Australian Infrastructure Audit - Submission on behalf of Freewheeler Pty Ltd

General

The AIA has identified significant infrastructure issues and challenges for Australia.

Before commenting on the AIA in detail, it is worth taking a step back to acknowledge that:

- Infrastructure is a core part of society.

- There are other serious challenges for society (eg health, productivity, environment).

- The common denominator in all of this is people and their interaction with their environment.

- People are not "silos" – they are complicated.

- Solutions need to address the complicated and interconnected nature of people, and therefore of society.

- Infrastructure issues are also tangled up in planning, health, tax, energy and environment issues.

- An integrated approach is needed for Australia to hope to fix these issues. Governments and departments need to work together.

The situation

The situation for Australian cities seems to be:

1. They were formed in the age of the car.

2. They are very spread out.

3. Urban sprawl has created huge infrastructure networks that cities cannot afford to maintain.

4. Urban sprawl also affects quality of life and energy consumption.

5. Australian cities are inefficient, considering infrastructure costs per person, which means individuals pay higher taxes.

6. The transport infrastructure is predominantly road and car based, which is particularly expensive in terms of maintenance, space, emissions, efficiency etc .

7. The transport network is deficient – alternatives to driving need far more investment. A cultural and infrastructure shift is needed, which will be expensive and difficult.

8. Planning and zoning laws have enforced urban sprawl, requiring large lots and segregation of uses.

9. People are used to driving, and they don't like the alternatives currently available.

10. People actually want to live in inner-city locations – where the places they want to go are nearby and easy to get to.

11. The suburbs need to be given "inner city" amenities.

12. **Australian Cities need to:**

    a. Stop spreading – contain city footprints as soon as possible.

    b. Reform planning laws.

    c. Concentrate development efforts and dollars on productive infill.

    d. Enforce high standards for new developments so that they:
        i.   are high quality
        ii. look good / interesting
        iii. integrate with their environment and the street

    e. Infill should be mixed-use high density (respecting heritage buildings) to reduce the need for people to travel far. This also increases vibrancy.

    f. Improve existing infrastructure, which will be justified by the higher concentration in people.

    g. Create hubs within existing city footprint and make sure essential infrastructure is available in each hub (eg schools, hospitals, sport & recreation, transport).

    h. Create comprehensive, multi-modal transport networks – this increases peak hour capacity with many co-benefits. The government should stop subsidising car use.

    i. Focus on active transport (walking and cycling) – it has huge environmental & economic benefits (due to increased productivity and decreased health care spending), among other things. Segregated pedestrian and cycle lanes needed.

j. Consider incentivising people to commute in ways that are good for their health, the economy, the community and the environment (see www.freewheeler.com). Along with suitable alternative transport infrastructure, this could start the positive behaviour change process that is needed to shift individual and political attitudes to achieve smart modern cities. The government would ultimately save money from health, productivity, infrastructure and environmental improvements.

k. Focus on light rail over buses, where possible.

l. Remove the need for parking bays in new developments.

m. Allow new developments to go higher.

n. Reform tax laws to stop encouraging car use – active and public transport should be encouraged instead.

o. Make streets enjoyable places to be – wide footpaths, gardens, trees.

p. Preserve the bushland we have left, in its natural state.

q. Connect coastal urban areas with the ocean – stop ruining these areas with carparks and roads.

r. Build high quality inner city parks and gardens.

s. Increase general tree coverage as much as possible – this prevents dense cities from feeling like "concrete jungles", minimises heat issues, makes people happy and helps counter cities' carbon emissions.

t. Communicate the many benefits of this general approach to the public and respond to concerns.

u. Make big infrastructure projects transparent and consultative. The public are jaded and cynical due to apparently damaging projects being pushed through at high levels for obscure political reasons. Release all relevant reports and detailed justifications to the public.

