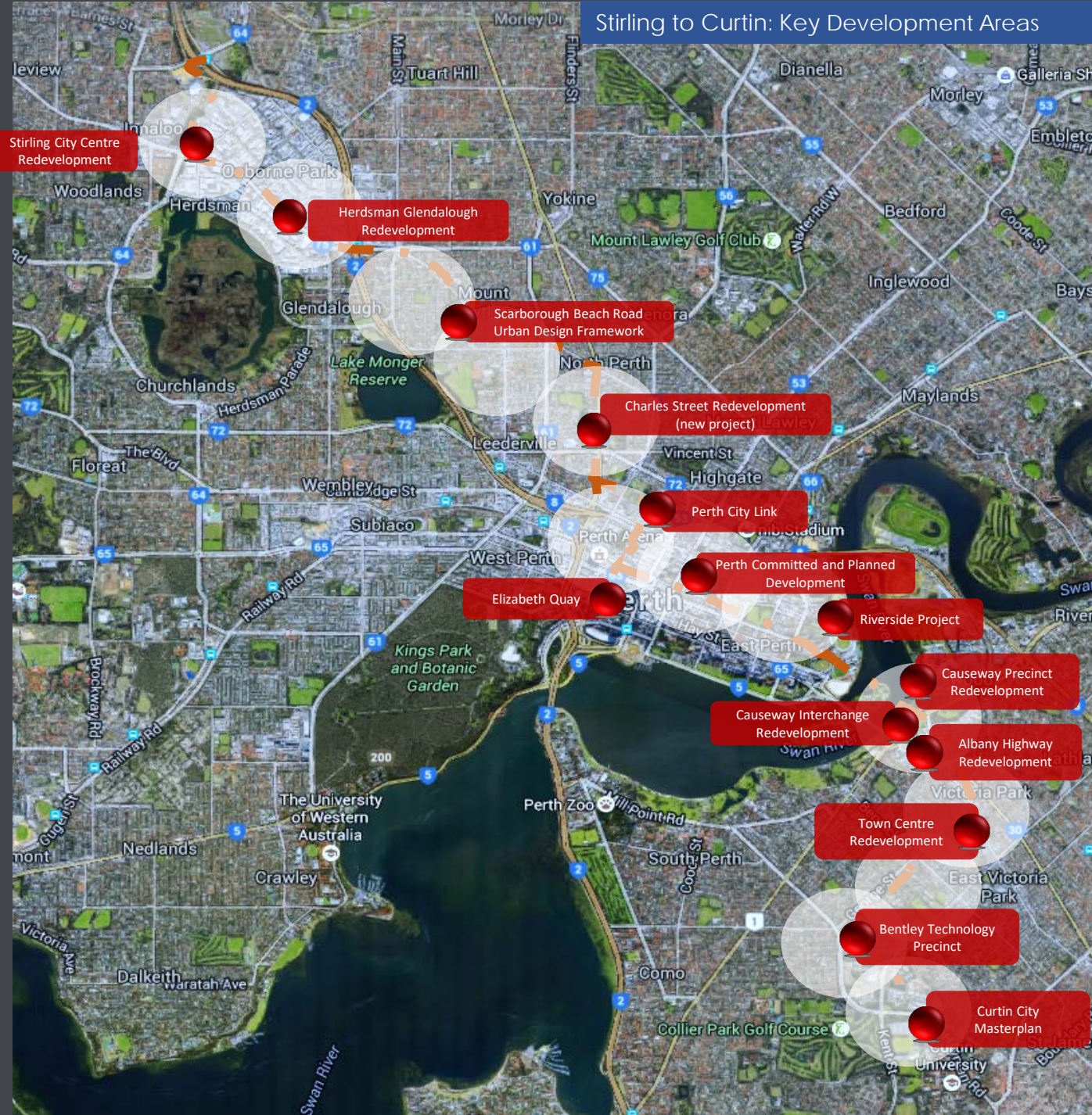
Movement  
and Place  
Strategy

## State Government plan



Lots of potential developer-led projects

Stirling to Curtin: Key Development Areas



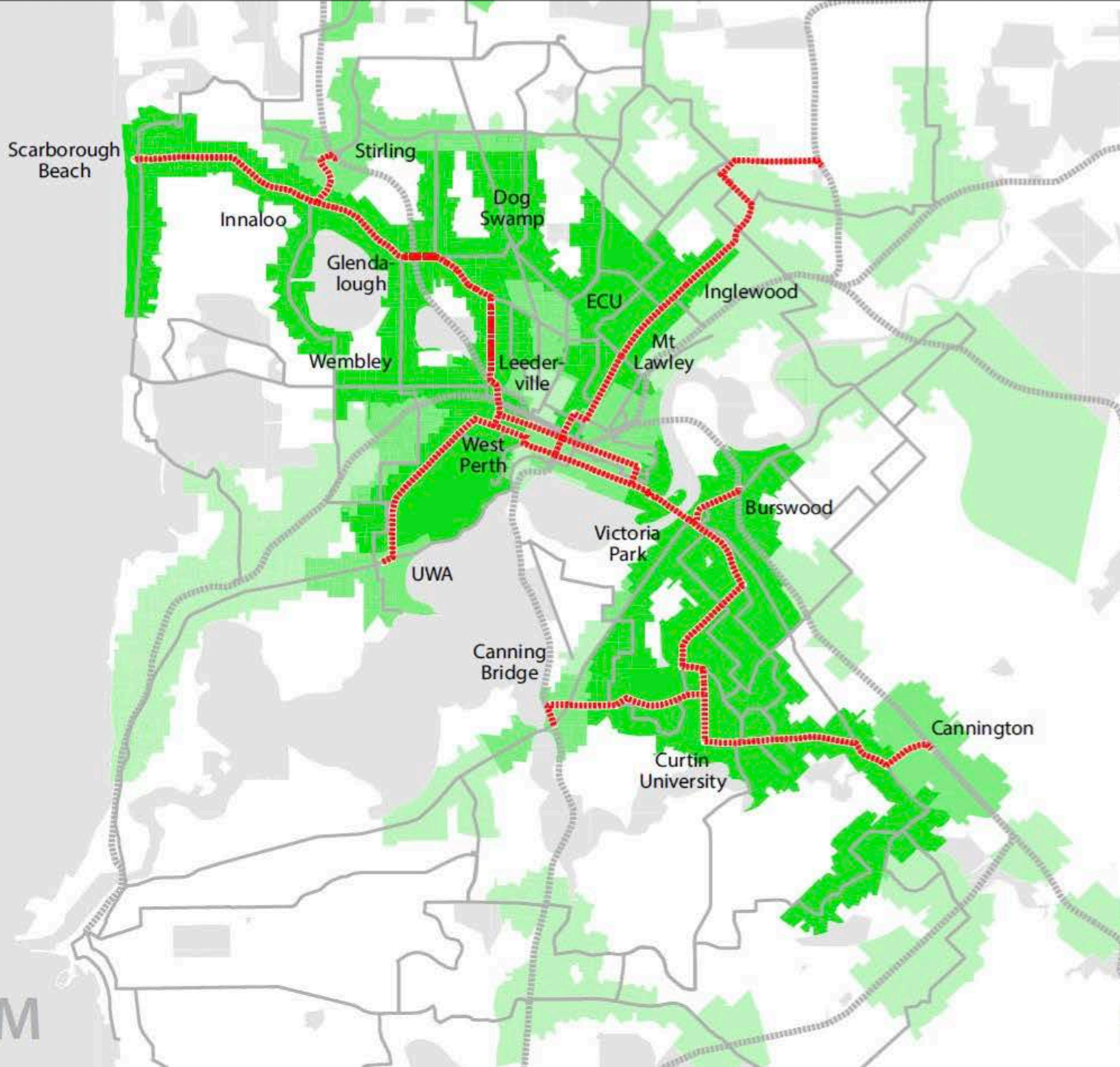
Stirling City Centre



Riverside Project

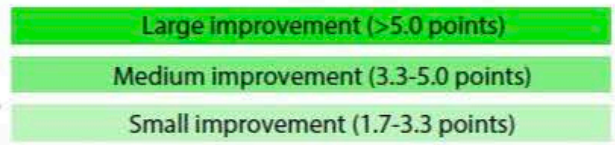


Bentley Technology Precinct



### Perth 2031 Trackless Tram Option Z

SNAMUTS Benchmarking Composite Index  
Increment change over 2031 Base



**Metro Average: +2.9**

Trackless Tram right into the heart of Curtin's new precinct. A PPP for net zero...



