

Comments on the Integrated Transport and Land Use Plan By People for Public Transport (PPT)

Introduction

The great majority of the proposals contained in the draft Plan are fully supported by PPT. We are pleased to see projects such as the additional tramlines, the creation of a north-south rail line by use of an underground link in the CBD, electrification of additional sections of the train system, proposed new arrangements for bus services, improved bicycle access, and the changes in land use arrangements at activity centres. The many proposals will clearly assist to improve public transport usage and most likely reduce the high level of car dependency in the Adelaide metropolitan area.

The comments that follow aim to suggest further improvements, identify where additional information should be made available to the public, where additional modelling may be needed or to point out those instances where the plan lacks ambition.

The inner suburbs do well?

At various points in the Plan notice is given to the inner and middle suburbs as the focus of job growth (page 8) with particular emphasis on services and knowledge-intensive industries (page 32), as well as the cost of transport services to the outer metropolitan areas (page 12). Furthermore the Plan notes that most recent investment has been targeted to the middle and outer suburbs (page 8). In light of this, the most defined proposals for new investment are targeted to the inner suburbs.

Although much investment has occurred in the middle and outer suburbs, we do not accept that this has been sufficient to materially reduce car dependency.¹ Adelaide as a whole is still almost entirely reliant on motor cars for personal transport and this is especially seen outside of the inner suburbs. Nor do we accept the implication of “recognising that more and more people now want to live in or near the central city” (page 9) will mean that transit needs will reduce in the middle and outer suburbs. The Government will continue to allow significant greenfield development and thereby population growth will continue in the outer suburbs, often by persons who will have no capacity to choose the more favoured inner city. Unless you wish to travel into the inner city, the Plan is not clear on how to manage this growth in a way that decreases the demand for longer car-based trips and to provide more travel options for people without access to a car.

In this regard, we refer you to Attachment 1. This is a map of areas in Adelaide where the combined cost of mortgages and the cost of transport indicate vulnerability to potential shocks in oil prices. Arguably, many of these areas should be targeted for significant transit investment as

¹ In Adelaide the projected ‘Avoidable Cost of Congestion’ is estimated to grow from \$600 million in 2005 to \$1.1 billion in 2020 under a ‘business as usual’ scenario. From the national review of urban congestion trends, impacts and solutions. Council of Australian Governments, 2006.

they are the areas where reduction in car dependency may yield the greatest economic savings to the community. Insofar as the most vulnerable areas are in the outer suburbs, this adds impetus to readjusting the priority of proposed investment - at least in part - away from the inner suburbs.

There is more to (transport) life than work

Insofar as work-related transport needs are important, the proposals for the inner city appear sensible. However, ***there are significant transport needs that are un-related to work***. This includes travel for shopping, general business, social purposes and travel to school. Much road traffic occurs because these needs are not met by public transport. Yet very little of the Plan seems to capture the specifics of how these needs are to be addressed. The assumption appears to be that the general range of improvements will meet these demands.

For example, recent decades have seen very high growth in the number of children transported to school by motor vehicle. Some specific suggestions for how this trend would be reversed should be included in the Plan. Measures identifying which bicycle paths would assist particular students to reach particular schools should be modelled, or schools that need to be relocated or split up should be identified so that the Education Department capital planning is coherent with the transport plan. The absence of this level of modelling on non-work related transport needs gives pause as to the credibility of some proposals. At the very least, the concept and practices behind Vienna's "Fair Shared City" should be incorporated into the Plan. Attachment 2 describes how far infrastructure design goes beyond "heavy iron" and asphalt.

Regardless of inner city jobs, there are transport needs across the entire metropolitan area, not just the inner suburbs. Proposed investment which mostly targets the inner city over the next 30 years will not serve the wider community.

Why these tram routes?

It is not clear that the proposed tram routes are necessarily the highest priority routes. The considerable overlap between the map of proposed new tram routes and the historic tram routes (pages 46 and 47) is a clear acknowledgement that the trams should never have been removed. In this regard the reinstatement of some of the routes is long overdue. The Plan then goes on to state that beyond those localities near the trams, it is proposed to use a range of bus services instead (page 46).

However, Adelaide is now a Multimodal city which substantially extends beyond the 1950's boundaries.

Our question is that if trams are suited for the inner city, why not for the outer city, particularly around the various activity centres? If the Plan proposes that bus options are to be used for the middle and outer suburbs, why should they not be used instead for the inner city? At present, the proposed tram routes are an exercise in nostalgia for the 1950's with no modelling or cost-benefit analysis of why the particular proposals are better than some of the possible alternatives

given below. If models such as the Curitiba bus system are used the “high capacity Priority Corridors” (page 14) for buses may be as effective as a tram route.

