

Update on Melbourne Public Transport Futures

Prof Graham Currie
Public Transport Research Group
Monash Institute of Transport Studies
Monash University



Introduction

The End

Autonomous Vehicles

When Sharing Isn't

Why Transit?

Transit Fusion



In May 2009 I put the case for a Metro in Melbourne to your group...

MONASH University



Committee for Melbourne.
Shaping Melbourne Taskforce – Vision for Melbourne
Wednesday 6th May 2009



Visioning Melbourne's Transport Futures

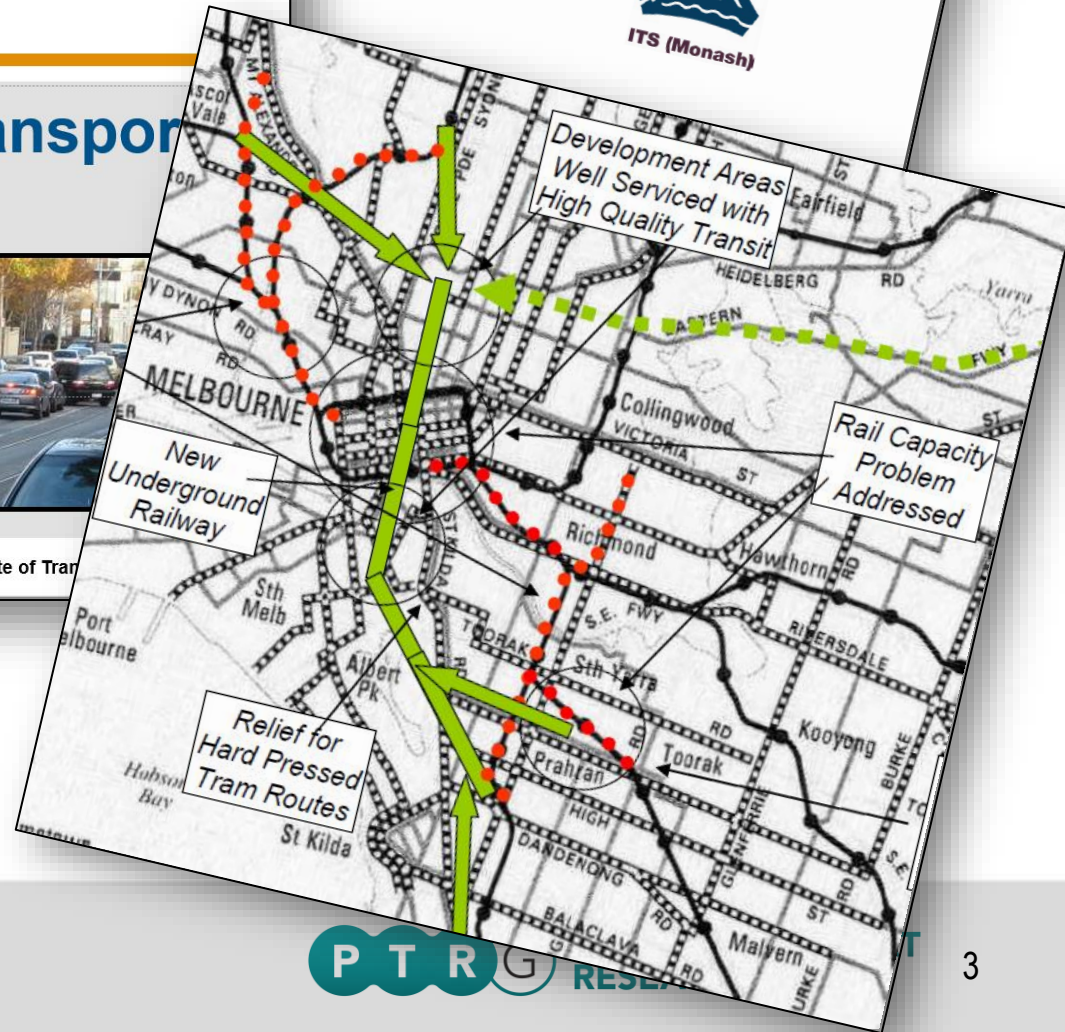
Professor Graham Currie
Professor of Public Transport,
Institute of Transport Studies,
Monash University



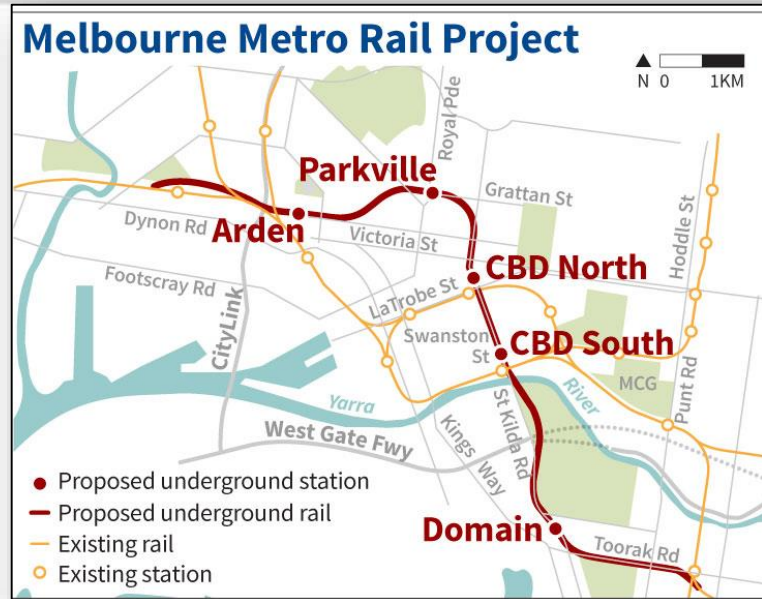
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Institute of Transport Studies

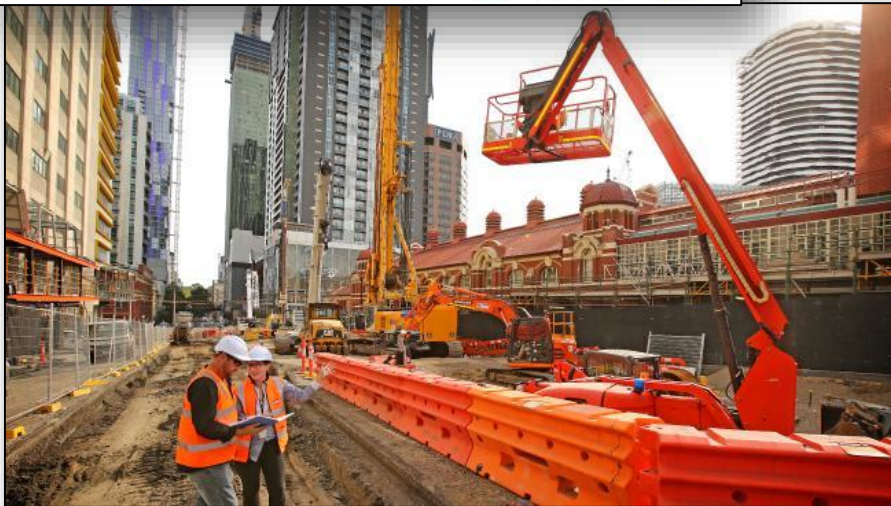
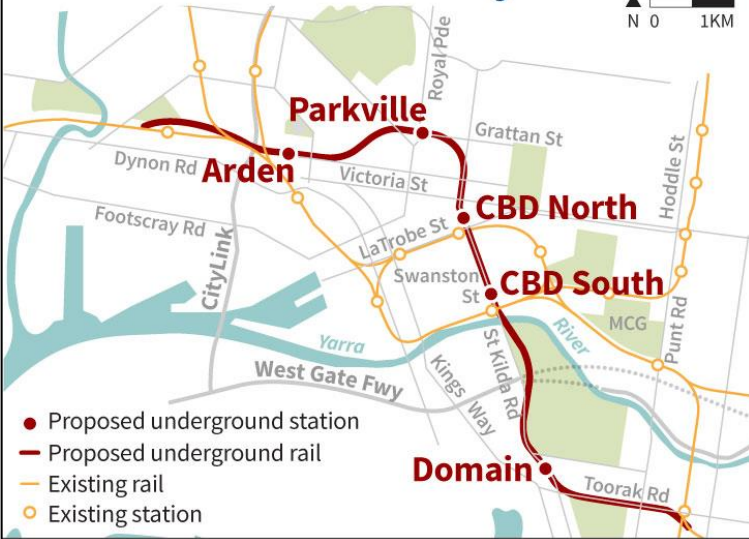


