

# Trackless Trams: Perth's Role in the new Transit Technology

By

Peter Newman AO

Professor of Sustainability, Curtin University, Australia



My journey – comparing cities to see why some have fewer cars and better transit... Rail vs road, density vs sprawl.....  
1989



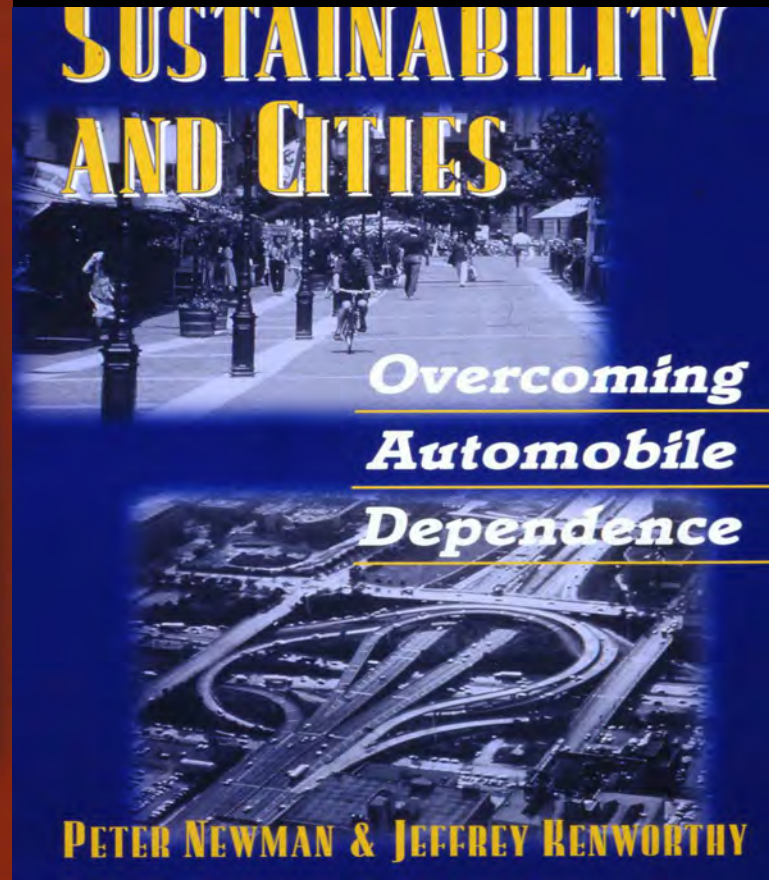
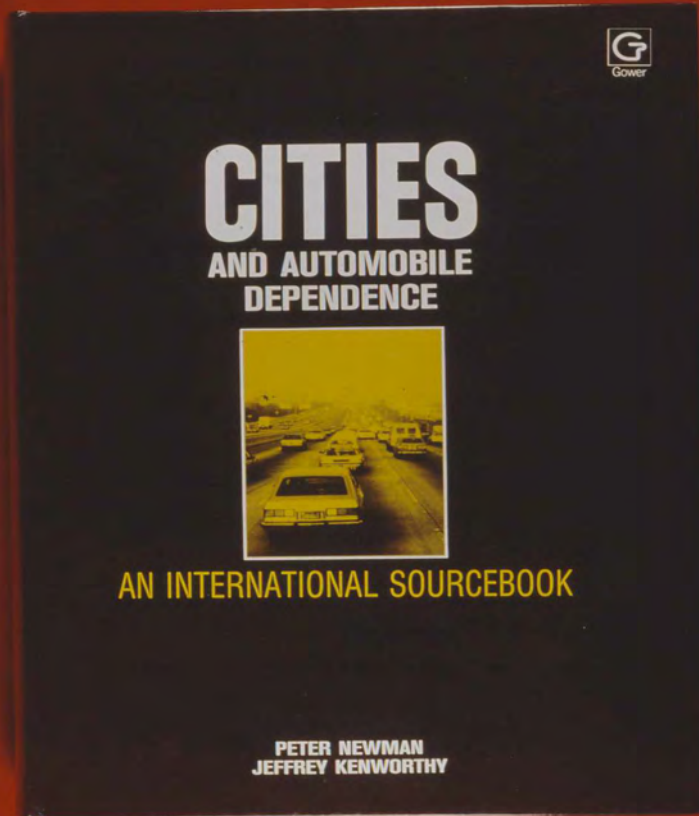
2015