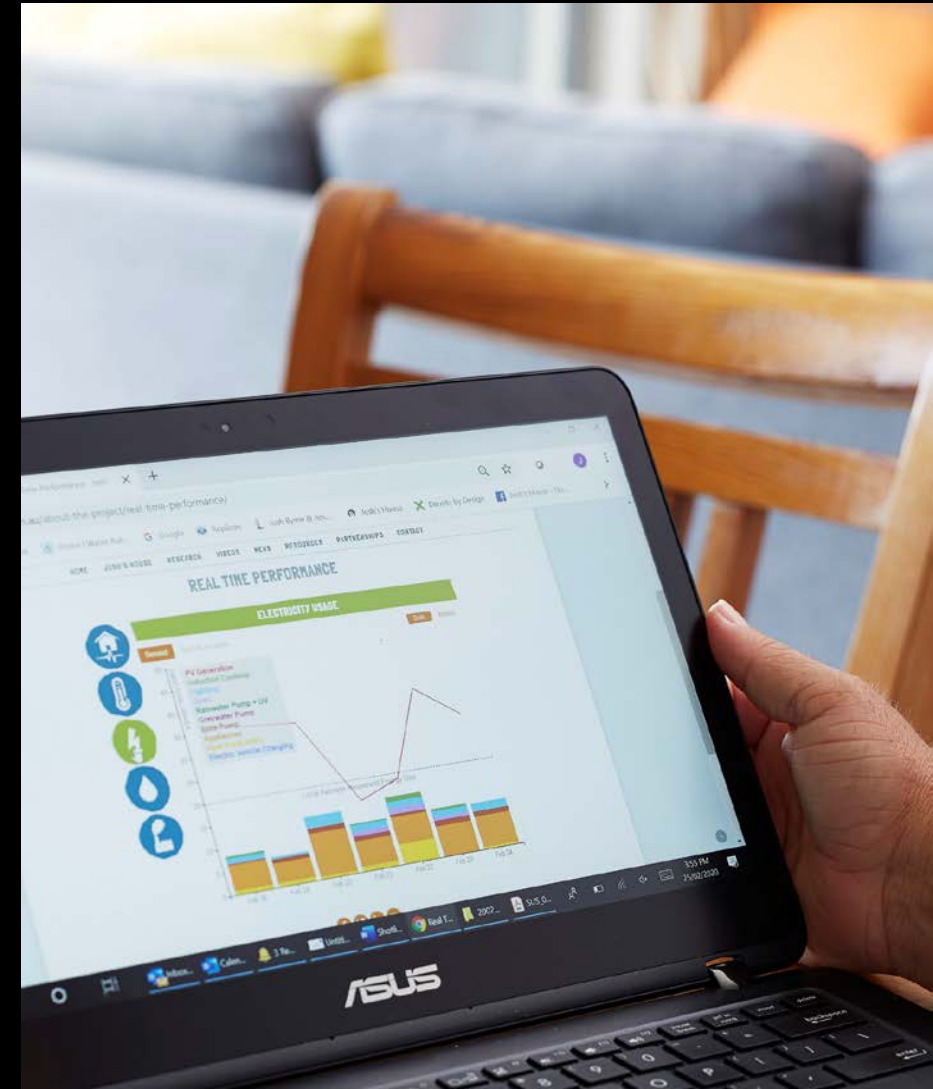
# What can a Trackless Tram do to a Corridor? Imagine the Possibilities



**Transformation of a city...**

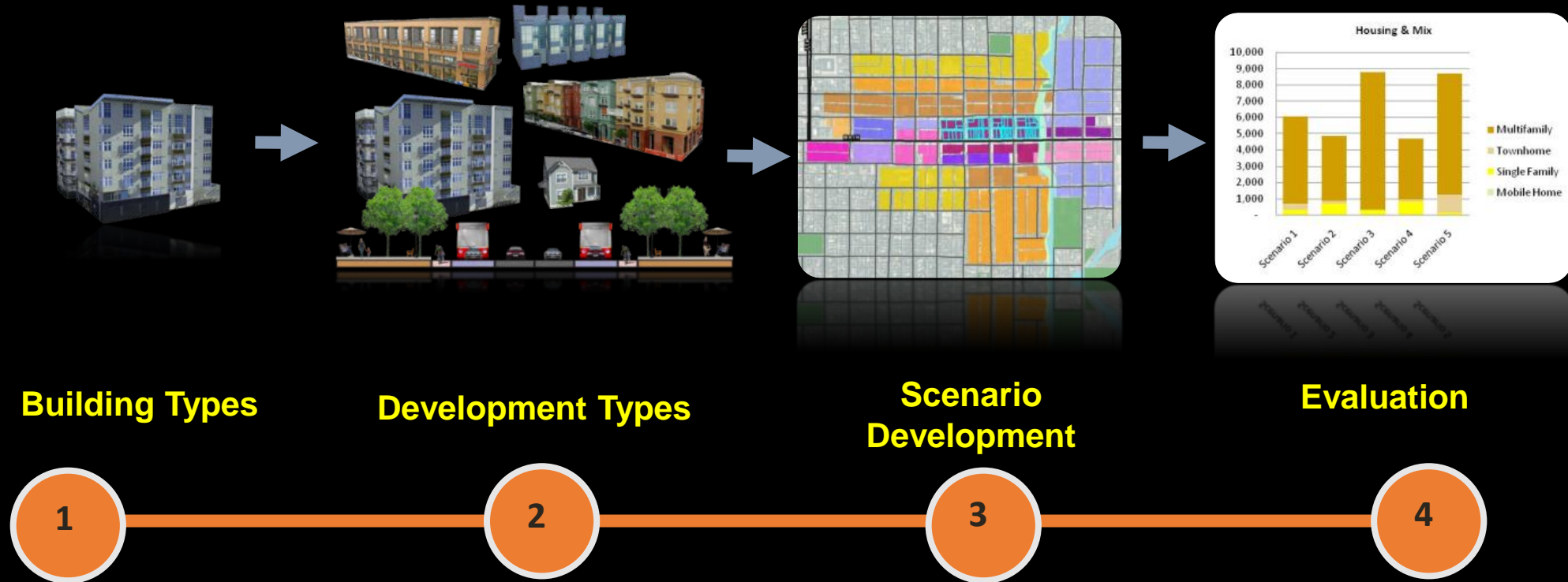
# Net Zero Precincts project is creating a new tool to calculate *design scenarios* for:

- Net Zero
- Green infrastructure
- Transport, and
- Place
- CALLED ET-Oz



# ENVISION TOMORROW

Scenario Building Process in most US cities  
from Peter Calthorpe





# ENVISION TOMORROW

## Real-time Scenario Building and Evaluation

The screenshot shows the ENVISION TOMORROW software interface. On the left, there is a 'Paint' panel with a 'Development Type' list. An orange box labeled 'Select' highlights the 'City Center' and 'Town Center' options. The main map area shows a grid of land parcels, some of which are colored according to the selected development types. An orange box labeled 'Paint' is positioned over a parcel on the map. Below the map, there is a 'Housing Mix' indicator panel with a bar chart showing housing units and mix. An orange box labeled 'See Changes Instantly' is positioned over the bottom right of the map area.



# Grand Boulevards and the AB2011 Revolution

REINVENTING THE STRIP TO SOLVE  
CALIFORNIA'S HOUSING CRISIS



Transform main  
roads into  
affordable  
housing  
boulevards...

Solve housing,  
transport and  
climate  
**TOGETHER**

# El Camino Real:

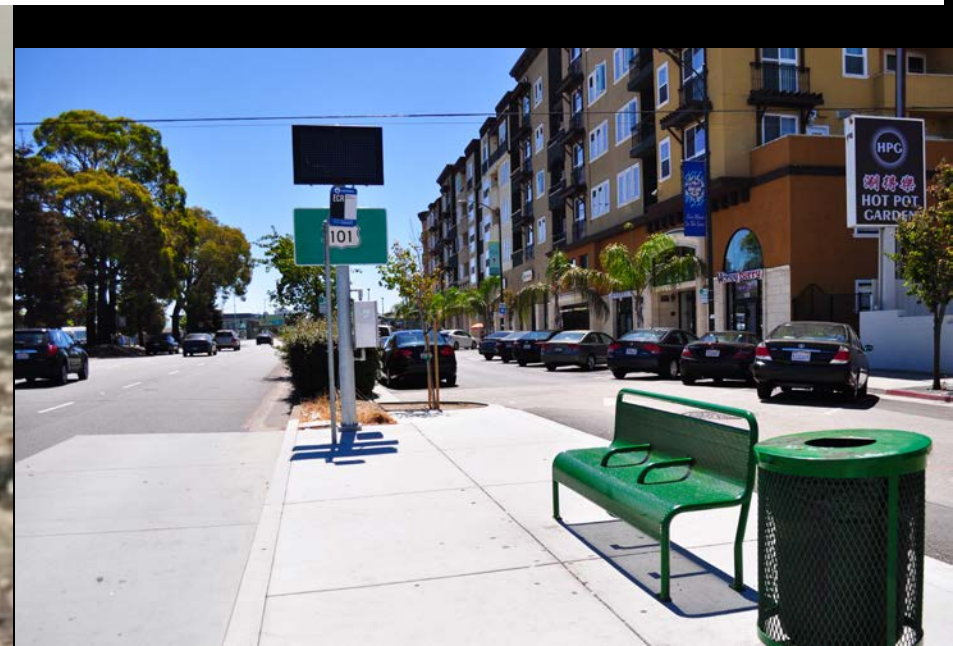
from historic journey way,  
to traffic sewer to Grand  
Boulevard



Partnerships

From Daly City to San Jose

The Grand Boulevard Initiative is led by a partnership of:



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

Something missing?





## WITH A TRACKLESS TRAM

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

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

*netzeroprecincts.au* to be launched today...

RECENT PUBLICATIONS in C40 journal:

Journal of City Climate Policy and Economy

Volume 2 Issue 2, January 2024, pp. pp. 241-250

**Trackless Trams: An Emerging Transformative Opportunity**

and

Volume 2 Issue 2, January 2024, pp. pp. 221-240

**Net Zero Corridors—Enabling Urban Regeneration and Net Zero Cities**