...project is now being built;



...project is now being built; but needs grow and the context has changed

Melbourne Metro Rail Project



New Drivers of Change

- Inner Urban growth GREATER than expected
- Over 100 applications for towers above 100 meters in the CBD
- Traffic growth continuing
- Limited capacity of lines

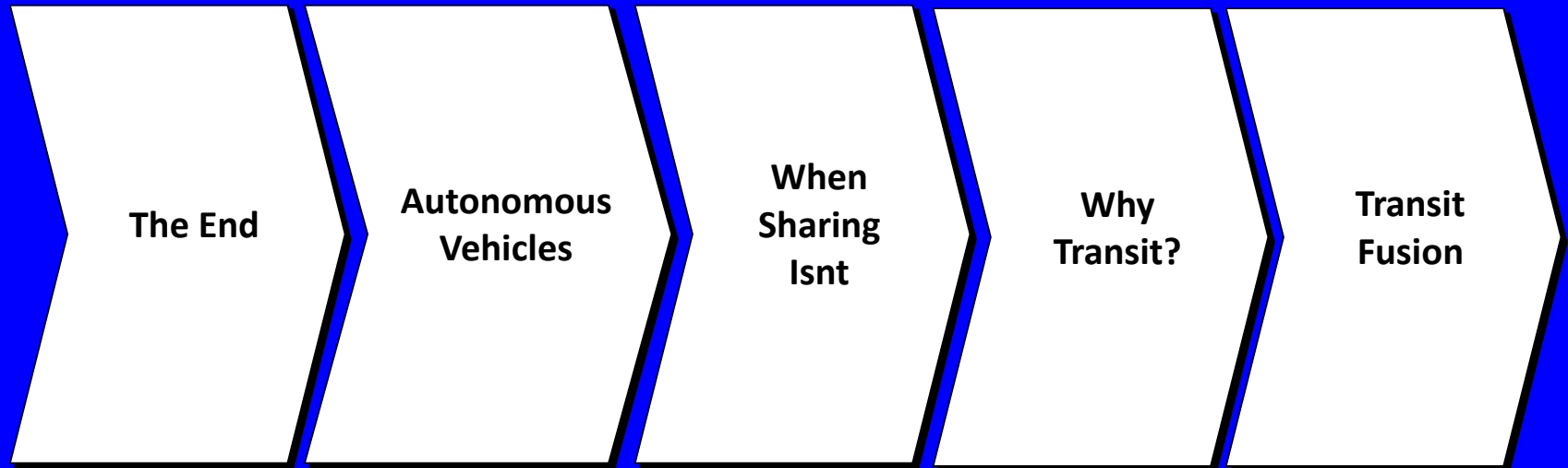
Have New Technologies
Provided New Solutions?

This session therefore considers transit futures in a changing new world

- An updated look at PT futures
- Considering:
 - new mobility, autonomous vehicles and shared mobility and public transport
 - Explore the future case for Transit systems
 - Look at some new and interesting developments in the field



...and is structured as follows



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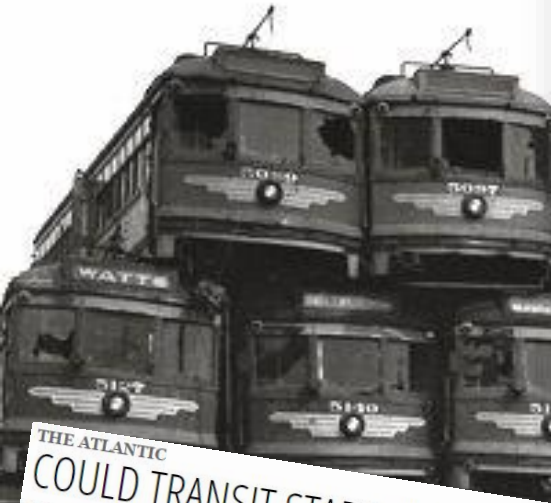
When Sharing Isn't

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THE END



THE ATLANTIC
COULD TRANSIT START-UPS BE THE
TRANSPORTATION?



in San Francisco

Start-ups like
disrupted the
revolutionized
have to rely on
However, they
on public transi

Public transportation is often funded by
the amount of people riding it regularly,
s harder for cities. The problem begs the question, should cities privatize
transportation? After all, the [New York City](#) subway system was
e companies, not the government.

is some riders choose to catch a Lyft, economics of funding a bus route is making
s harder for cities. The problem begs the question, should cities privatize
transportation? After all, the [New York City](#) subway system was
e companies, not the government.



The End of Transit and the Beginning of the New Mobility: Policy Implications of Self-Driving Cars

[SHARE](#)

Policy Forum

October 14, 2014
12:00PM to 1:30PM EDT
Hayek Auditorium

Featuring **Randal O'Toole**, Senior Fellow, Cato Institute; **Marc Scribner**, Research Fellow, Competitive Enterprise Institute; and **Adam Thierer**, Senior Research Fellow, Mercatus Center; moderated by **Matthew Feeney**, Policy Analyst, Cato Institute.

Experimental self-driving cars have successfully operated more than 700,000 miles on American highways. Such cars will be on the market by 2020 and will radically transform the 21st century. What should Washington policymakers know about the future of American mobility? Randal O'Toole will describe the implications of self-driving cars for urban transit and regional transportation planning. Marc Scribner will discuss the laws and regulations that should govern self-driving cars. Adam Thierer will review the privacy implications of self-driving cars. Please join us for a preview of the future of American transportation.



The End of Public Transit?
ns are proving more efficient than government in areas like
Should some services be privatized?