2009

PETER NEWMAN *and* JEFFREY KENWORTHY

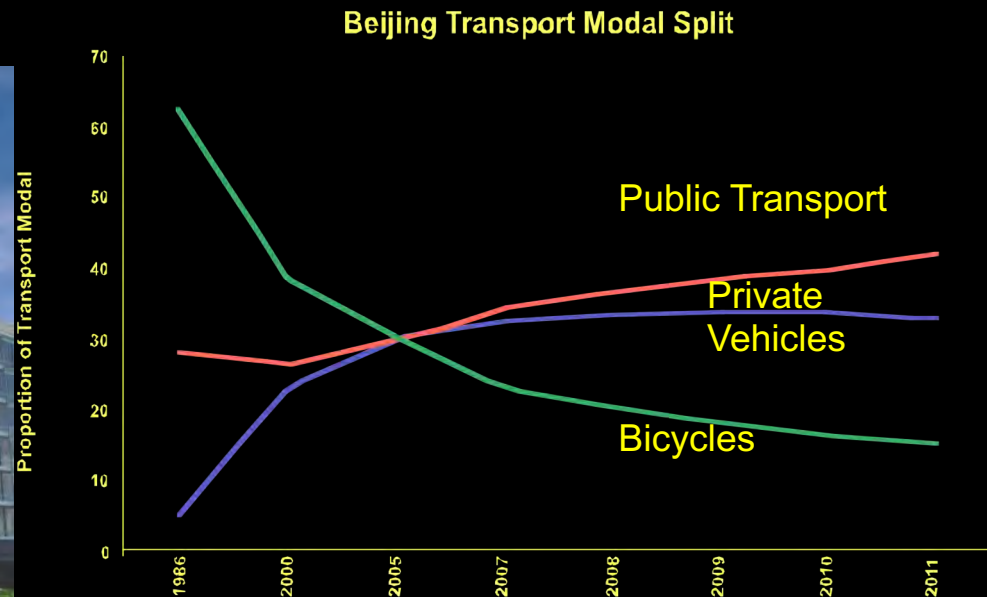
# THE END of AUTOMOBILE DEPENDENCE

*How Cities are Moving Beyond Car-Based Planning*



# Global growth now in rail ...

- 82 Chinese cities building metros and high speed rail between cities  
Shanghai 8m passengers/day
- 51 Indian cities building metros Any city over 1m.
- Middle east cities building rail for first time



*Reducing car dependence saves space*

*ONE LANE -  
people per hr:*

Freeway 2,500  
Busway 5000  
LRT 10-20,000  
Train 50,000



240 Persons travel  
to work:

-- in 177 Cars

-- in 3 Busses

-- in 1 Tram

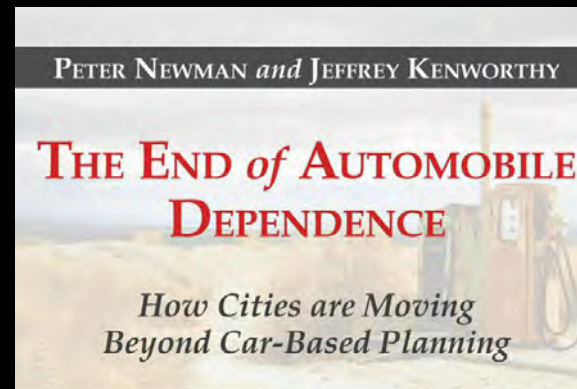




## Portland's Pearl District LRT

The top 6 most walkable cities in the US have 38% higher GDP.

70% of knowledge economy workers in Boston live in walkable areas.



Trackless Tram video  
made by  
Greenpeace  
4 million hits

Characteristic	BRT	LRT	ART
Speed and capacity	✓	✓✓	✓✓
Ride quality	✗	✓✓	✓✓
Land development potential	✗	✓✓	✓✓
Cost	✓	✗	✓
Disruption to services and local economy in construction period	✓	✗	✓✓
Implementation time	✓	✗	✓
<b>Overall</b>	✓	✓✓	✓✓✓

Not just a fancy bus or cheaper LRT



# Greater Curtin







# The Perth study...

Corridor through:  
Middle suburb,  
Inner suburb and  
CBD



## CONCEPTUALISING the NODES

The remaking of Cecil Avenue

This is what most local governments are trying to build....

