Putting People First: Human Factors-Driven Infrastructure Design for Empowering Active Travel

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Acknowledgement of country

We recognise and pay respect to the Elders and communities – past, present, and emerging – of the lands that the University of Sydney's campuses stand on. For thousands of years they have shared and exchanged knowledges across innumerable generations for the benefit of all.

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Jolls, Frank P & Richmond & Co. (Buffalo, N.Y.) printer. (1886). *[An Aboriginal man hunting a kangaroo on a bicycle]* Retrieved October 8, 2023, from National Library of Australia, http://nla.gov.au/nla.obj-657969961

We all want Active Transport

"We want walking and cycling to be the preferred mode of transport for short trips"
Transport for NSW Active Transport Strategy

"London's streets should be for active travel and social interaction, but too often they are places for cars, not people"
Greater London Authority, Transport Strategy

"Increasing the wellbeing of New Zealand's cities by growing the share of travel by public transport, walking and cycling"
New Zealand Transport Agency, A plan for mode shift

…and many more…

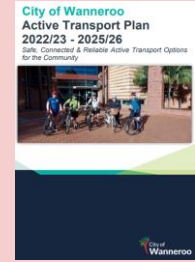# Active Travel Strategies

Selected Australian States

VIC (state)	QLD (state)	WA (city)

NSW (state)

Selected International Nations

NZ (city)	Canada (National)	UK (city)

Will our efforts and investment lead to…

What is our vision in Australia ?

NSW (state)

A state where we double the active transport trips from the current approx.1.5B trips/year through connected and continuous cycling networks, safer precincts and streets, reduced congestion, healthy people, 15 minute neighbourhoods and providing for the population growth whilst achieving a net zero by 2050.

Victoria

Thriving with 8M People by 2051, Doubling Transport Trips, Prioritizing Short Journeys, Cycling for Commuters, Safe & Connected Infrastructure, Safe systems Approach for active transport Safety

Queensland

Make walking a clear irresistible choice for short trips and integrate active transport with public transport for long journeys. Culture that builds active habits for life for diverse population.

Perth

Pedestrian first environment and prioritized cycle networks. All ages and all abilities design philosophy – Active transport is equitable and favored choice for as many as possible. A mass behavior change.

Safe   Direct   Connected   Attractive   Comfortable   Adaptable

What is our vision around the world?

NSW (state)

A state where we double the active transport trips from the current approx.1.5B trips/year through connected and continuous cycling networks, safer precincts and streets, reduced congestion, healthy people, 15 minute neighbourhoods and providing for the population growth whilst achieving a net zero by 2050.

New Zealand

Shift in urban form to make active modes attractive and infrastructure that influences travel demands and choices.

Canada

Active transport to address the triple bottom line of economic, environmental and social impact with emphasis on transport being the key to climate change response.

England

Target the short journeys undertaken in the city to be by active modes with at least 50% of all short journeys under 5km to be walked or cycled by 2030.

Active travel (benefits) around Australia

NSW (state)

Focus on cleaner environment for net zero, creating great places through local vibrancy and community, economic benefits and cost of living challenges, promote healthy lifestyle particularly for children and mental health.
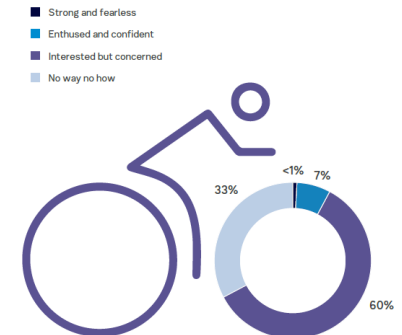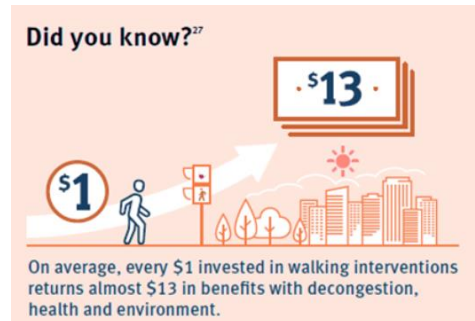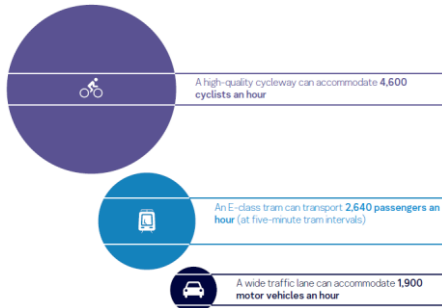
Victoria

Main competitiveness in quality of life, maintain strong community, high social and economic participation by having healthy people and environments.