Our intuition suggests that tram routes may be required in other directions, including for cross-suburban purposes or links to some of the “activity centres”. We suggest the following options:

- A tram route linking Noarlunga centre to its catchment area, including such suburbs as Christies Beach and Hackham.
- For Elizabeth, a similar arrangement to link suburbs along Peachey Road in the west, as well suburbs in the east along Craigmore and Yorktown Roads.
- In Salisbury, a connection to the Playford Growth Project (page 51) should also be considered. This may involve a link from Buckland Park, to Waterloo Corner Road, then to Salisbury Centre and then through to Park Terrace. Another route from Kings Road to Hollywood Plaza to Park Terrace may be useful.
- A tram route to link Modbury to Port Adelaide via Grand Junction Road.
- A route to link Port Adelaide/Semaphore to Brighton via Military Road, Tapleys Hill Road and Brighton Road.
- The Brighton link could further extend via Sturt Road from Brighton to Marion, then to the Tonsley tram line terminus on Sturt Road, and thence to the Flinders University and the Flinders Medical Centre.

There may well be reasons of topography, job locations etc. why some of these options may not work. Our concern is that without proper testing of such proposals alongside those routes already proposed we cannot be clear why certain routes have been favoured, what alternative routes should be considered if some of the current proposals are found to be not urgent, or if the assumptions about inner city jobs growth or life-style desirability need to be adjusted. Some options, e.g. a Modbury to Port Adelaide route, may be used to reshape the pattern of transit use rather than to reflect the current hierarchy described in the Functional Hierarchy for South Australia’s Land Transport Network (page 23).

An infrastructure plan is not a services plan

The draft is unashamedly an infrastructure plan. But proposals about infrastructure are not sufficient to obtain long term consensus from the community – people need to see what it will mean in daily life.

For any one person, the most important considerations when choosing to take public transport or the car are:

- How long do I have to wait?
- How long will it take me to get to my destination?
- Will the bus (train, tram) take me where I want to go?
- Will I make the connecting service?
- Will it be safe?

On several of these matters the draft Plan is usually silent. The Plan offers little in the way of targets for the frequency of services, which areas of the city will be covered by particular services, and except for inner city workers, which destinations will be most important for particular cohorts of users. One expects that after 30 years of investment there will be significant improvement against each of the considerations but there is no basis to test whether these improvements can and will be achieved. **Standards of service provision are not specified**, either for the present day baseline, for the situation in the next 5-10 years, in 20 years, or at the conclusion of the 30 years.

Furthermore, the lack of detail is felt in two other areas of concern.

1. Firstly, there is **no clearly defined organising principle** given for the transport plan.

Returning to our theme above on the diversity of transport needs, we refer you to Appendix 3 regarding the “network effect” approach to designing routes for transit services. The virtue of the “network effect” approach is that it provides guiding principles for how one component in a transit network will work with and support other components of that network. The network approach differs from the traditional radial approach (everyone moves in and out of a central point) to a distributed approach (start anywhere, go anywhere with equal ease). People for Public Transport supports the network approach as this caters for a much wider variation of transport needs, and properly planned, will address the questions of frequency of service and multiple destinations.

Notably, that part of the Plan which proposes radial tram routes into the CBD reflects the historic approach by which the CBD was the major destination for transit passengers. However, in the modern city, numerous people do not work in the city, or have any other reason to enter the CBD. Their destinations are cross suburban and/or related to other major centres. That part of the Plan which references cross suburban bus services appears to be partly determined by the network approach. Insofar, as there is mix of both a radial and network approach given within the Plan, we remain unclear of what exactly is to be achieved.

Cross suburban routes are referenced in the draft Plan to the extent that these routes will act to service the high frequency train and O-Bahn services (but possibly not the trams) – and we agree that this is necessary. Yet some travel will still remain beyond the catchment of the train, trams and O-Bahn and it is not evident where other cross-suburban routes might apply. For example, how might one travel from Campbelltown to Belair and still avoid the city, without taking a car?

2. Secondly, **there is no plan for bus services**.

Regardless of the train and tram improvements, and for some time to come, the great majority of transit passengers (perhaps 80%) will have no choice but to use a bus.

At various points in the Plan there are welcome comments regarding the increased use of cross suburban services and that this will be part of an overall and substantive redesign of bus routes. But where are these routes to be? How frequently will these services run; how many transfers will be needed to move from any one part of the city to any other part; where will the various

“superstops” (page 14) be located; which are the train stations that will be connected to the new route structure and so on?

We accept that the design and operation of bus routes is considerably more flexible than the fixed train and tram system. Yet one might expect many persons in Adelaide reading the Plan will look at it in light of the bus system they currently use and know, and not realise that very different options might be possible. These options may markedly improve on waiting times, destinations and service frequency *and* could lead to greater public support for the overall Plan. Persons in regional centres have even less detail upon which to establish their view on how their lives might be supported by public transport. We commend the proposed Regional Passenger Transport Review (page 100).

We understand that work is being undertaken at Departmental level to ascertain where new bus routes will be provided. Nonetheless it is disappointing that this essential part of the transport plan is unavailable for comment and discussion as part of this draft Plan.