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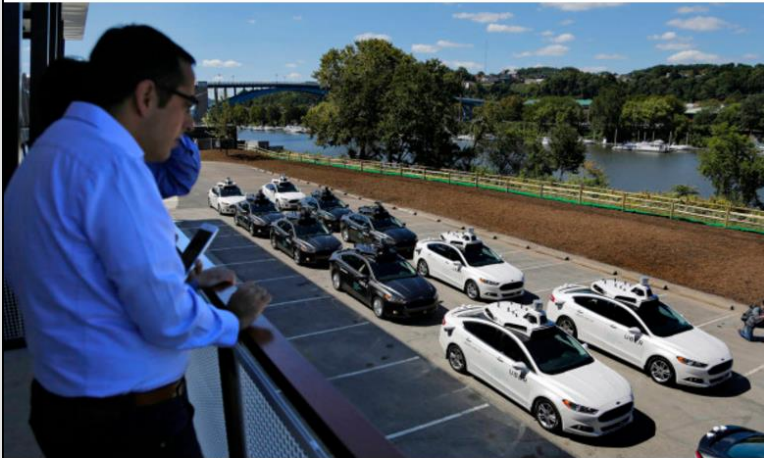
Transit Fusion



Driverless Cars; the end of Transit

Driverless cars could make mass transit obsolete

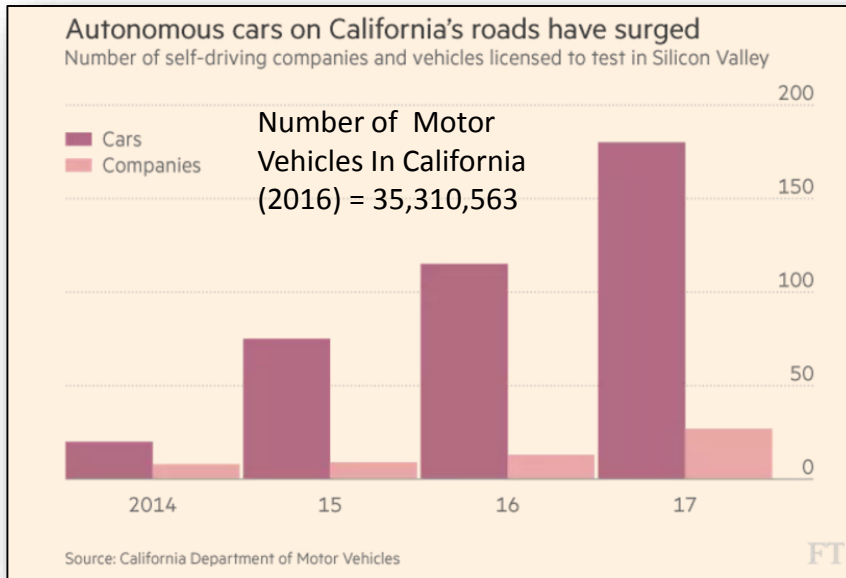
BY DAVE ROSS
OCTOBER 25, 2016 AT 9:27 AM



A group of self driving Uber vehicles position themselves to take journalists on rides during a media preview at Uber's Advanced Technologies Center in Pittsburgh. Driverless