Queensland

Community connectivity, environmental sustainability, safety and security, affordable and accessible for all. Cost effective in health costs.

Perth

Reduced road congestion for reduced number of road injuries through 'safety in numbers' principle. Independent mobility for all. Reduced greenhouse gas emissions.

A high-quality cycleway can accommodate **4,600 cyclists an hour**

An E-class tram can transport **2,640 passengers an hour** (at five-minute tram intervals)

A wide traffic lane can accommodate **1,900 motor vehicles an hour**

Did you know?[27]

$13

$1

On average, every $1 invested in walking interventions returns almost $13 in benefits with decongestion, health and environment.

- Strong and fearless
- Enthused and confident
- Interested but concerned
- No way no how

<1% 7%

33%

60%

Active travel (benefits) around the world

NSW (state)

Focus on cleaner environment for net zero, creating great places through local vibrancy and community, economic benefits and cost of living challenges, promote healthy lifestyle particularly for children and mental health.

New Zealand

Inclusive access for all, economic prosperity through efficient movement, reduce pressure on natural resources, improved public health and a reliable transport network.

Canada

Household savings, increased tourism, business spending, job creation, climate change mitigation, improved air quality, mental and social health and safety for vulnerable users.

England

Local and national economies, improving quality of life, saving households, address public health and environment challenges.

A bicycle can travel

423km

On the equivalent of 1 litre of vehicle fuel

What are the current barriers identified in strategies

NSW (state)

Focus on cleaner environment for net zero, creating great places through local vibrancy and community, economic benefits and cost of living challenges, promote healthy lifestyle particularly for children and mental health. 90% women unsafe outdoors at night, 50% of children get dropped off to school by car and 18% of serious road injuries are cyclists despite low percentage of riders.

Victoria

60% of Victorians avoid active transport due to safety concerns

Queensland

Improve culture, including respect between car drivers and active transport users.

Perth

Promote education and awareness for individual importance of active travel.

New Zealand

Limited travel options and increasing congestion due to low-density city structure with poor integration of active travel alternatives.

Canada

Marginalized communities with lack of equitable access to transport options.

England

Accessibility issue, where on 45% of disabled satisfied with active transport amenities.

Actions in strategies

NSW (state)
Integrate active travel into planning system, continuous paths, crossing enhancements, automation of pedestrian crossing, real time information to users. Work with all levels of government to plan cities for 15-minute neighbourhoods in urban and rural environments.

Victoria	Queensland	Perth
Safe systems approach in design, user centric testing to respond to user needs.	Programs in schools to encourage children to walk to and from school.	Focus on developing reliable routes between activity centers, missing links between destinations.

| New Zealand	Canada	England
Spatial and place-based planning, policy and regulation, network design and investment in connected paths.	Awareness of benefits, establish standards, collect data to make informed decisions, focus on vulnerable communities have safe and accessible cycling.	Bikeablity cycle training, disability groups through disabled person transport advisory committee and leverage data in planning.