Throughout 2013, considerable **public discontent** was evident over perceived or actual public transport failures, including such matters as the lack of services on the Belair train line, or the inadequacy of substitute bus services on the Noarlunga line. In these examples the major infrastructure investment was undone in the public’s mind by a failure at the last step of the process i.e. the actual service on offer. The draft Plan’s failure to understand this last step can easily lead to an array of similar failures of implementation over the next 30 years.

General objectives are not targets

Given that the Plan proposes to spend some \$36 billion over a considerable number of measures, **there is notable absence of data to relate this investment to the expected benefits**. The data may well exist in various departmental records but if not publicly available at the start of the process there is no capacity to publicly test the following matters:

1. The Economic savings to government, business or the community.

As a rule, car dependent cities spend considerably more on transport than cities which rely on transit. For example, if a city which spends 12% of its GDP on transport² can reduce this cost to 8% then the 4% saved becomes available across the entire economy for a range of other investment, consumer spending or improvements in quality of life. Savings of such magnitude may in fact fund the cost of the investment in public transport. As the Plan does not model the savings to be found, it is difficult to assess whether the level of investment is appropriate – or perhaps even too low.

Furthermore, the plan will require financial commitment year-in, year-out over numerous election cycles and many differing governments. At least one of the future governments over

² “Car dependent cities use 10 to 17% of their city wealth just getting around...transit-oriented cities [use] just 5 to 8% of city wealth”. Peter Newman, page 32, in Dissent, Autumn/Winter 2005.

the next 30 years (if not several) will be tempted to forego the necessary investment. On a political level the absence of adequate baseline data, and details of the financial modelling will make it difficult for the community and other advocates to remind governments of the savings to be achieved.

The absence of economic modelling at the level of individual projects does not allow for assessment of which options should be priority projects, and for who the benefit is intended (i.e. industry or community sector).

2. Potential Health benefits are unquantified. The importance of walking and cycling as transport options, and improvements in community health that will arise have been noted elsewhere (e.g. by Jeff Speck in “Walkable City”). The absence of modelling in this regard makes it difficult to assess which modes should attract investment, which investments should be deferred and others be brought forward. For example, should a particular tram or bus route or road project be undertaken before a particular bicycle path? Would it be better to spend a particular amount of \$3 million on one road intersection rather than two bike paths?
3. The Plan notes that transport has environmental impacts (pages 112 and 113) but otherwise says little on how car dependency has potential for severe impact on the ongoing sustainability of economic and social activity. Yet again the absence of data makes it difficult to assess the priority to be given to particular projects, and the achievements to be sought in this area of concern.

Disappointingly, a specific matter that is not addressed in the measures at page 112 is the proposed solar power plant at Port Augusta. This proposal or similar would have the capacity to source electricity for trains and trams, and possibly a future electric bus fleet, from sustainable sources rather than from coal-fired or gas-fired plants.

Overall, the Plan does not specify:

- the economic benefits, health benefits or sustainability improvements to be achieved;
- does not provide the baseline data to test future achievements against projected achievements;
- provides only a vague sense of how evaluation will be undertaken (other than some technical aspects at page 80);
- lacks details about the level of targets. Even less is said about targets than in the 30 Year Plan for Greater Adelaide. This is disappointing given that the City of Adelaide’s Smart Move Transport and Movement Strategy 2012-22 does relate some targets in the 30 Year Plan for Greater Adelaide to the specific measures proposed in the Council document, as well as adding additional targets specific to the CBD.
- Further to this point, the work of the Adelaide City Council clearly articulates the overall objectives of the draft Plan into specific measures for the local area. Regrettably, other Councils are not referenced in regard to similar studies to assist in their implementation of the Plan. We suggest that cross-reference to local plans be clearer and more specific so that residents can see the potential impact for their area.

We recommend that the entirety of the studies and reports that support the Plan be publicly accessible in two forms. Firstly, an appendix is provided with web-links to each document in its

existing technical state. There will be economists, planners, traffic engineers and students in these fields with the expertise and understanding to follow these documents. They will also have an ongoing interest and capacity through their university, industry group or consultancy practices to review and comment upon the studies throughout the coming 30 years AND to interpret this information for use by the general public.

Secondly, some quite telling arguments can be presented simply. For example, in an address to residents of Prospect on the 22nd November 2013, Minister Koutsantonis advised that studies had shown that up to seven times more usage can be made of a tram compared to that of a bus on the same route. We suggest that an appendix of such basic information be included in the Plan (with appropriate web-link reference to the full study). Such an FAQ section will both inform the taxpayers and citizens on whose behalf this is being done, and might avoid needless argument in the community over points of fact.

Land Use determines transport needs

To be exact, land use determines transport need and in turn available transport options determine how land will be used. One way to bring an element of control into this circular situation is to use Transit Oriented Development (TOD). A TOD combines highly detailed local planning zones, very specific building standards and an innovative mix of public and private funds to create mixed use neighbourhoods in which public transport is a necessary contributor to the success of the project. In the Plan, the proposed “activity centres” are to be the local version of these developments.