Driverless Cars; current status



Australia's first self-driving car ready for the road this week

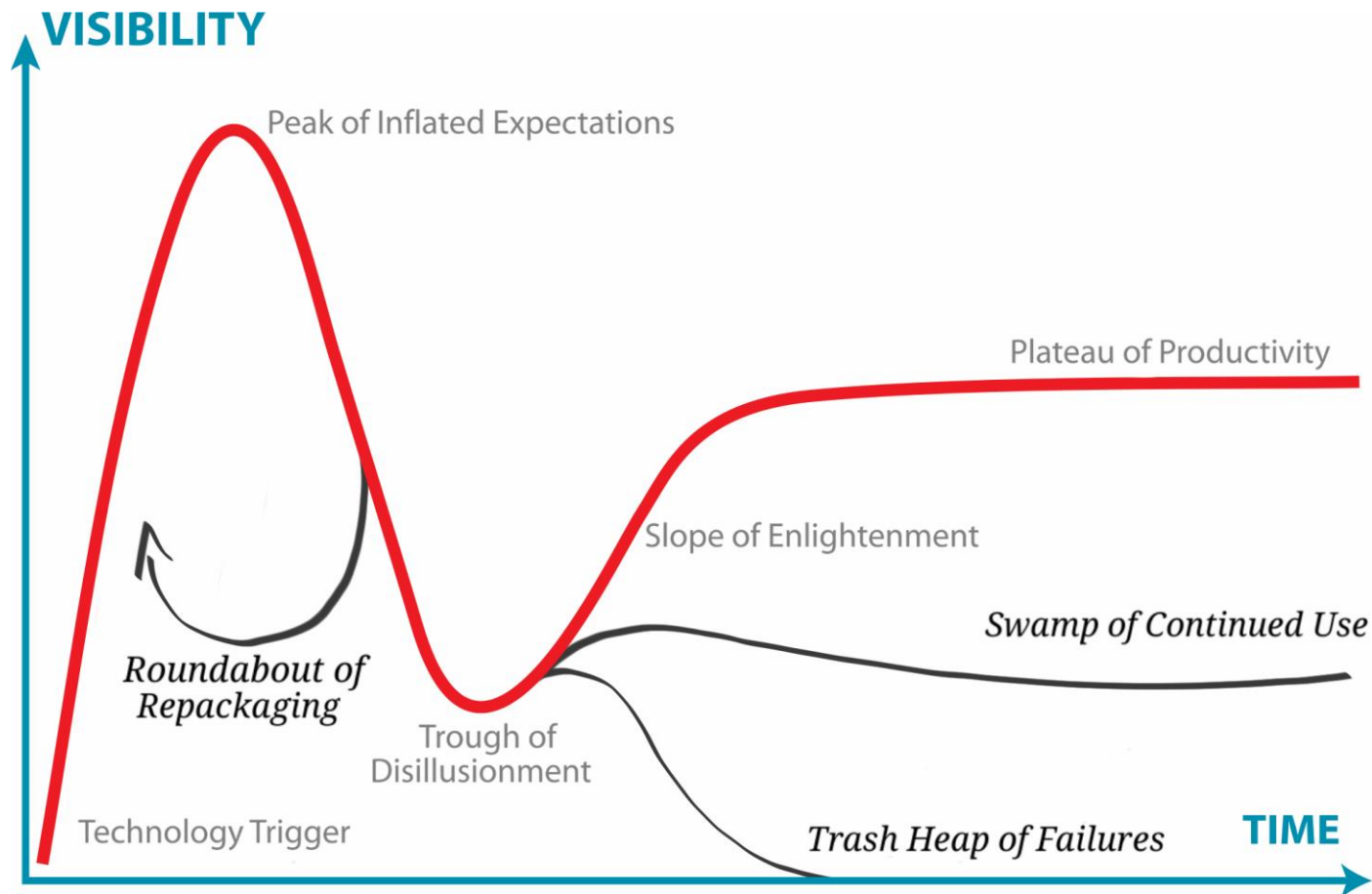
The World Today By Tim Lamacraft

Updated 6 Oct 2016, 2:05am

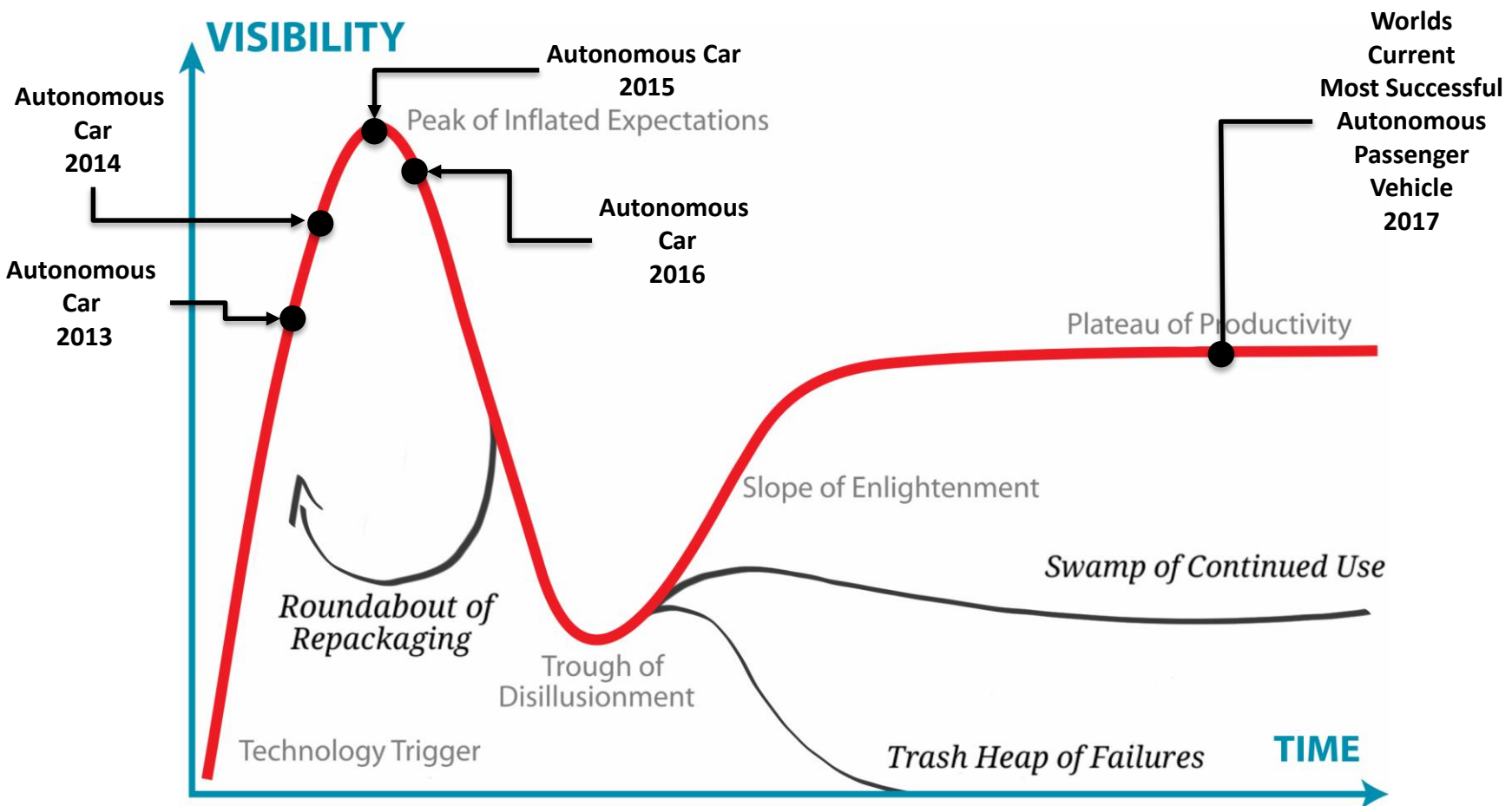


PHOTO: The car still needs someone behind the wheel, but it is designed to navigate roads with or without driver input. (ABC News: James Hancock)

The Hype Curve; technologists as experts in spin



The Autonomous Car – Contemporary Progress

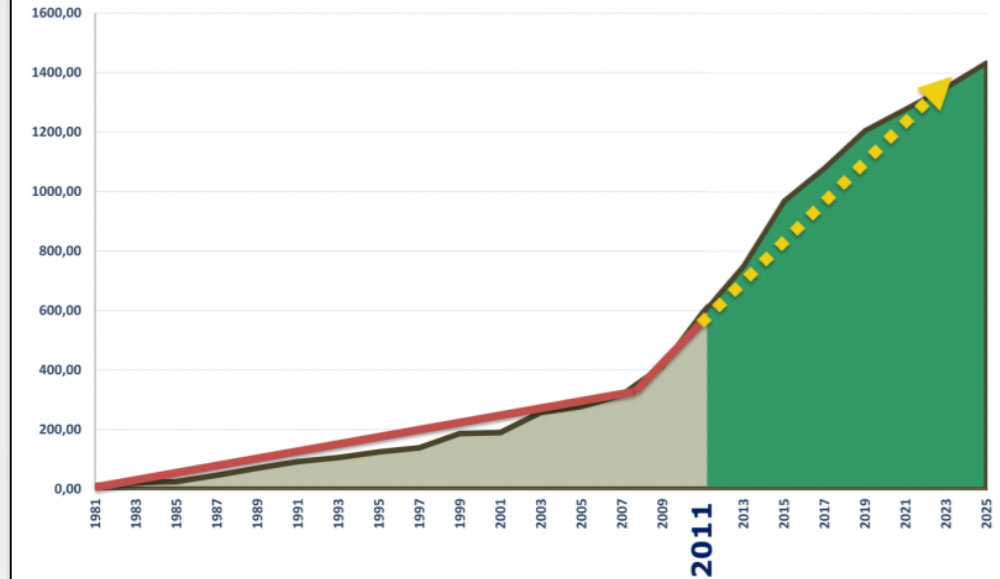


Source: Gartner; <https://www.gartner.com/newsroom/id/3784363>

Real Driverless Vehicles; trains



Figure 9: Expected evolution in automated lines (km)



Automated Trains are more efficient

Allowing for shorter journey times and more trains operating on the line at the same time.

2011



The Jubilee Line has increased the number of trains running in peak hours by 18 per cent, allowing an additional 5,000 people an hour.

2012

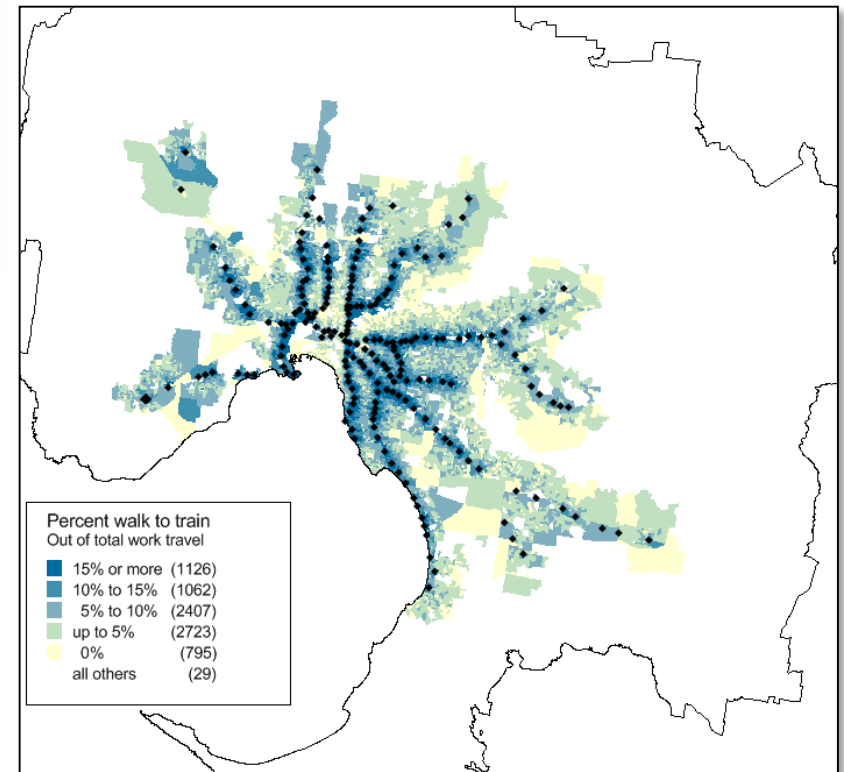


January 2012, overall capacity will increase by a third, this means the Jubilee can carry about 12,500 more passengers an hour.