Are we on the path for Active Travel Centric Cities?
Or… are we missing something?
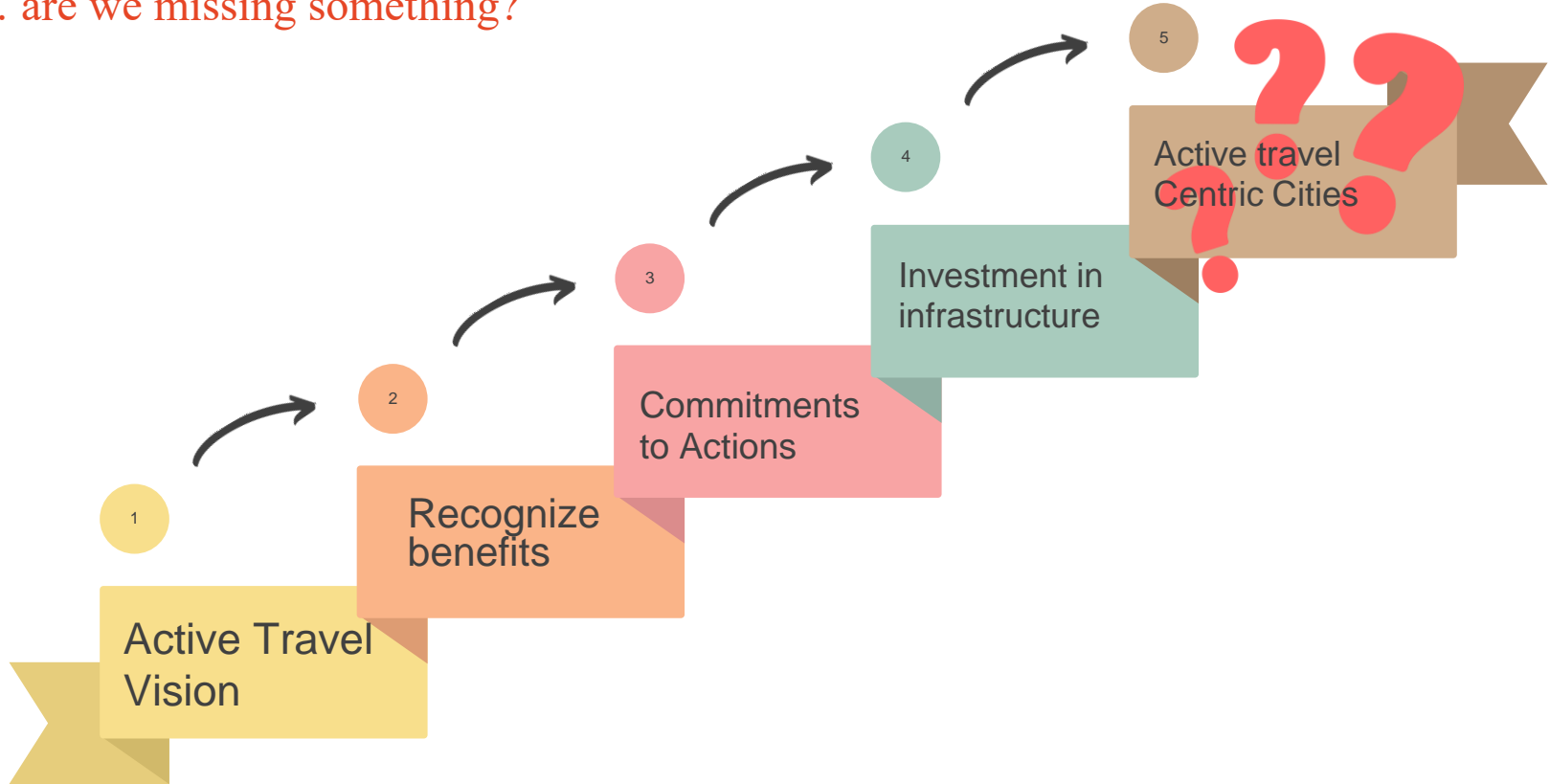