TODs require a strong regulatory base. In the case of the Bowden redevelopment there is an 84 page Urban Design Guidelines document. The paper specifies building heights, building setbacks, acceptable commercial uses, the mix of high and medium density residential dwelling, all at particular distances from the rail stations and the tram line.³ The Bowden development is on government owned land and regulation, rather than legislation, can set the tone of the project. For non-public land, legislative change is required as seen, for example, in the draft Noarlunga Development Plan Amendment of 2011.

The Plan defers action on legislative changes which will cement TOD objectives until the Expert Panel on Planning Reform reports in late 2014 (page 77). In the interim, it is disappointing that the Plan is not more specific about the probable nature of the legislation that will be needed given that eminently suitable model standards already exist in regard to Bowden. Nor does the Plan provide a clear timeline as to when legislative change has to be in place for each of the “activity centres” projects to proceed, or for that matter what the timeline is for the development of the “activity centres” themselves.

On the latter point, this lack of detail dovetails into the question of when new bus services are to be delivered. The success of the transit part of any TOD is highly reliant on the frequency and

³ The Urban Design Guidelines is another example of the technical documentation that should be placed on the Plan’s website and clearly cross referenced within the Plan itself by form of hyperlink.

quality of bus and train services. As the risk of being repetitive, the standards for these services are not evident in the Plan.

A specific point which needs clarification is the research by COAG which found that “the same job in Central Adelaide would be more productive than one on the city fringes”.⁴ Insofar as the Plan gives considerable emphasis to inner city job growth, this suggests that the Plan lacks confidence in the capacity of certain “activity centres” to attract “productive” job growth. If so, how would the Playford Growth Project and the Salisbury and/or Elizabeth “activity centre” support each other?

Other Matters

- Projects to replace level separation crossings on the rail network with grade separation options are recommended in the Plan (e.g at page 52) for reasons of safety. Grade separation seems a particularly expensive option of achieving safety when better designed gates and signals may achieve as much. Proper priority for buses or trams, or bicyclists could be incorporated as well. It would appear that the main concern in the Plan is to avoid waiting times for motor traffic when possibly it is wiser to spend that money on getting people out of their cars.
- The uninterrupted freight corridor stretching from Gawler to Old Noarlunga reflects an analogous idea originally proposed in the 1960’s MATS Plan. One of the reasons this Plan was rejected by the community at the time was the potential for this corridor to split entire suburbs and communities. The new Plan does not address how this issue will be managed, even at the simplest level of pedestrian and bike access across the corridor.
- As the concern of PPT is passenger transport we have not addressed questions of freight traffic. However, we wish to note two matters:
 - Firstly, measures to reduce freight volumes appear relatively lacking. Much of the investment on freight aims to cater to projected need rather than to moderate the growth in freight.
 - Secondly, the projects that support freight movement may act to free up road and rail capacity for all other users, but only if investment for other users actually occurs at the same pace as that of investment in freight. For example, the realignment of the freight rail corridor through Bolivar and Gillman would reduce the requirement for freight trains to utilise the northern suburbs rail-line. If so, then improvements to passenger rail services should immediately follow and be funded under the same project arrangements.

Our concern is that freight projects should not overtake the quality of life, health impacts and economic benefit of direct concern to the taxpayers funding the Plan.

⁴ Given the weight provided to this study in the draft Plan, the assumption should be retested and validated again partway through the Plan. The study upon which it is based needs to be cross referenced.

- Reference is made to the expected financial contribution of the private sector, with particular regard to the mining sector’s engagement in ports, rail and road (page 91). We note that Transit Oriented Development undertaken overseas also incorporates mechanisms for the sourcing of private investment. Insofar as legislative and regulatory arrangements may be in place for the mining sector’s investments, we would hope that such arrangements also become available for TOD projects.