Autonomous Buses – first/last mile solutions



Metro Trains Walk Market Penetrates only 7% of Melbourne



Source: PTRG Analysis of Census Journey to Work (2011)

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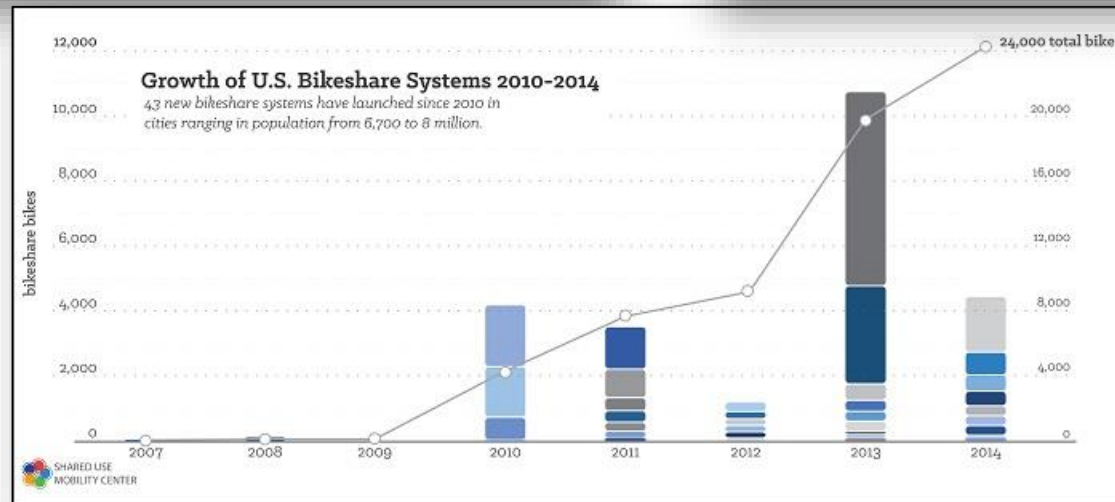
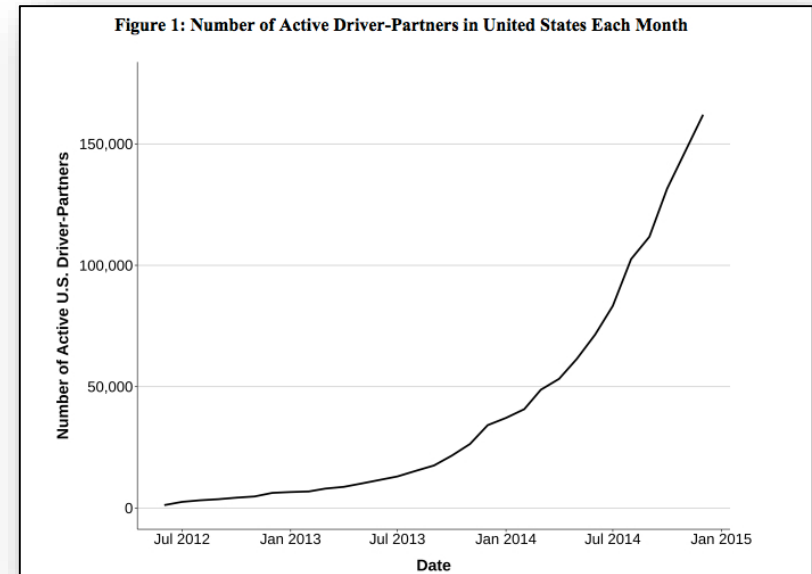


Shared Mobility

Is Sharing sharing?



Shared Mobility is growing; isn't that good?



Shared Mobility is growing; is that BAD for transit?

Can these companies make taking a bus cool?



SCOTT OLSON/GETTY IMAGES/FILE

Mark Fields, chief executive of Ford, spoke about the Chariot transit service — which was recently purchased by Ford — earlier this year at the North American International Auto Show in Detroit.

By [Scott Kirsner](#)

GLOBE CORRESPONDENT MARCH 03, 2017



TECH

Pop-up bus service looks to reinvent mass transit

By [Ben Johnson](#) and [Abraham Moussako](#)

July 03, 2014 | 5:00 AM

[Listen to this story](#)



An Academy Bus in New jersey. The "pop-up" bus service Bridj is using buses like these to provide an experience the company cites as a step above general public transit. - ([Secondarywaltz/Wikimedia Commons](#))

Shared Mobility is growing; is that BAD for transit?

Bloomberg Technology 



Uber and Lyft Want to Replace Public Buses

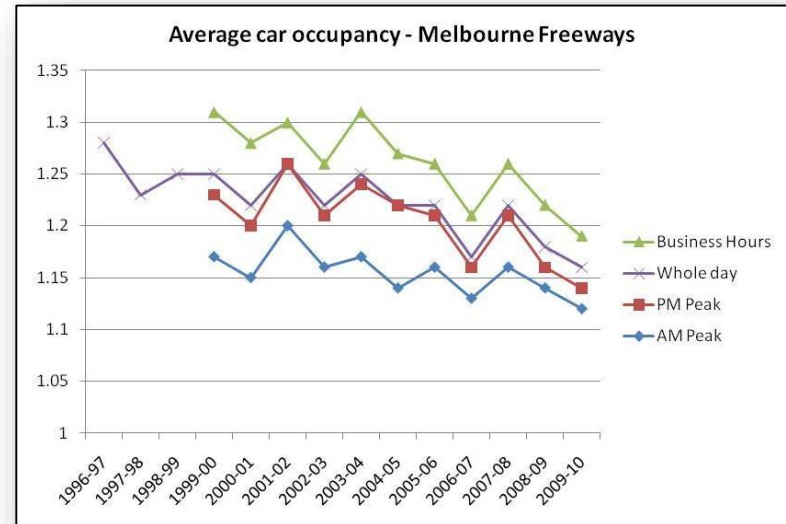
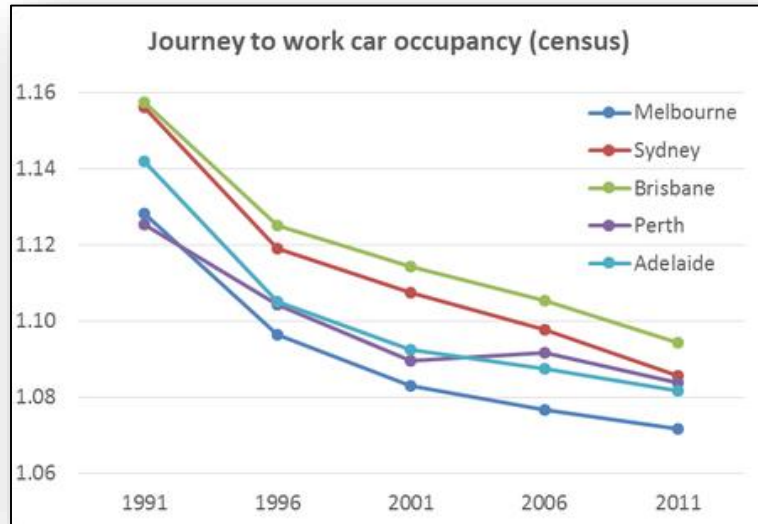
Pressed by tight budgets, some towns are cutting transit lines and subsidizing car rides.