Perth and Peel@3.5million submission

While there is some overlap, the below submission made to the Western Australian Department of Planning for the Perth and Peel@3.5million plan is relevant to the AIA, and contains useful links:

- **Approach**: The document states that, of the 3 options, the "Connected City" is preferred.

- **Opinion**: While connections are very important, the State should consider Perth's future as a "Contained City". Future development should be mixed-use high-density infill.

- **Reasons**:
    - Perth is already very spread out. Allowing further sprawl is not a good idea and should not be necessary. The cost of up-keep of the current city footprint will be high enough.

    - Economic: infrastructure costs are far lower per person in contained, high-density cities. See:

        - http://newclimateeconomy.net/content/release-urban-sprawl-costs-us-economy-more-1-trillion-year

    - Transport: spending can be focused on sophisticated, integrated public and active transport systems with the population critical mass to make these systems worthwhile. If the city is contained, then the public transport network can be upgraded to "permeate" existing suburbs. The great cities of the world have comprehensive rail systems (subway, tube etc) that allow quick, easy and flexible travel across the majority of the city. See:

        - https://files.lsecities.net/files/2014/11/LSE-Cities-2014-Transport-and-Urban-Form-03.pdf
        - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3890/making-sustainable-local-transport-happen-whitepaper.pdf
        - https://au.news.yahoo.com/thewest/wa/a/25468487/planning-expert-hits-out-at-car-obsession/

    - Road congestion: will be less of an issue as people use efficient multi-modal transport networks. See:

        - http://www.smh.com.au/nsw/53-billion-congestion-crunch-looms-warns-infrastructure-australia-20150521-gh6rzy.html

    - Lifestyle: people like living in vibrant, convenient places.

    - Health: in well-planned high density cities residents walk, cycle and catch public transport more. This leads to major health and productivity benefits. Health care spending is seriously damaging economies around the world. See:

- http://www.ipenproject.org/documents/conferences_docs/active-cities-full-report.pdf
- http://www.medibank.com.au/Client/Documents/Pdfs/The_Cost_Of_Physical_Inactivity_08.pdf
- http://www.heartfoundation.org.au/active-living/why-active-living/Pages/default.aspx
- http://www.abc.net.au/radionational/programs/healthreport/commuting-to-better-health-in-2015/6000444

- Safety: people will be "out and about" more as there will be fun and interesting things to do nearby. They will walk. Children will walk/cycle to school. It is well established that the more pedestrians and cyclists there are, the safer it becomes. As streets become "alive" the opportunities for crime decrease.

- Community: community interaction will occur. The current city model promotes being solitary – big private houses, often in suburbs with nothing to do, with long car-based commutes.

- Psychology and policy: if Perth declares it is a contained city, and implements appropriate regulatory changes to effect it, people will accept it and adapt, especially if they are properly informed about the many benefits that will come with it. If Perth says it will "try" to be contained, but some further sprawl is ok, it will be business as usual as the city perimeter continually creeps outward. In the short term sprawl is easy. In the long term it will destroy the city. However people live in the short term, so if it is an option then they will take it. Decisive action is needed. Progressive, world-class regulatory change is needed to enable Perth to become a contained, vibrant city. There are plenty of international examples to follow. See:

  - http://www.oecd-ilibrary.org/urban-rural-and-regional-development/the-metropolitan-century_9789264228733-en
  - http://static.newclimateeconomy.report/wp-content/uploads/2015/03/public-policies-encourage-sprawl-nce-report.pdf
  - http://www.theguardian.com/public-leaders-network/2014/oct/14/transport-projects-sustainable-uk-ensure-public-health-climate-change

- Tourism: the city will become a tourist destination.

- Land values: will increase – people will want to live here.

- Affordability: will probably increase. Apartments should be cheaper than houses. There would be more competition. Effect of economies of scale.

- Skills and productivity: highly skilled and creative people will want to live here. GDP will increase.