Summary

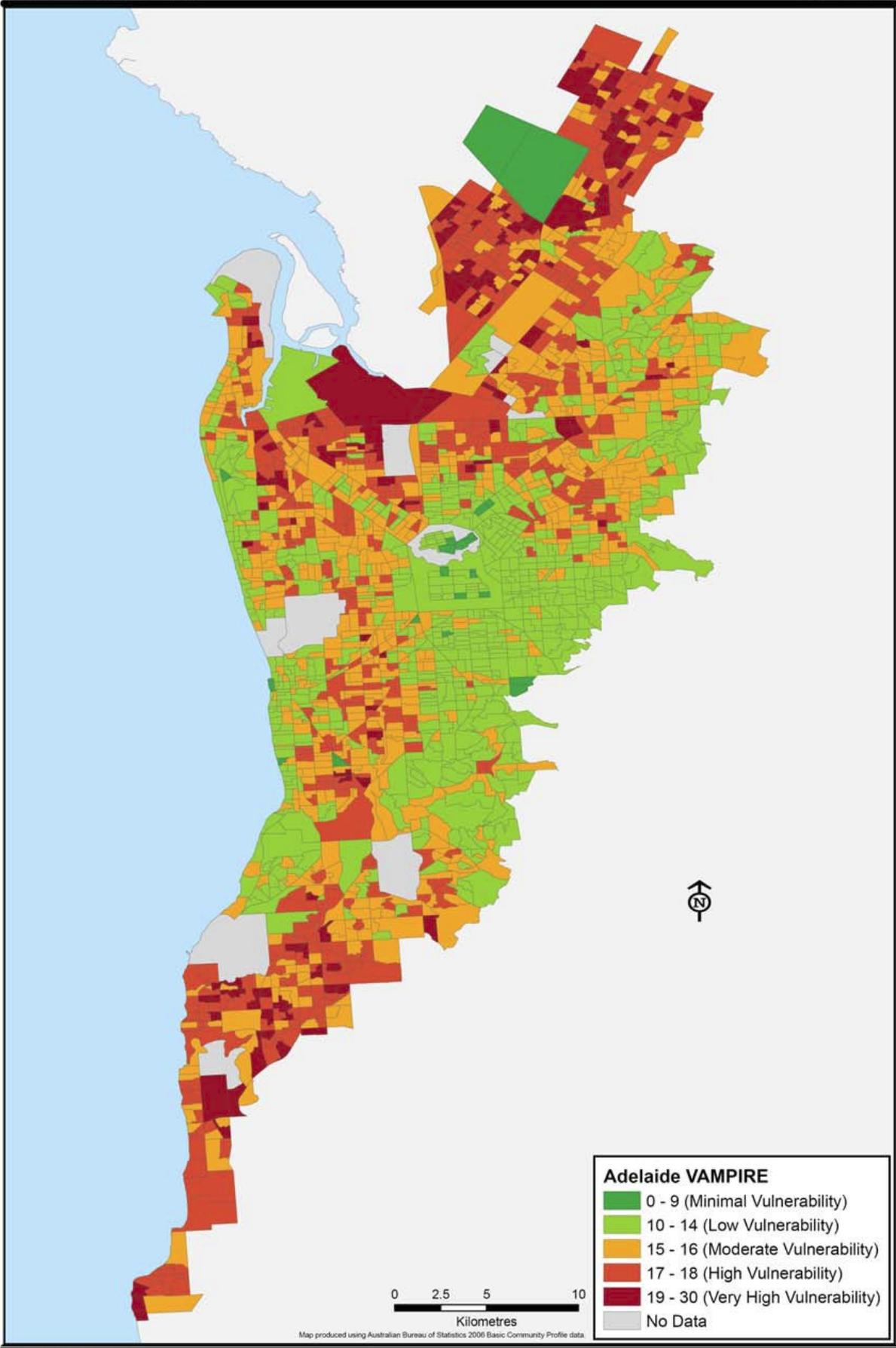
The draft Plan provides an excellent start to addressing many of the transport needs in Adelaide, and in part, the rest of the State. Our concerns are that:

- The Plan is built on assumptions about the probability and desirability of the inner suburbs as the locus of job growth within metropolitan Adelaide. To us, these assumptions result in relative neglect of transit needs in other parts of metropolitan Adelaide. Regional needs are barely addressed.
- It is not evident what the targeted reduction in car dependency might be over the 30 year period. Nonetheless, the risk is that the level of car dependency will remain high, particularly in the outer suburbs.
- The Plan lacks detail on non-work related transit needs and how they will be addressed.
- The absence of data on expected benefits makes it difficult to ascertain how the Plan can be evaluated, if not in fact on how priority for individual projects was ascertained.
- There is a substantial focus on the infrastructure to be delivered rather than on the service to be provided.
- It is not automatically evident that the exact mix of bus and tram projects is the best option to cater for the entire range of transit needs.
- The Plan proposes, in detail, a radial approach to infrastructure in the inner city. It then suggests, in broader terms, what may be a network approach to service delivery elsewhere in the metropolitan area. The lack of specific proposals about the bus system does not allow an assessment as to how the two approaches will support each other.
- Land and transport planning cannot be separate from each other. Substantial capital investment in land use changes is part and parcel of a complete transport plan, hence the proposed “activity centres”. These matters are not addressed adequately within this draft Plan.
- Although the State Government has existing examples of how transit oriented development might lead to legislation, there is minimal discussion of how and when this might occur.

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Vulnerability Assessment for Mortgage, Petrol and Inflation Risks and Expenditure
2006 Census Data Analysis of Adelaide

Version Date: 16 June 2008



Why we include this article? The Draft Plan is shaped around an agenda of often highly expensive road, rail, tram, ports and airport developments. It presents as a construction industry manifesto. Yet what makes for a desirable outcome for how people live, not just how they work, requires a very different scale of development. It is our contention that this (gendered or otherwise) neglect in the Draft Plan fails to relate the possible achievements of the Plan to the daily needs of the voting public, and over 30 years may well threaten the implementation of the Plan.