by **Joshua Brustein**
August 15, 2016, 9:00 PM GMT+10
Updated on August 16, 2016, 1:16 AM GMT+10



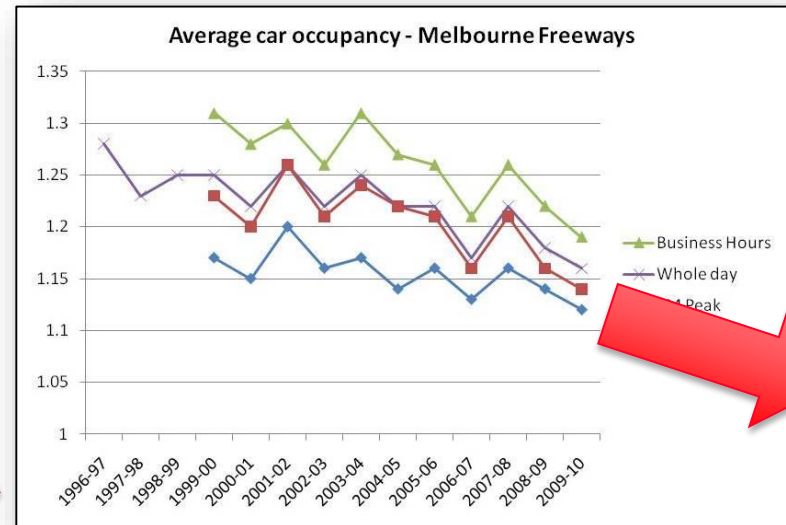
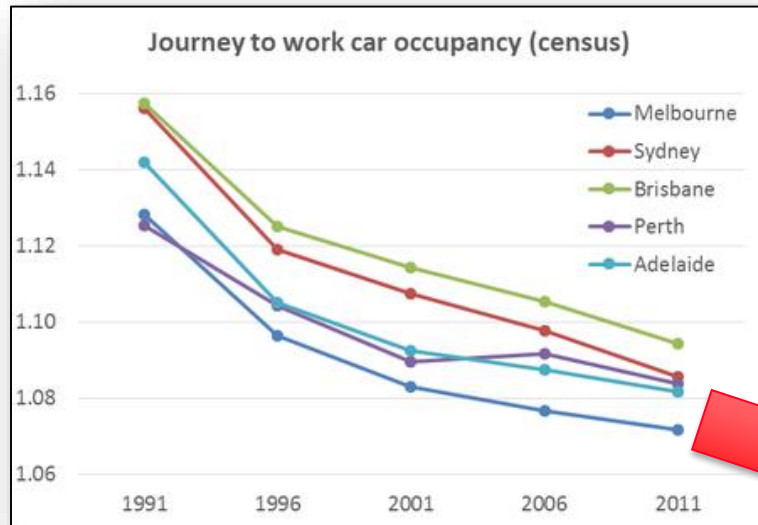
Illustration by Stephanie Davidson

Shared (car) travel is NOT growing; its been DECLINING for 30 years



Source: Charting Transport (2017)

With AV's we can now achieve occupancy ; BELOW 1!



Source: Charting Transport (2017)



Are Driverless cars the solution or another part of the problem?



When Ride Sharing Isn't – TNC's and Carshare

- Uber assumed to have the same occupancy as Taxi at 1.66 per vehicle (including the driver)

- Source: San Francisco County Transportation Authority (2017) 'TNC's Today'



It isn't much in the way of sharing

- CarShare – average vehicle occupancy is 1.44 (including the driver)

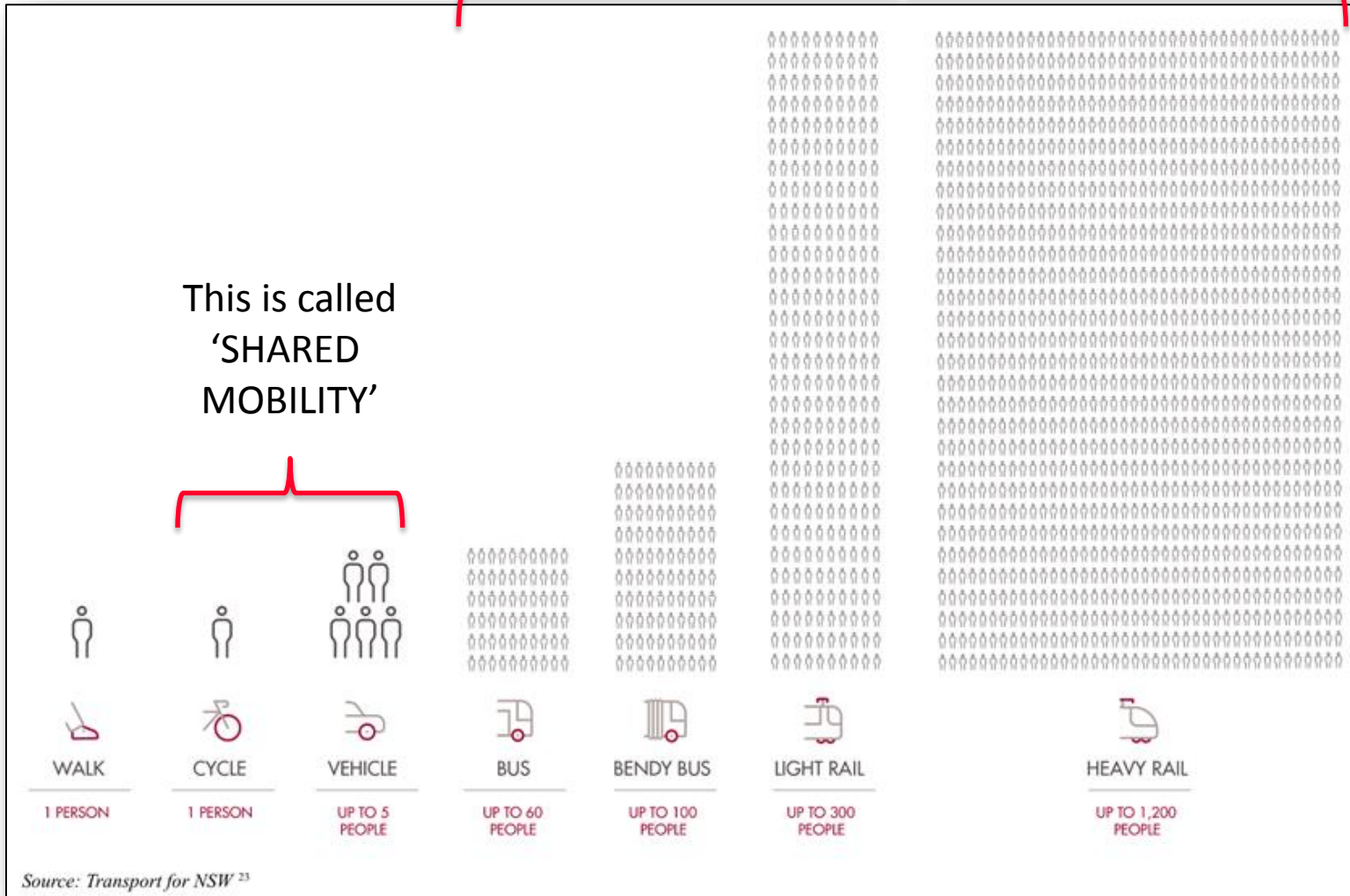
- Source: Cervero, R Golub A and Nee B (2007) 'San Francisco City CarShare: Longer-Term Travel-Demand and Car Ownership Impacts' Institute of Urban and Regional Development University of California at Berkeley