The TT makes it possible



Sustainable  
**Built Environment**  
National Research Centre

Delivering Integrated Transit,  
Land Development and Finance

A Guide and Manual with Application to

# TRACKLESS TRAMS

A GUIDE AND MANUAL WITH APPLICATION TO: TRACKLESS TRAMS - SEPTEMBER 2018

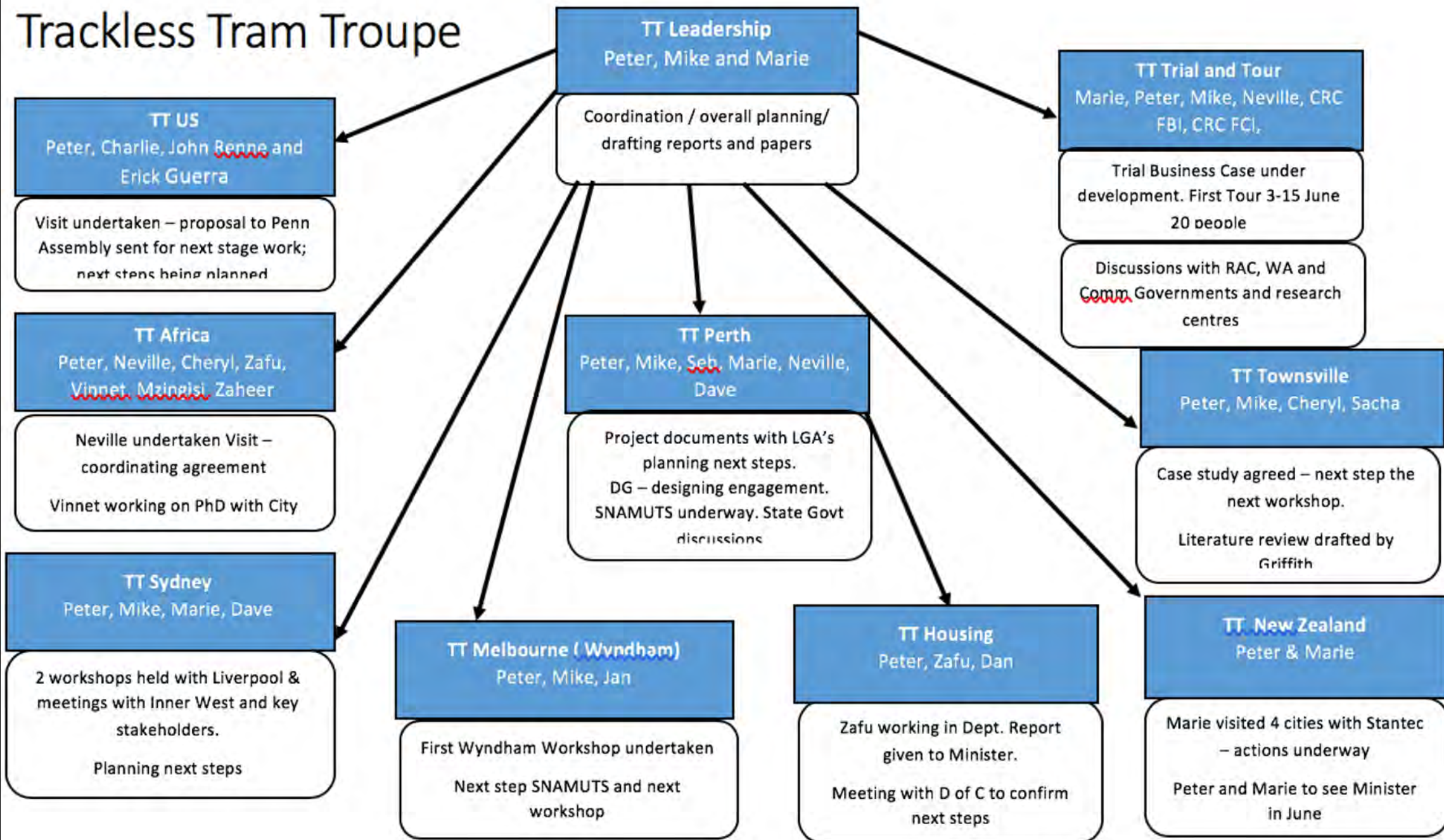


By Peter Newman, Mike Mouritz, Sebastian Davies-Slate, Evan Jones,  
Charlie Hargroves, Rohit Sharma and David Adams

# GUIDE and MANUAL - available

- [SBEnc.com.au](http://SBEnc.com.au)
- Lots of You Tube films

# Trackless Tram Troupe



# The Tour...20 people, Zhu Zhou to Stockholm





European bus  
manufacturers...