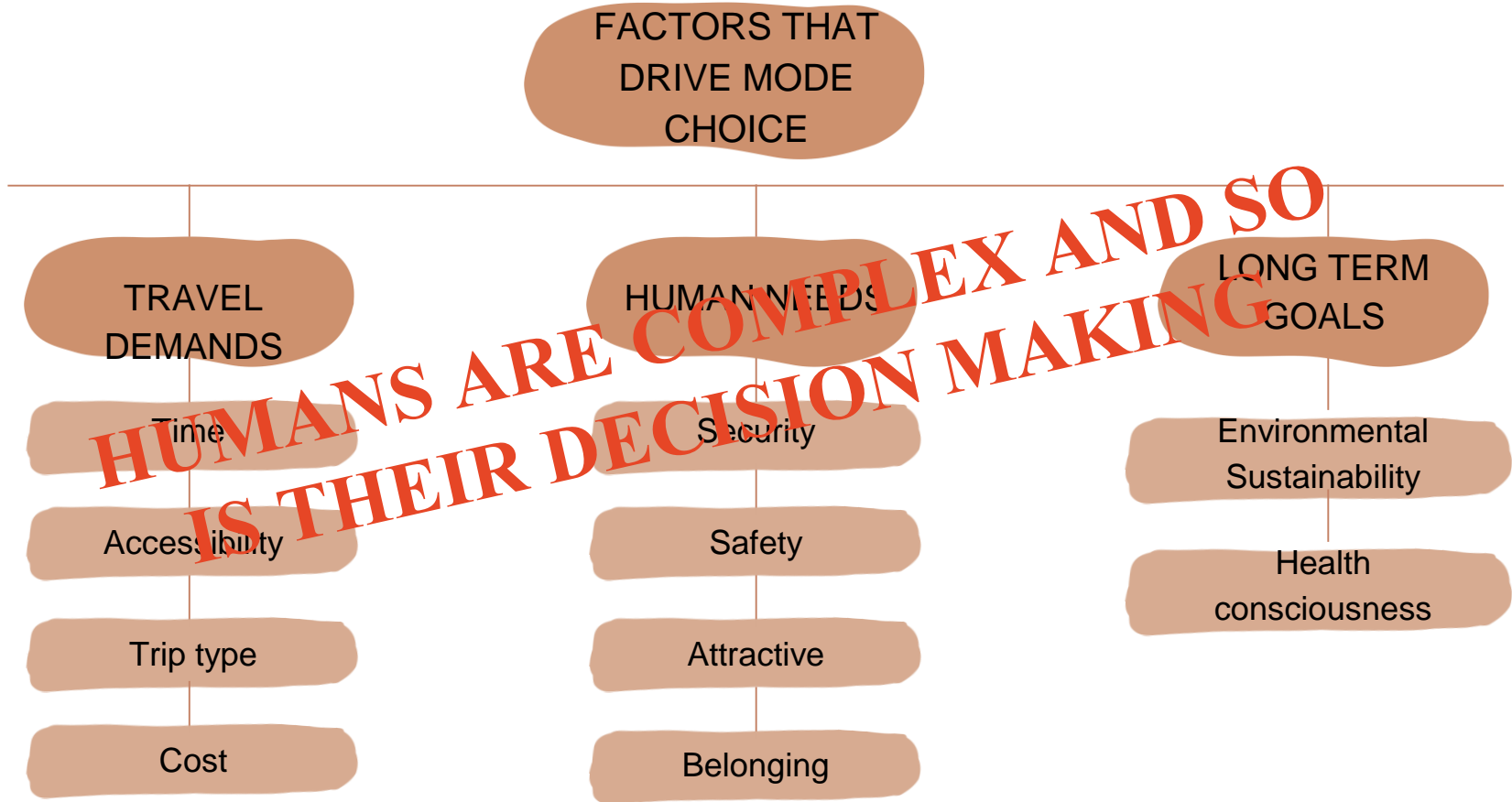# How do we get attain the active travel centric cities vision?

