

Active Transport: Enabling the revolution in South East Queensland

THOUGHT LEADERSHIP SERIES



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Planning, investment and use of active transport (including walking, cycling, skateboards and scooters) is caught in a negative feedback loop. South East Queensland is stuck in a car-dominant paradigm – one where ad hoc treatment of active transport leads to a low appreciation of the mode, which leads to low mode share, which further leads to continual ad hoc treatment, and so on.

This paper investigates opportunities to overcome the information gap that hinders the appraisal of active transport projects and to encourage a shift to a positive feedback loop for active transport.

Where are we now?

South East Queensland currently has a low walking and cycling mode share, at just 7.8% and 1.2% (9% combined) of all trips respectively¹. (For comparison purposes, 36% of commuting trips in Copenhagen are made by bicycle)². Many journeys in SEQ that are below 5km long could reasonably be undertaken by active transport (walking or cycling), yet 79% of these are currently made by private vehicle³. This low active transport mode share has remained broadly constant for the last decade, comprising 11%, 10% and 11% in 2004, 2007 and 2009 respectively⁴.

But recent strategic and planning documents, including the Australian Government Smart Cities Plan (2016), ShapingSEQ (2016), Transport Plan for Brisbane (2018), and the SEQ City Deal Proposition (2019) are now recognising the importance of active transport in achieving optimal urban planning outcomes and the benefits of increased active transport, including healthier lifestyles, reduced congestion and improved environmental outcomes.

“ Planning for active transport is caught in a negative feedback loop. ”

Recent post-implementation reviews of historic active transport infrastructure projects in South-East Queensland have supported these findings. The Brisbane Veloway 1 (Stage C), for instance, delivered a cost-benefit ratio of 5.4⁵. That is, for every \$1 invested, society received \$5.40 in benefits to health, congestion and the environment.

And yet, while State and Local Council plans provide guidance on proposed future active transport infrastructure, there is limited political will for these proposed active transport routes to be turned into a reality. This preference for private vehicle over active transport is driven by our current and legacy transport and land-use planning. Transport planning has had an almost singular focus on catering for car traffic growth, connecting expanding low-density suburban areas with increasingly distant destinations. This focus on vehicle movement (and car storage at the kerbside) has been at the expense of the place-making role of streets and has resulted in a poor level of service for active transport.

This dominant paradigm, one in which active transport is an afterthought, has resulted in a low active transport mode share, a lack of understanding of the benefits and importance of active transport, and therefore continual treatment of active transport in an ad hoc fashion.

Planning for active transport is caught in a negative feedback loop.

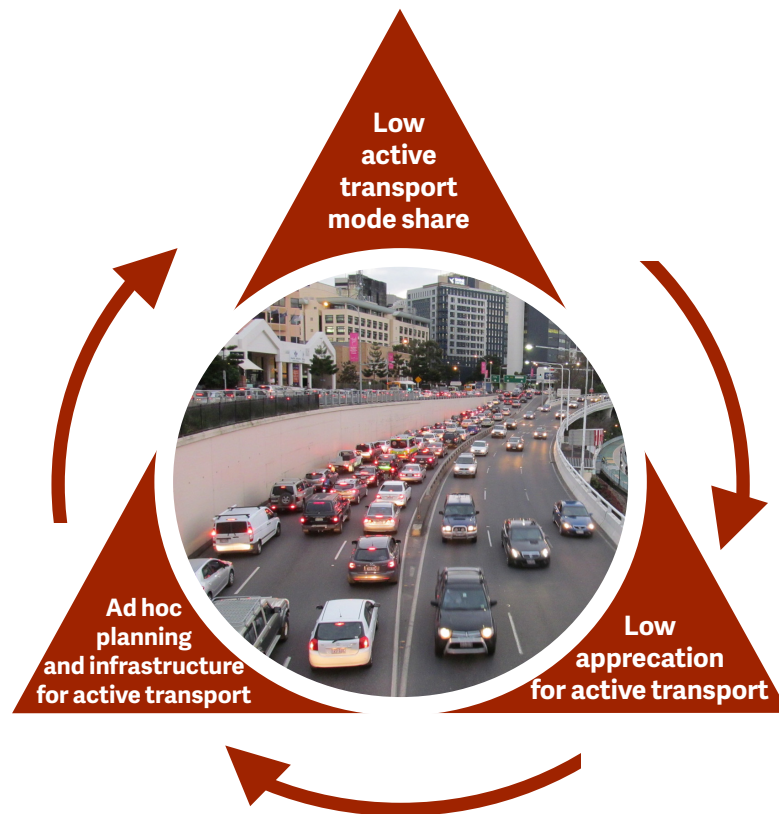
¹HTS, 2011

²City of Copenhagen, 2017

³Department of Transport and Main Roads, 2017

⁴Department of Transport and Main Roads, 2012

⁵Department of Transport and Main Roads, 2017



Where do we want to be?