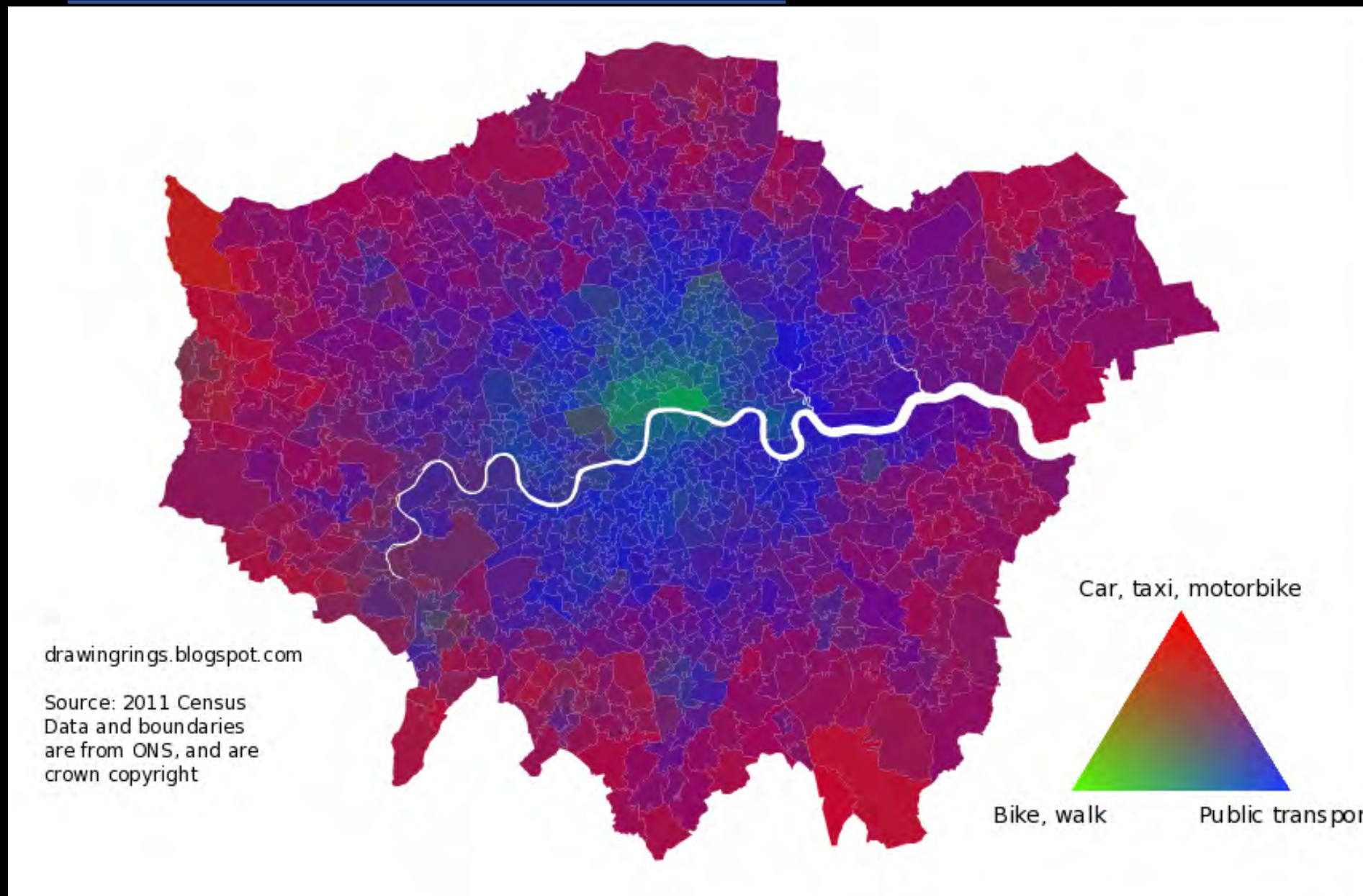


London....