Slightly better than Melbourne traffic but known to have positive impacts in reducing car ownership

This is NOT Called 'SHARED MOBILITY'

This is called
'SHARED
MOBILITY'



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2007



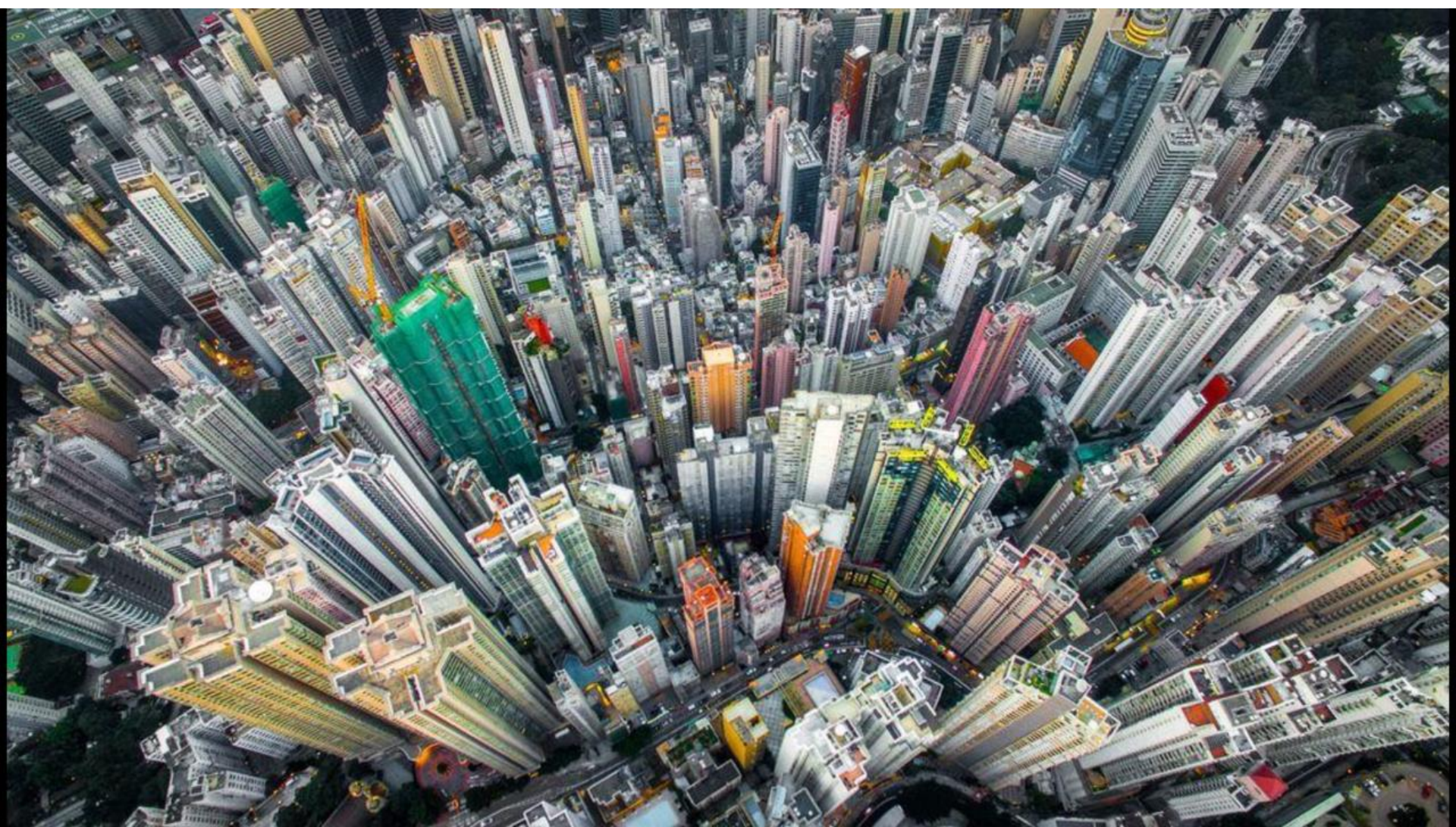
**PUBLIC TRANSPORT
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MONASH
INSTITUTE OF
TRANSPORT
STUDIES

2030

Cities; humanities future



Mass Transit=Efficiency and Volume

To carry 50,000 people per hour per direction, you need:

a 175m wide road used only by car



a 35m wide road used only by buses

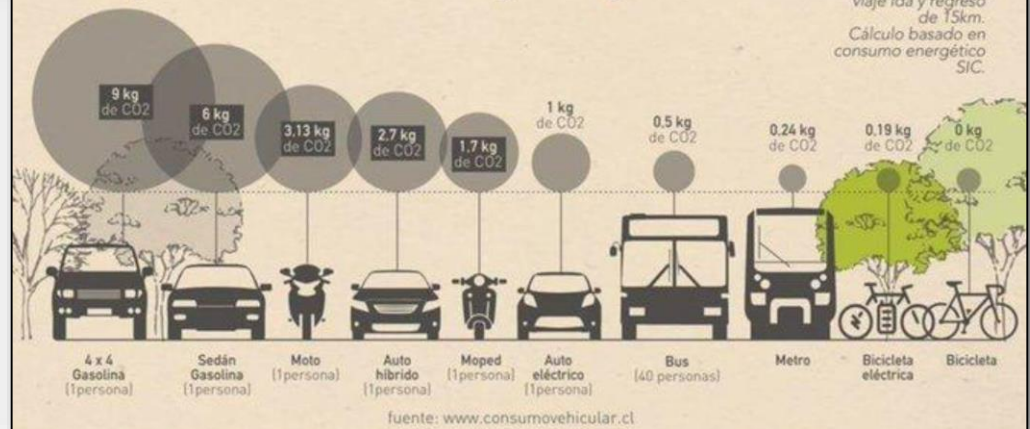


a 9m wide railway track bed for metro



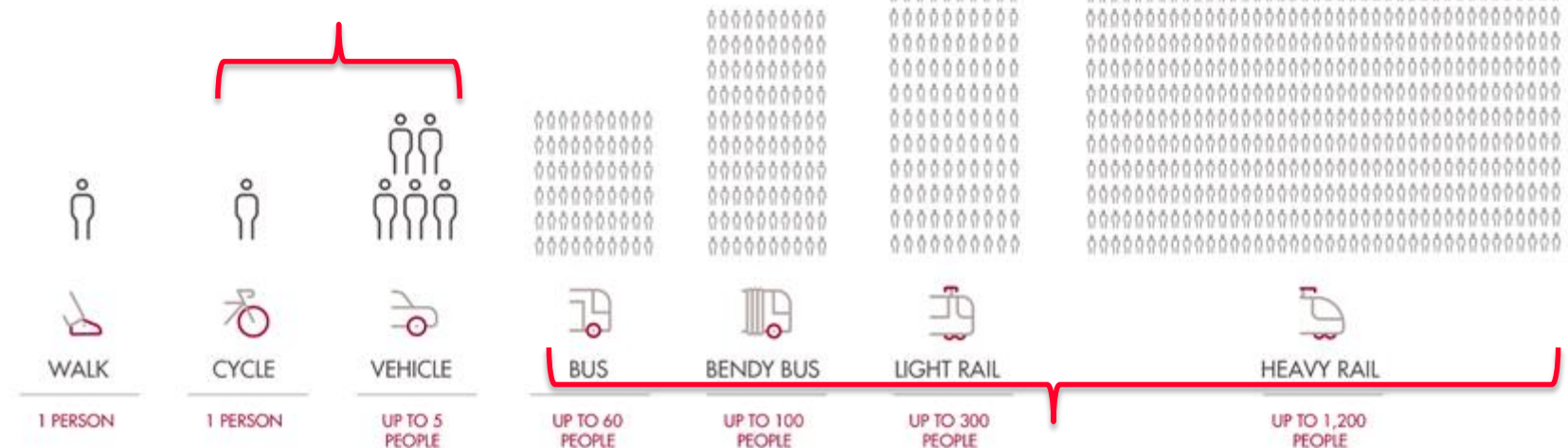
Comparación de emisiones por viaje*

Calculo basado en viaje ida y regreso de 15km.
Cálculo basado en consumo energético SIC.



Public Transport is the most efficient form of SHARED MOBILITY

This is **NOT**
'SHARED
MOBILITY'



Source: Transport for NSW²³

This **IS** 'SHARED MOBILITY'

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Transit Fusion – Bringing the New into Transit

U B E R + DART

Go further.
GoPassSM.

Simplify your
commute with the
FREE GoPass app.



Available on the App Store
Available on Google Play
Available in English & Español

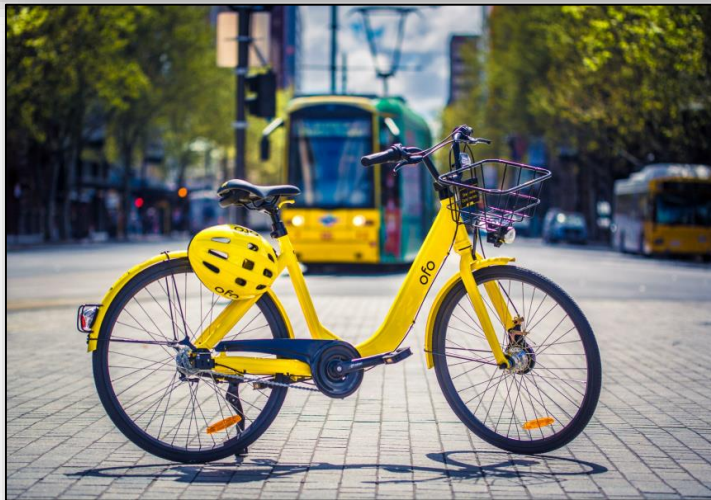


let's go.
DART.org

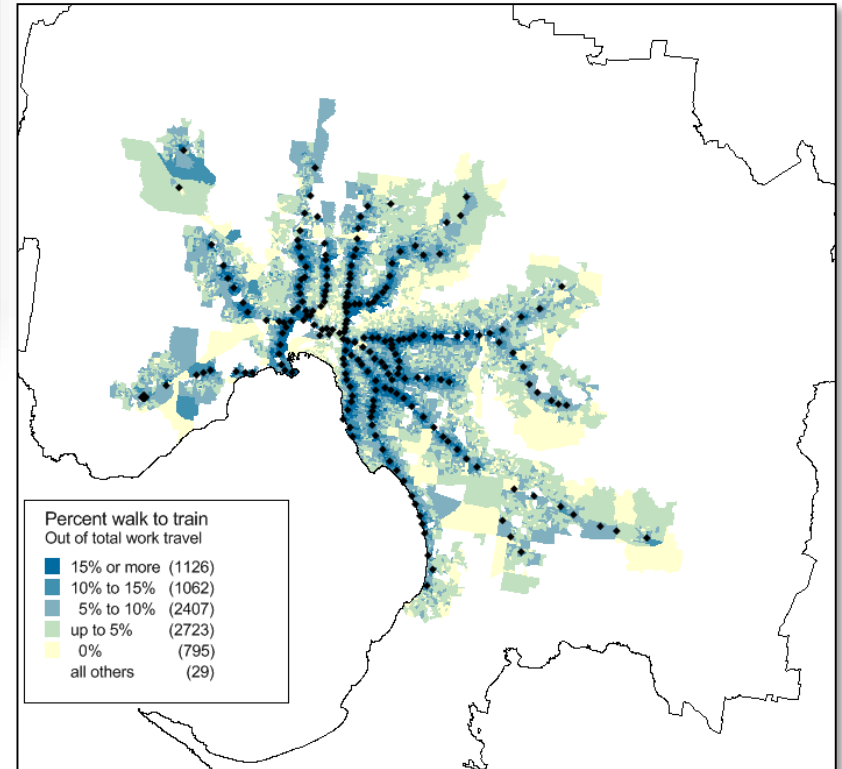


Transit runs the Car Share Scheme

Autonomous Buses, Dockless Bikes etc – first/last mile solutions



Metro Trains Walk Market Penetrates only 7% of Melbourne



Source: PTRG Analysis of Census Journey to Work (2011)

Bus Rapid Transit; Rubber Tired Railways; cost effective but not as good?



A New Way to Bring the Train to the City



www.worldtransitresearch.info



The screenshot shows the World Transit Research website. At the top, there's a navigation bar with links: Home, About, FAQ, and My Account. The main content area is divided into several sections: "About World Transit Research" (describing the site's purpose), "Browse Research" (with a "Follow" button), "Subject Areas" and "Current Newsletter" (with "Top Authors and Papers"), "At a Glance" (showing "Recent Additions" and "Activity by year"), and "Paper of the Day" (highlighting a paper by Le Zhang, Xiaoping Qiu, et al.). A "Reader from:" section shows the user is from Curitiba, Parana, Brazil, and is viewing the "World Transit Research February 2017 Newsletter". Below this is a world map with a location pin in South America. At the bottom, it shows "Recent Downloads" (9 of 72 in the past week). On the right side, there's a sidebar with a search bar, "Advanced Search" options, a "Newsletter" sign-up form, "Links" to related sites, a "Browse" section with links to Subject Areas, Disciplines, Authors, and Titles, and an "Author Corner" with links to Author FAQ and Submit Research.

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PTRG is the name for researchers at Monash University who are engaged in research on public transport systems, users, planning and policy.

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