Build it and they will come

A 2010 survey of 1,450 adult Sydney residents found that 64% of men and 67% of women surveyed wanted to cycle more than they currently did, with another Sydney based survey identifying lack of cycling infrastructure and fear of injury as key deterrents^{6 7}. These findings were supported by a Heart Foundation survey of 1,007 Australian women that found that 60% of respondents said they would like to cycle more⁸. Concerns about personal safety, particularly vehicle speed and car volumes, inhibited their uptake of cycling.

Women are generally considered to be the 'indicator species' for active transport friendly environments, as they are more likely to be discouraged by hostile environments than men. Currently, Queensland has about twice as many men as women cycling during a typical week in Queensland⁹.

This suggests that:

a) Queensland does not currently provide an 'active transport friendly' environment, as indicated by the strong disparity between genders in cycling participation;

“ Currently, Queensland has about twice as many men as women cycling during a typical week in Queensland⁹. ”

⁶Rissel et al, 2010

⁷Daley, Rissel & Lloyd, 2007

⁸Heart Foundation, 2013

⁹Department of Transport and Main Roads, 2017

“*...with an active transport mode share of just 9.0% and 79% of journeys in SEQ under 5km made by private vehicle, there is still a ways to go.*”

b) There is likely to be significant latent demand for cycling; and

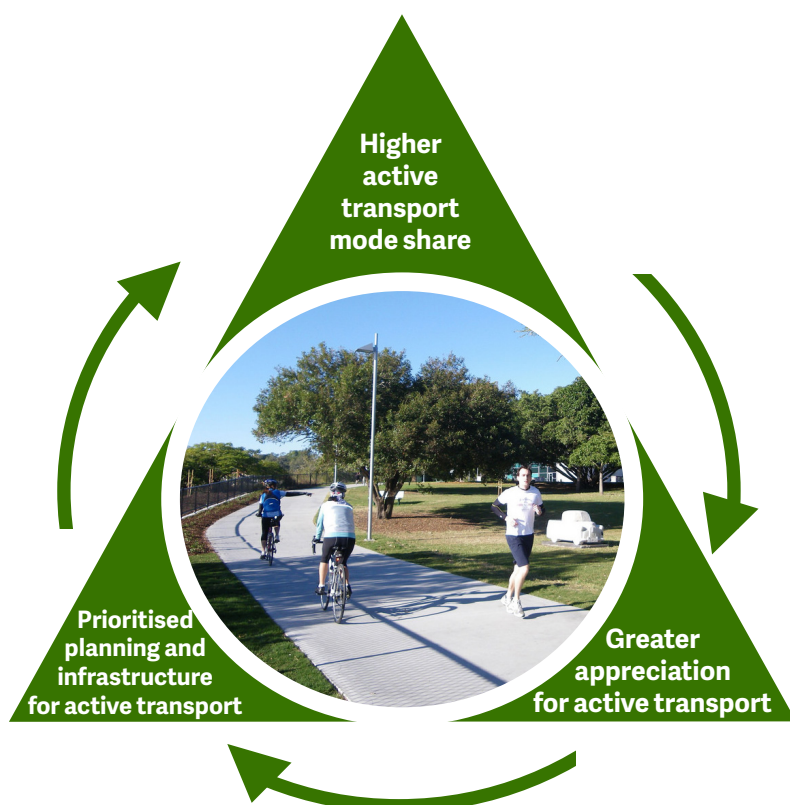
c) This latent demand for cycling could be reached through additional investment in active transport infrastructure, particularly separated cycleways, to address perceived safety risks and to support cycling uptake.

This investment in cycling infrastructure is necessary to break a negative feedback loop for active transport.

A positive feedback loop

We have strategic and policy support for increased active transport mode share and latent demand for active transport that could be realised by additional investment in infrastructure. Now we want active transport planning and investment to be part of a positive feedback loop – one in which active transport is prioritised and one which results in higher active transport mode share.

And yet, with an active transport mode share of just 9.0% and 79% of journeys in SEQ under 5km made by private vehicle, there is still a ways to go.





What's stopping us? The information gap

Although State and Local Council plans provide guidance on proposed future active transport infrastructure, few proposed active transport routes become a reality.

There are two components to this break in the chain:

1. We build (and support) what we know. The dominant car focused paradigm can lead to hesitancy to invest in active transport at the perceived expense of vehicle movement.

(Although a 2016 study into new active transport infrastructure in Sydney suggested that the “build it and they will come philosophy” also extended to changes in people’s perception and use of active transport. Post-implementation surveys revealed that 63% of users were local, despite initial community perceptions that the local community would not use it¹⁰).

2. There is an information gap around demand and benefits for active transport that makes the progression of active transport projects through the appraisal stage difficult to achieve.

Resolving the latter information gap can also assist policy makers, politicians and planners in resolving the former. Information is ammunition.

“ There is an information gap around demand and benefits for active transport... ”

¹⁰ Crane et al, 2016

The information gap

A lack of historical investment into and focus on active transport infrastructure has resulted in an information gap that makes the progression of active transport projects through the appraisal stage difficult to achieve. There are two key components to this information gap:

1. Current transport models are inadequate for predicting travel behaviour responses to active transport projects. That is, we can't adequately predict demand for active transport projects.
2. Current economic appraisal guidelines are insufficient to properly capture the wider benefits of active transport projects. We can't adequately capture active transport benefits.