Agent General set up meetings  
with Transport for London and  
City of London



# Travel to work by main mode of transport - LONDON







Walking  
city  
- bus  
bunching



Transit city  
corridors

## Have your say on the Sutton Link: a major new public transport service for Sutton and Merton

We are consulting on proposals for a new, direct transport link between Sutton and Merton and would like your views on your preferred type of transport and route.

The Sutton Link would:

- Make it quicker to travel between Sutton and Merton and improve links to central London
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- Support the delivery of new homes in both boroughs

To find out more and have your say please visit:

[tfl.gov.uk/sutton-link](http://tfl.gov.uk/sutton-link)

Please submit your views by  
Sunday 6 January 2019

Have  
your  
say



MAYOR OF LONDON



# Automobile city



## Next step...

- Lord Mayor to come to Perth in September would like to see a Perth trial of a TT.

# Two days in Pennsylvania



UPenn class...

The Governor and Joe...

Even welcomed to country....



Pottstown PA, part of the declining American industrial hinterland, looking to make a more inclusive city...through public transport. 1.5 hours of questions...



# BEYOND THE TRAIN: TRANSPORTATION OPTIONS

A discussion with Rep. Joe Ciresi and  
Professor Peter Newman

April 11, 2019  
7 p.m. - 8:30 p.m.

Montgomery County Community College  
101 College Drive • Pottstown  
South Hall • Community Room

Join Rep. Ciresi at Montgomery County Community College for a discussion on public transportation, including trackless trams, with Peter Newman, a professor of sustainability at Curtin University in Australia.



Newman has authored 20 books and more than 340 papers on sustainable cities and received the Order of Australia for his contributions to urban design and sustainable transportation.



STATE REPRESENTATIVE  
**JOE CIRESI**  
146TH LEGISLATIVE DISTRICT

**CAPITOL OFFICE:**  
125A East Wing  
P.O. Box 202148  
Harrisburg, PA 17120-2148  
(717) 783-4086  
Fax: (717) 705-1891

**DISTRICT OFFICE:**  
Park Towne Plaza  
301 N. Lewis Rd.  
Royersford, PA 19468  
(484) 200-8265  
Fax: (484) 200-8275  
Monday - Friday,  
8:30 a.m. - 4:30 p.m.

**SATELLITE OFFICE:**  
TriCounty Active Adult Center  
288 Moser Rd.  
Pottstown, PA 19464  
Open Monday, Wednesday, and  
Friday.  
Office hours may vary; please  
call (484) 200-8265 to confirm  
hours.



Questions? Call Rep. Ciresi's  
office at (484) 200-8265.

Why does it mean so much?

Its about their identity as people who matter....



# One day in Charlottesville....



# Making Charlottesville more inclusive with more projects like the Downtown Mall...reclaiming public space



# Next step

- Grant approved for work on a TT in Philadelphia
- Will come to Perth and see a TT trial

Marie went to NZ....

# New Zealand Projects and Interest

## Queenstown 30,000

A pedestrianised town centre is to be trialled next month in Wanaka.

The Queenstown Lakes District Council announced yesterday parts of Ardmore and Helwick Sts would be closed from March 14 to 19 to trial a car-free, open-spaced lakefront.

The trial would include the removal of parking on the foreshore, new one-way



## Christchurch 381,500

What are the rapid transit corridors?



## Wellington 212,700

## Auckland 1.66m



# Next Steps

- All 4 cities want a TT
- Want to help with a Trial here in Perth
- Meet Minister in June

Neville went to Africa...



Bulawayo –  
big wide  
streets



A few economic issues...





Bus station...

# Transit Mall project





Project is underway

# Business Chronicle

9

Thursday, May 9, 2019

email: [business@chronicle.co.zw](mailto:business@chronicle.co.zw)

## Byo dreams of 'Trackless Tram'

Oliver Kazunga  
Senior Business Reporter

BULAWAYO City Council (BCC) has approved an application from a Zimbabwean PhD candidate to undertake a study on the ambitious possibility of introducing the "Trackless Tram" in the city.