How to Design a City for Women

by Clare Foran, Sep 16, 2013⁵

<http://www.theatlanticcities.com/commute/2013/09/how-design-city-women/6739/>

In 1999, officials in Vienna, Austria, asked residents of the city's ninth district how often and why they used public transportation. "Most of the men filled out the questionnaire in less than five minutes," says Ursula Bauer, one of the city administrators tasked with carrying out the survey. "But the women couldn't stop writing."

The majority of men reported using either a car or public transit twice a day -- to go to work in the morning and come home at night. Women, on the other hand, used the city's network of sidewalks, bus routes, subway lines and streetcars more frequently and for a myriad reasons.

"The women had a much more varied pattern of movement," Bauer recalls. "They were writing things like, 'I take my kids to the doctor some mornings, then bring them to school before I go to work. Later, I help my mother buy groceries and bring my kids home on the metro.'"

Women used public transit more often and made more trips on foot than men. They were also more likely to split their time between work and family commitments like taking care of children and elderly parents. Recognizing this, city planners drafted a plan to improve pedestrian mobility and access to public transit.

Additional lighting was added to make walking at night safer for women. Sidewalks were widened so pedestrians could navigate narrow streets. And a massive staircase with a ramp running through the middle was installed near a major intersection to make crossing easier for people with strollers and individuals using a walker or a wheelchair.

The decision to look at how men and women used public transit wasn't a shot in the dark. It was part of a project aimed at taking gender into account in public policy. In Vienna, this is called gender mainstreaming.

Gender mainstreaming has been in place in the Austrian capital since the early 1990s. In practice, this means city administrators create laws, rules and regulations that benefit men and women

⁵ For brevity, this attachment excludes some images found on the website article. For a more technical look consider DI Elizabeth Irschik, Fair Shared City: Gender Mainstreaming in Planning Strategy: Vienna: Austria available at <http://www.fomento.es/NR/rdonlyres/04F77AA5-7E43-48CD-9712-327B2A776626/95901/6.pdf>

equally. The goal is to provide equal access to city resources. And so far, officials say it's working.

Vienna has adopted gender mainstreaming in a number of areas of city administration, including education and health care policy. But nowhere has it had more of an impact than on the field of urban planning. More than sixty pilot projects have been carried out to date. As the size and scale of these projects increase, gender mainstreaming has become a force that is literally reshaping the city.

Urban planners have been melding mainstreaming and city design in Vienna for over two decades and they've gotten it down to something of a science. Before a project gets underway, data is collected to determine how different groups of people use public space.

"There are so many questions that need to be asked," Eva Kail tells me. Kail has been instrumental in bringing gender mainstreaming to Vienna and currently works as a gender expert in the city's Urban Planning Group. "You need to know who is using the space, how many people, and what are their aims. Once you've analyzed the patterns of use of public space, you start to define the needs and interests of the people using it," she explains. "Then planning can be used to meet these needs."

Mainstreaming got off the ground in Vienna in 1991 when Kail and a group of city planners organized a photography exhibit titled "Who Owns Public Space -- Women's Everyday Life in the City." It depicted the daily routines of a diverse group of women as they went about their lives in the Austrian capital. Each woman tracked a different route through the city. But the images made clear that safety and ease of movement were a priority for all of them.

It sparked a media firestorm. "Newspapers, television and radio were all covering it and 4,000 people visited," Kail says. "At the time it was something completely new. But politicians quickly realized it was something people were interested in and they decided to support it."

Soon after, the city green lit a series of mainstreaming pilot projects. One of the first to be carried out was an apartment complex designed for and by women in the city's 21st district. In 1993, the city held a design competition for the project, which was given the name Frauen-Werk-Stadt or Women-Work-City.

The idea was to create housing that would make life easier for women. But what exactly did that mean? Time use surveys compiled by Statistik Austria, the Austrian national statistics office, showed that women spent more time per day on household chores and childcare than men. Women-Work-City was built with this in mind. It consists of a series of apartment buildings surrounded by courtyards. Circular, grassy areas dot the courtyards, allowing parents and children to spend time outside without having to go far from home. The complex has an on-site kindergarten, pharmacy and doctor's office. It also stands in close proximity to public transit to make running errands and getting to school and work easier.

"What made the project unique was that we worked to define the needs of the people using the space first and then looked for technical solutions," Kail says. "Very often it is the opposite, where technical or aesthetic solutions determine the end result."

Following completion of Women-Work-City, city officials turned their attention to Vienna's network of public parks and commissioned a study to see how men and women use park space. What they found was surprising.

The study, which took place from 1996 to 1997, showed that after the age of nine, the number of girls in public parks dropped off dramatically, while the number of boys held steady. Researchers found that girls were less assertive than boys. If boys and girls would up in competition for park space, the boys were more likely to win out.

City planners wanted to see if they could reverse this trend by changing the parks themselves. In 1999, the city began a redesign of two parks in Vienna's fifth district. Footpaths were added to make the parks more accessible and volleyball and badminton courts were installed to allow for a wider variety of activities. Landscaping was also used to subdivide large, open areas into semi-enclosed pockets of park space. Almost immediately, city officials noticed a change. Different groups of people -- girls and boys -- began to use the parks without any one group overrunning the other.