Predicting demand for active transport projects

If a hypothetical active transport project is implemented, people may change their route (i.e. to use the new infrastructure), their entire transport mode (i.e. from bus to cycling), what time and how frequently they travel or even where they live and work.

Transport models, supported by underlying data and understanding about travel behaviour, are used to quantify these potential behavioural responses. However, it has been historically difficult to accurately model active transport travel behaviour because:

- a. There is a lack of understanding of the causal relationship between detailed infrastructure upgrade options and consequent changes in user attitudes, intentions and behaviours to use active transport;
- b. The fine-grained active transport network, although somewhat similar to the road network, also includes active transport only paths and desire lines, such as cycleways and connections through parks, connections through buildings, etc. Traditional multi-modal transport models are insufficient to capture this fine-grained network;
- c. Active transport mode choice is more influenced by weather and seasonality than other modes, however a standard strategic model typically only models an average weekday; and
- d. Active transport use is currently very age and gender segregated. Traditional models do not account for this segmentation.

“
...traditional transport models that effectively incorporate walking and cycling are thin on the ground and have many cracks at close inspection...
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As such, traditional transport models that effectively incorporate walking and cycling are thin on the ground and have many cracks at close inspection (much like our footpaths).

In recent years, there has been a growing interest in properly modelling active transport demand, driven by recognition in strategic planning documents of the importance of active transport in achieving optimal urban planning outcomes. As low-speed personal mobility volumes grow (i.e. cyclists, e-bike and e-scooter users), so do conflicts between these users and other modes, bringing greater focus to the need for modelling of their behaviour.

Traditional modelling approaches must be reconsidered to keep up with the times.

Capturing active transport benefits

Further compounding the situation (of a lack of understanding around expected travel behaviour changes in response to investment in active transport infrastructure), we also have gaps in our ability to capture the benefits of active transport.

ATAP Active Transport guidelines, released in 2016, now provide methods to quantify the benefits of:

- Improved public fitness and health;
- Reduced traffic congestion;
- Increased traffic safety;
- Improved environmental outcomes

However, they fall short of quantifying other significant benefits of increased active transport mode share, including improved community cohesion, reduced urban sprawl, increased efficiency of existing urban infrastructure, open space preservation, improved social equity for non-drivers and increased passive surveillance. Economic assessments of road projects, too, fail to capture all benefits, however a long history of road projects means far fewer benefits are left on the table.



So, if we apply ATAP guidelines to a new active transport project we can quantify some of the benefits of this infrastructure, but by no means all.

These factors combine to result in a high level of uncertainty around economic assessment outcomes and cost-benefit ratios – those same cost-benefit ratios that are used to determine prioritisation of investment.

How can we solve the information gap?

There is an information gap around demands and benefits of active transport, with active transport projects facing an uphill battle when squaring off against traditional road projects. How can we close it?

1. Prioritise the development and expansion of existing transport models to suitably accommodate active transport.

This includes the expansion of networks to include fine-grained active transport network, demographic data (including gender and age), and factors influencing active transport route preference, such as gradient, infrastructure type (i.e. separated, on-road cycle lane, etc).

2. Enshrine pre- and post-implementation surveys of future active transport infrastructure into the design and development process for new infrastructure.

Traffic counters, such as those implemented along the Bicentennial Bikeway, are a step in the right direction, however they are limited in the information they can capture. Surveys should be conducted both pre- and post-construction of new infrastructure to distinguish between cyclists who have shifted route and those who have shifted mode.

Additionally, the reasons behind the shift in route or mode should be investigated.



3. Investigate alternative sources for data collection around active transport behaviour and movement.

Strava data (adjusted to reflect the entire population) is a potential starting point, although mobile app data (either opt-in via an explicit survey app or through aggregated location data, combined with machine learning to identify cyclist behaviour) also has strong potential.

4. Continue post-implementation economic assessments of existing and any future active transport infrastructure, to further strengthen the case for active transport investment.

5. Further research into the causal link between health benefits and active transport (and use this research to allocate health funding towards active transport).

6. Continue research into the so far unquantifiable benefits of active transport (i.e. improved community cohesion, reduced urban sprawl, open space preservation, improved social equity for non-drivers and increased passive surveillance).

Economic assessments of recent active transport infrastructure investments have proven that investing in active transport infrastructure is worthwhile. And yet planning for active transport is caught in a negative feedback loop. Resolving the information gap through funding of further research and improved data collection and transport modelling will give active transport projects a fighting chance in the investment approval process. It will enable investment against the dominant car-based paradigm and will kick-start a positive feedback loop for active transport.

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About Veitch Lister Consulting

VLC was founded in 1986 with one objective: build the tools and insights that help our clients plan the cities of the future. This remains our singular purpose today, driven by a culture grounded in independence, the pursuit of excellence and the desire to innovate. Our team of transport planners, engineers, modellers, economists and analysts deliver transport solutions that facilitate growth and prosperity for our clients and our communities.



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