Trackless Trams (TT) are based on technology created in Europe and China by taking innovations from high-speed rail and putting them in a bus.

The technology is an articulated, high capacity "tram" running on rubber tyres but with an in-built guidance system offering autonomous optically-guided running and operation with GPS and LIDAR technologies, into moving very precisely along an invisible track. The method measures distance to a target by illuminating the target with pulsed laser light.

According to latest council minutes, BCC director of engineering services Engineer

Simela Dube reported that the city had received expression of interest from Mr Vinnet Ndlovu, a PhD candidate with Curtin University Sustainability Policy (CUSP) Institute in Australia through the Mayor's office to do a study on the possibility of introducing the TT in Bulawayo.

The city's department of Engineering Services has recommended that authority be granted to Mr Ndlovu to progress a study in partnership with the city on the possibility of introducing the TT in Bulawayo. The standard TT has three carriages that could carry 300 people, but it could take five carriages and 500 people if needed.

Should the findings of the study reveal that the TT project is feasible, implementation shall follow the council procurement procedures. The project is expected to be implemented within 36 months and that the funding could easily be sourced through a Private Public Partnership venture.

"Mr Ndlovu had been approached by Curtin

University Sustainability Policy (CUSP) Institute, School of Design and the Built Environment Faculty of Humanities (Australia) to undertake a PhD study on TT and to pilot the project of 12 to 15 trams.

"He further advised that they were currently talking with the manufacturer of these trams on implementation as a trial or pilot project, which they anticipated doing 12 to 15 months as a pilot project," said BCC.

It said the TT system appears to be aligned to the city's existing public transport policy by offering higher service frequencies, better quality and likely lower fares than the market would otherwise provide.

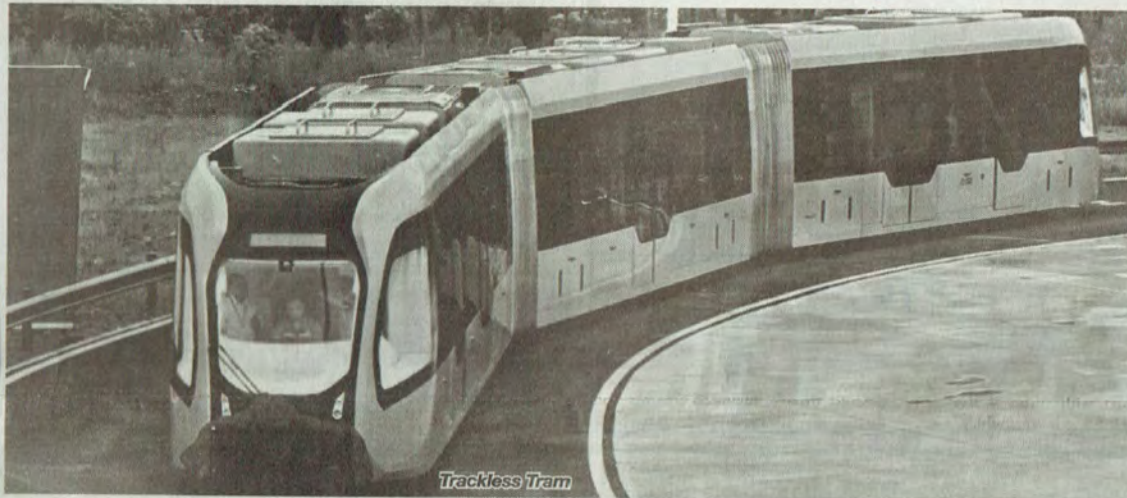
BCC also highlighted that a quick scan of the city had identified five potential TT corridors namely Joshua Mqabuko Nkomo International Airport Road, Plumtree Road (to Donnington industrial area), Khami and Luveve roads as well as Gwanda Road (to National University of Science and Technology) with the prospect of maximum regeneration value.

Council has noted among other benefits that the TT system was a transport-based project, which together with the Egodini project would lead to a rapid regeneration of the city on the corridors, ease existing transport challenges in the city, as well as reduce traffic congestion in the Central Business District.

Presently, Mr Ndlovu is working on developing a paper that would showcase and quantify the expected economic activities and land appraisal value that would be brought about by the TT project in Bulawayo.