Active travel centric cities

Are humans going to respond to the infrastructure investment by changing their travel behaviour towards an uptake of active travel?
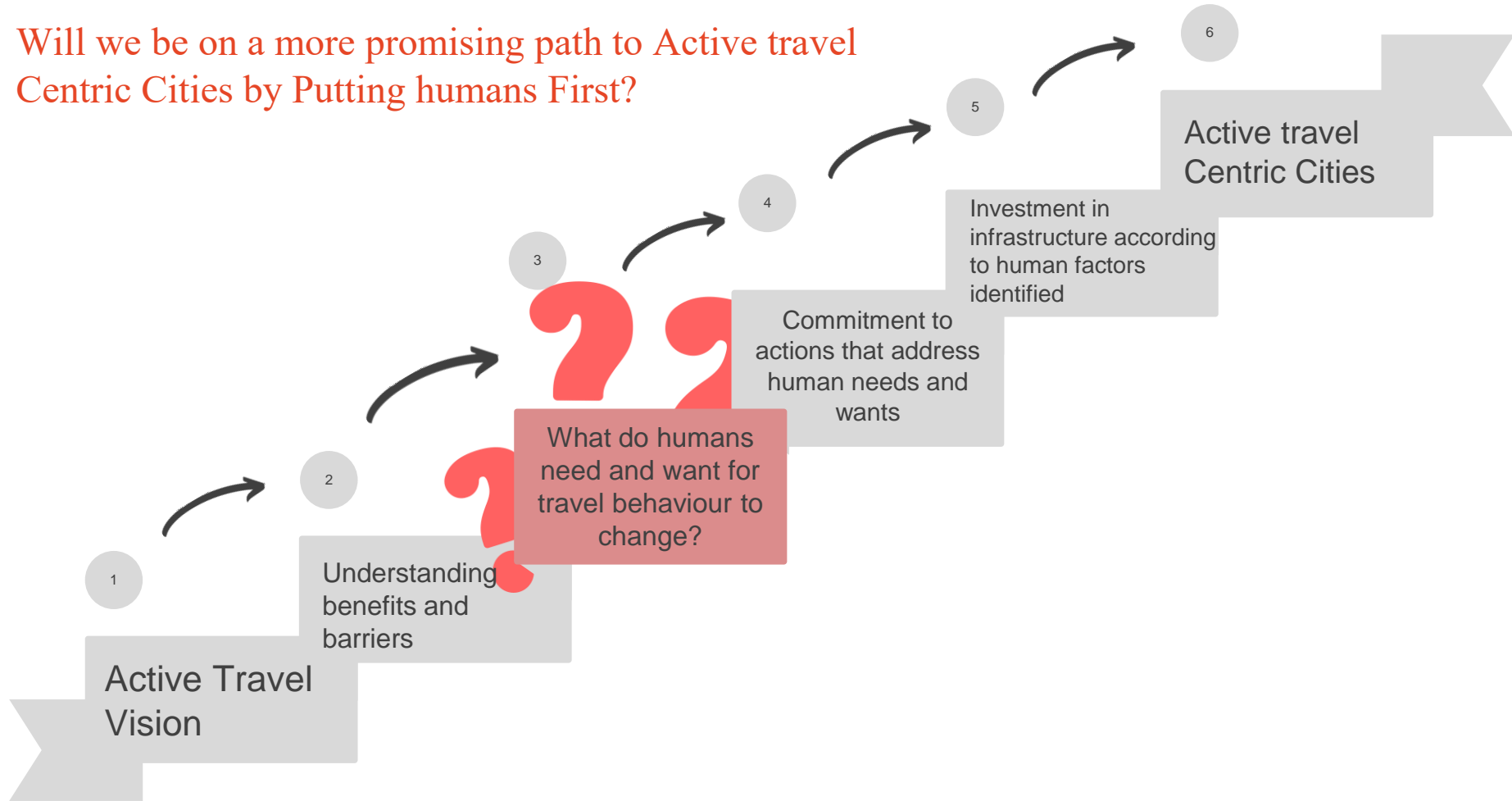
Does our infrastructure need to respond to the drivers of human mode choice for an uptake?

What are the drivers of human mode choice?

FACTORS THAT DRIVE MODE CHOICE

TRAVEL DEMANDS
- Time
- Accessibility
- Trip type
- Cost

HUMAN NEEDS
- Security
- Safety
- Attractive
- Belonging

LONG TERM GOALS
- Environmental Sustainability
- Health consciousness

HUMANS ARE COMPLEX AND SO IS THEIR DECISION MAKING

Will we be on a more promising path to Active travel Centric Cities by Putting humans First?

1

Active Travel Vision

2

Understanding benefits and barriers

3

What do humans need and want for travel behaviour to change?

4

Commitment to actions that address human needs and wants

5

Investment in infrastructure according to human factors identified

6

Active travel Centric Cities

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