People have started to pay attention. In 2008, the United Nations Human Settlements Programme included Vienna's city planning strategy in its registry of best practices in improving the living environment. Vienna's park redesign project, along with a program to create a gender mainstreaming pilot district, has even been nominated for the United Nations Public Service Award, a badge of honor recognizing efforts to improve public administration.

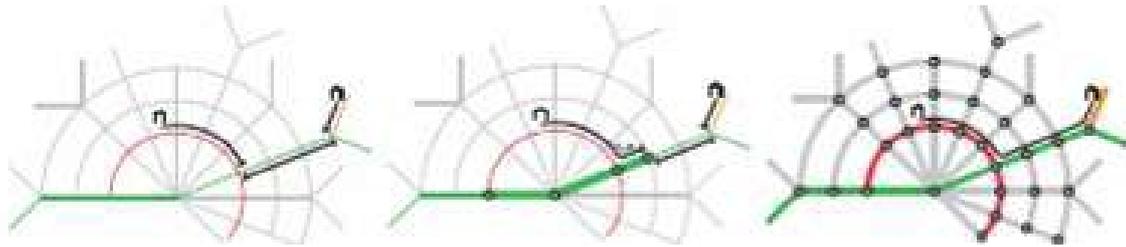
This change hasn't come without criticism, however.

"When we came up with the idea for the exhibit "Who Owns Public Space" a lot of our colleagues thought it was ridiculous," Kail says. "Everyone we worked with had to give feedback. People said things like, "does this mean we should paint the streets pink?"

"Gender can be an emotional issue," Bauer adds. "When you tell people that up until now they haven't taken the women's perspective into account they feel attacked. We still have people asking, 'Is this really necessary?'"

Planners also run the risk of reinforcing stereotypes in attempting to characterize how men and women use city space. To distance themselves from this, city officials have begun to shy away from the term gender mainstreaming, opting instead for the label 'Fair Shared City.'

Whatever its limitations, there's no question that mainstreaming has left an indelible mark on the Austrian capital. It began as a way to look at how men and women use city space differently. Today, however, mainstreaming has evolved into a much broader concept. It's become a way of changing the structure and fabric of the city so that different groups of people can coexist. "For me, it's a political approach to planning," Kail says. "It's about bringing people into spaces where they didn't exist before or felt they had no right to exist."



**An unlinked collection of low frequency routes
(a non-network)**

Some high-frequency services

The full network effect

An unlinked collection of low frequency routes (a non-network)

The area you can reach by a simple journey is restricted to walking distance from your closest line. Users need to have detailed information about timetables. Transferring is difficult and crossing points have little value.

Some high-frequency services

Good service along high frequency lines makes some transfers more attractive, but only in the direction towards the high-frequency service. Increased frequencies on the best sections will do little to improve general conditions.

The full network effect

Many lines operating at high frequencies, or with coordinated timetables, create a network.

The Network Effect in Adelaide

The historic degree of radial services evident in the metropolitan area is the antithesis of the network approach. Whilst recent years have seen more cross-suburban services, the degree of integration and level of services in the Adelaide train, tram and bus system rarely, if ever, achieves a network approach. As a result, the system cannot achieve its potential to either capture patronage or meet economic efficiency.

We argue above that all bus services should operate as 10 minute services. The network approach will fail if frequency of service provisions is limited to 30 minute or hourly services. Without a parallel adjustment in where services operate, there is the perverse potential to increase financial loss.

In the idealised example below – Squaresville – we see a doubling of bus services from an initial low frequency situation. In a properly designed system we see public transport patronage increase from 3 per cent of all journeys to 20 per cent of all journeys. In a poorly designed system, a doubling of services sees costs increase more than the patronage!

Squaresville – the ideal case

(adapted from Network Design for Public Transport Success – Theory and Examples by Gustav Nielsen and Truls Lange, Civitas group of consultants, Oslo, Norway)

As shown in figure 1, the hypothetical city of “Squaresville” has a grid-iron street pattern. The streets are well suited for a bus service since they are 800 meters apart. “Squaresville” is a homogeneous city with a travel demand that is entirely dispersed. Assume that the area around each of the city’s street crossings generates one journey to every other street crossing; 9900 trips per day in total. For the whole of “Squaresville”, the ten bus lines can only serve 900 trips in the city, which is less than 10 percent of the total trips of 9900.

Assume that the public transport service presently attracts one-third of the journeys it can theoretically serve. This gives 300 trips per day by public transport, which is a modal share across the whole city of only 3 percent.