"He would need some assistance with access to some economic data/information from the city's economic development and planning department to develop some econometric model(s) to showcase the economic activities that this project would bring to the city.

"Given the nature of the project, it would encourage and help kick-start the highly needed resurfacing of the city's road network especially on corridors where TT system would be constructed," said BCC. — @okazunga



PhD student from Curtin Vinnet will do study with us...

# Next steps....

Two studies that are in parallel with very different outcomes:

1. Business Case for financing a Trackless Tram as part of the Transit Mall and a solar-lighting project with GeoBase Africa.
2. Planning study on why Trackless Trams are feasible, desirable and sustainable for Bulawayo, especially if funded through urban renewal. Funded by African Development Bank.
3. Would like to see a trial...

# Mike, Marie, Dave and I went East....

- Wyndham (Point Cook) in Melbourne
- Inner West and Liverpool in Sydney
- Townsville (with Griffiths).







 **williamslanding**  
SHOPPING CENTRE





Tarneit

PT  
Tarneit Station  
Platform 2 / Waiting  
Platform 2  
Customer Service  
Platform 1  
Platform 3  
Buses

Westland Ticket Area

Live at Westbrook and  
leave the car at home.

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Land Now  
Selling





# Liverpool and Inner West (Parramatta Road)





Central area has the bones and the vision of a walking city

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**YOUR NEW MALL COMING SOON...**

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Fully funded by commercial property owners.

LIVE EAT LOOK

LIVERPOOL [liverpoolplaza.com](http://liverpoolplaza.com)

# Multicultural activities and water for kids...





# Plenty of bus lanes and opportunities for a Trackless Tram and redevelopment...





And along  
15<sup>th</sup> Street  
to the  
airport....

Austral is planning a dense urbanist centre....can a TT help make this happen?





Could the  
T-Way  
become a  
TT-Way?



Some great  
bush...