- o Prosperity: businesses will thrive when there is a higher concentration of people. People will shop locally rather than drive to big shopping complexes. Walking and cycling friendly streets help local businesses. See:

    - http://www.heartfoundation.org.au/active-living/Documents/Good-for-business.pdf
    - http://www.heartfoundation.org.au/SiteCollectionDocuments/Heart_Foundation_%20Does_density_matter_FINAL2014.pdf

- o Environment: As cities' physical footprints expand carbon emissions and the use of resources grows exponentially. The planet does not have enough resources to support car-centric, large house, far-travelling lifestyles, especially as developing countries urbanise. Efficient city-living is far better for the environment. See:

    - http://www.amazon.com/Green-Metropolis-Smaller-Driving-Sustainability/dp/1594484848

- o International reputation and trade: Australian cities need to significantly improve their per capita carbon emissions to be internationally respected and competitive. See:

    - https://www.climatecouncil.org.au/globalresponsereport

Central Sub-regional Planning Framework 5.4.2 Public Transport page 45

- **Opinion**:
  - o Public transport also needs to specifically include active transport – walking and cycling.
  - o Continuous, safe, segregated pedestrian and cycling paths along major and minor transport routes will be of great benefit to Perth.
  - o Public transport should prioritise light rail over bus (for main routes), because light rail:
    - has higher capacity;
    - does not contribute to, or get stuck in, road congestion;
    - is preferred – people don't like buses much but they like trains;
    - increases regeneration, land values and tourism;
    - is permanent and trustworthy – people instinctively know where railways are, where they go and how to catch them.

Perth and Peel@3.5million

- **Relevant sections**:
  - o Page 65:
    - "utilise technology to improve links"
    - "actively encourage non-motorised transport and vehicle sharing"

- - "encourage people to…adopt more sustainable behaviour through…demand management **incentives**"
  - o Page 67:
    - - "Identify and pursue **incentives** to assist reducing peak infrastructure loads such as…"

- **Opinion:**
  - o The government should consider incentivising individuals (and perhaps businesses) for adopting modes of transport for their commutes that are good for their health and productivity, road congestion, Perth's liveability and the environment.
  - o Incentives could be in many forms, including tax incentives, medicare levy reductions and subsidised public transport. The economic savings that could be achieved from increasing public and active transport are very significant.
  - o The demand for these incentives exists. See:
    - - https://au.news.yahoo.com/thewest/wa/a/25363317/reward-us-to-ride-to-work/
    - - http://www.heartfoundation.org.au/SiteCollectionDocuments/BFAA-Action%20Area%2011.pdf
  - o The **Freewheeler app** could achieve the page 65 and 67 goals set out above:

Freewheeler app

It has been recognised that a problem with current alternative transport schemes is that employees are often required to choose one type of benefit and cannot claim for a combination of driving, taking public transport, walking and cycling.[1]

Freewheeler addresses this problem. It is a smartphone app (in development) that will enable sophisticated and comprehensive tracking and behaviour change tools for transport.

Freewheeler will **automatically** track and recognise the multiple transport modes in the daily commute, then reward commuters based on how active and sustainable each of their commute "legs" are.

The more "beneficial" the commute mode, the more points earnt per kilometre.

In descending order of benefit (proposed, by way of example):

1. Walking or running
2. Cycling
3. Public transport (bus, train, tram or ferry)
4. Electric powered vehicles
5. Fossil-fuelled car pooling/sharing

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[1] http://theconversation.com/paying-commuters-to-get-on-their-bikes-is-not-enough-28998

The "**benefits**" criteria focus on:

1. Health
2. Reducing congestion
3. Reducing carbon emissions
4. Reducing urban sprawl
5. Increasing city ambience and liveability

The system:

1. Uses GPS and sensors to track the commute route and transport mode
2. Verifies whether the trip qualifies as a commute
3. Awards points per kilometre according to the "benefits" criteria
4. Enables points to be redeemed for discounts/offers from participating businesses and other stakeholders (eg government)
5. Gamifies the experience and makes it social

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www.freewheeler.com