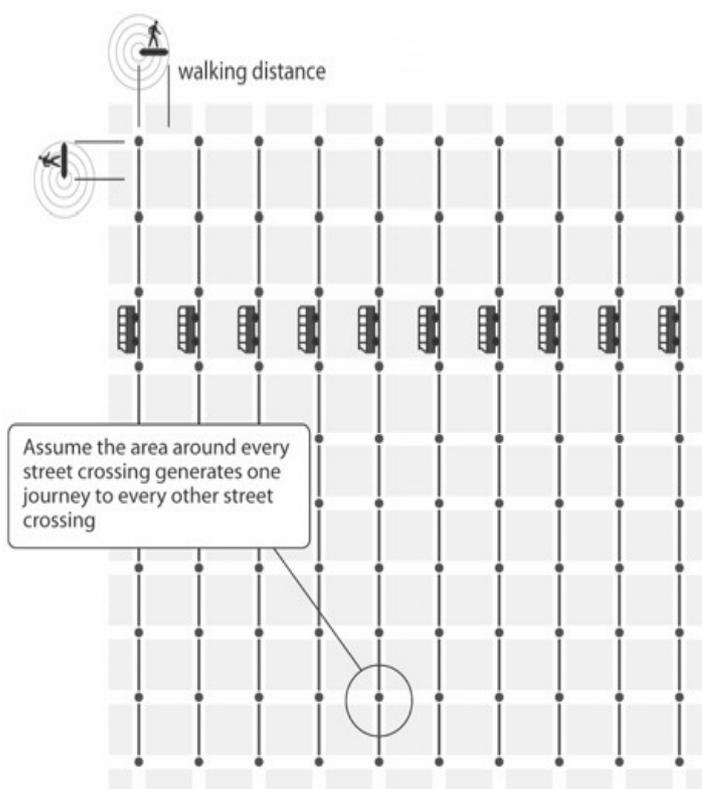


Figure 1: “Squaresville” with ten bus lines running north–south

Services are doubled

Imagine that services on the existing bus lines are doubled in order to induce more people in “Squaresville” to use public transport. According to traditional transport demand modelling the elasticity of demand might be assumed to be some 0.5. This means that a 100 percent increase in service will produce a 50 percent increase in demand. The result will be 450 public transport trips per day and a modal share of 4.5 percent. Since the operational costs are likely to increase by more than 50 percent, the cost-recovery through fares is likely to fall.

Imagine that the extra operating resources instead were used to run ten new bus lines in the east-west direction, as shown in figure 2. This would create a grid network of twenty lines. The number of trips that are directly served would double to 1800; the 900 initial north-south journeys and the 900 new east-west journeys that can be made without transferring between lines.

But if passengers are willing to transfer, then all 9900 trips between all blocks can be served by this network; 1800 directly and 8100 by transferring. Assume that the modal share for journeys involving a transfer is half of that for direct journeys, i.e. one-sixth of these trips that can be attracted to public transport. This gives a total number of 1950 public transport trips per day ($1800/3 + 8100/6$). The modal share has increased dramatically from 3 to 20 percent.

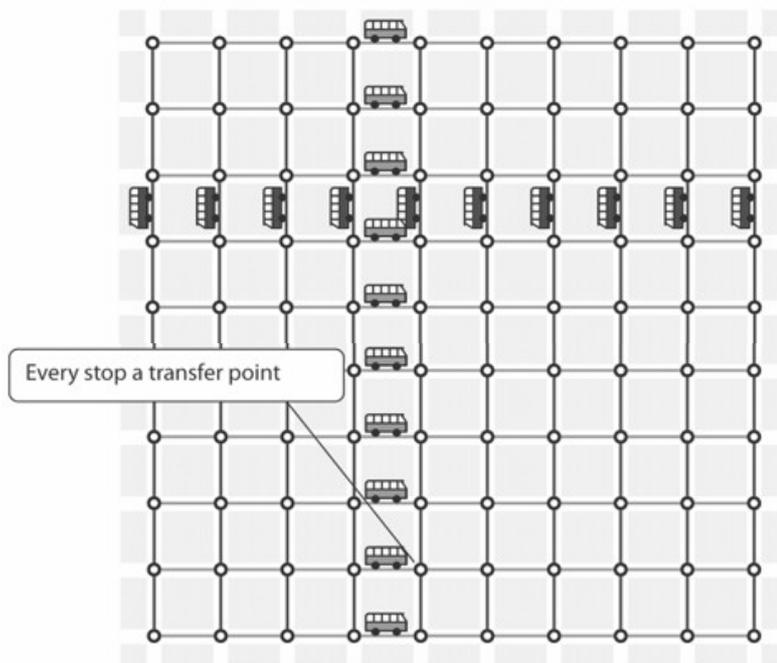


Figure 2: “Squaresville” with twenty bus lines running north–south and east–west

This gives a theoretical elasticity of demand that is 5.5, rather than the traditional figure of 0.5. Increased revenue from the fares should more than cover the extra costs of operation and vehicle occupation would rise. We will by no means claim that this ten-fold increase in demand is a figure to be found in the real world. Nevertheless, it illustrates the significance of the network effect for public transport demand; if at least some of the theoretical potential is exploitable in a real situation.