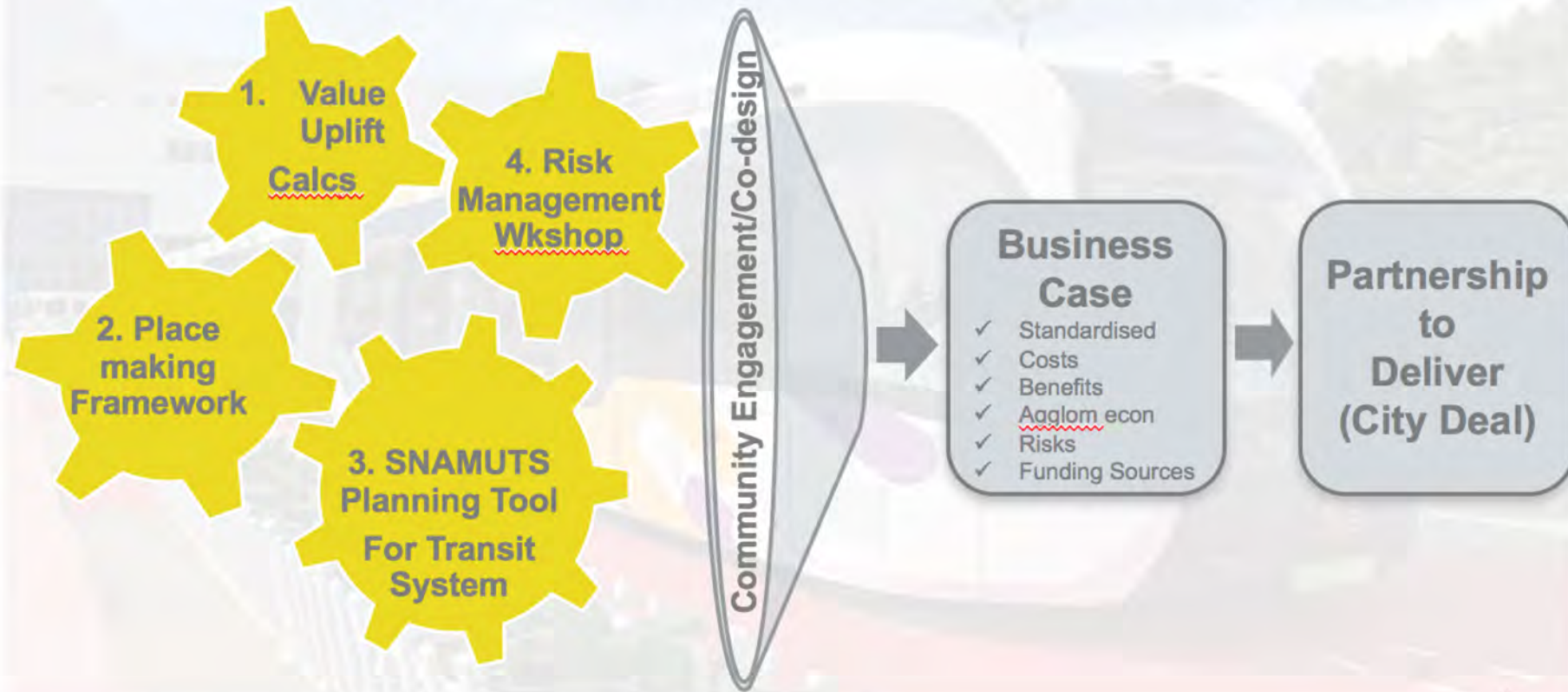


The  
airport.....

# What about Perth?

## TRACKLESS TRAM PARTNERSHIP DEVELOPMENT MODEL

Summary of Key Steps and Process Flow to Create a Trackless Tram Delivery Partnership



# Next steps

- Just do the Trial!
- Get the partnerships with RAC, bus operators, all three levels of government and private funding....into a City Deal
- And get the CRC Future Battery Industries, CRC Future Cities to work on a globally significant research-based trial of all aspects of Autonomous Electric Transport...

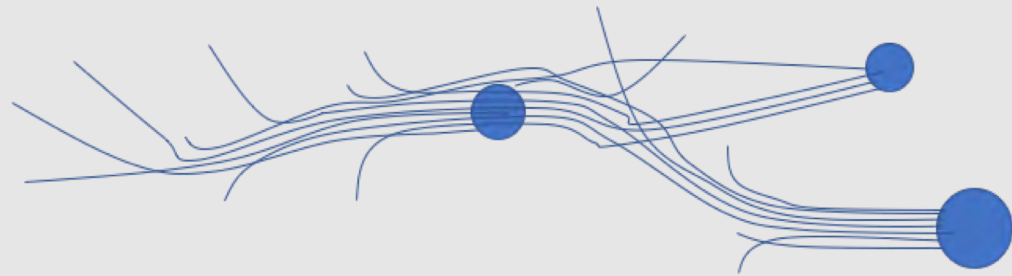




# LOCAL SHARED MOBILITY...

- Transport will become fully electric based around centres that are linked in Transit Activated Corridors and with AV-EV's feeding into them.

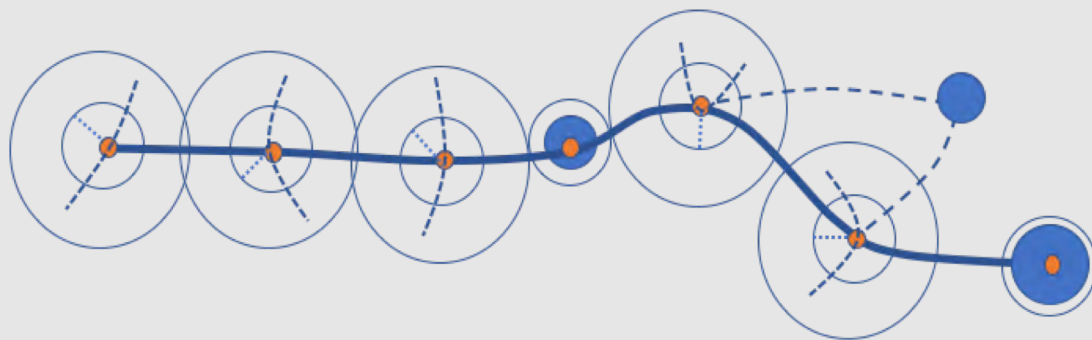
Current Commuting



● Destination  
(e.g. office, retail)

Car Trip

Future Commuting



Transit Line and Station

Autonomous Feeder

Autonomous Distributor

Walking Trip

○ Station Walking Catchment

