Transport Priorities – Back to Basics

Transport is a service industry and requires a systems-based approach to address systemic problems within it. There no simple single fix solutions, however there are levers that can be used to change the transport system where a small intervention in one area can result in significant change in outcomes for the system as a whole. These levers must be given top priority.

One of the most important levers is a plan and the mindset that drives it. It is argued this must be progressed within the framework of a Mobility Plan which identifies future transport pathways with transport options designed to meet a wide range of people's travel needs. This must be supported by incentives to encourage people and business to make the transition to a zero-emission economy and disincentives to continue business as usual. It must be a service-based plan that rations travel to ensure the carbon budget available for transport is not exceeded, complete with carrots and sticks to make it work and deliver measurable outcomes and meet specified targets.

Establishing such a plan must be a high priority, but in the meantime there are actions that can be carried out immediately that would be logical inclusions within such a framework. These must be given top priority – not only to secure better transport outcomes in the social and economic sense but to address the environmental imperative to achieve rapid reductions in transport emissions and meet the target reduction of 75% by 2030 specified by climate scientists at our forum in 2020.

These measures, in broad terms include the following
1. Immediate implementation of emission standards and controls for all fossil fuel powered vehicles
2. Create a safe environment for cyclists on all streets and roads in Melbourne's road network
3. Provide priority on roads for all road based public transport ie buses and trams.

Each of the above will be transformative and require a plan with many actions to implement it but the aims are sufficiently specific to enable them to be carried out with a sharp focus in a way that delivers measurable outcomes. Justification for these priorities is outlined below.

Emission standards and controls

The vast majority of Melbourne's transport task is carried out on the roads. Rapid reductions can be achieved simply by improving emission standards for vehicles – by people driving more fuel-efficient vehicles with cleaner fuels. This would provide a mechanism for retiring older vehicles and replacement with more fuel-efficient ones. This is not a small task and requires careful planning but it can be achieved relatively quickly if governments at state and federal level mandate it. This has been the subject of earlier reports for several years. It needs no further discussion other than simply act now.

Safe Roads for Cyclists

Active transport (walking and cycling) is the only travel mode that generates zero or close to zero emissions. If 41 % of all trips to work and study can be achieved by bike in Copenhagen and 62 % of

Copenhageners choose to bike to work and study there is no good reason why a major shift to cycling cannot be achieved in Melbourne. Our city is largely flat and the climate benign.

Melbourne should aim to be the cycling capital in the southern hemisphere. Half of weekday trips made in Melbourne are less than 4.2 km and e-bikes can extend this range and attractiveness as a transport option for a wider range of people, including older and less physically active people. The attractiveness of e-bikes can be enhanced by raising the speed supported by battery power which is currently limited to 25kph. This is based on the original European standard which has since been updated. It is recommended that the standard adopted by the US, which allows power for speeds up to 20mph (32kph) be adopted here. Travel and transport opportunities provided by the bike, and scooters are greatly underestimated. These are clearly demonstrated in other countries, not just poorer countries such as Vietnam but also in more affluent countries where cycling in its different forms can carry passengers, parcels and other goods and equipment. This potential is starting to be realised here in Melbourne.

The major barrier for cycling is safety. We have known for a long time if we want people to cycle we have to change our approach towards urban infrastructure. Cyclists will only cycle [in large numbers] when they feel physically safe and can travel relatively quickly, which means they need to be physically separated from cars in speed zones that exceed 30kph.

The business case for cycling was included in the ministerial submission based on our 2019 forum and repeated briefly below.

- One kilometer driven by car costs society about 17 cents (15 euro cents), whereas society _gains_ 18 cents (16 euro cents) for each kilometer cycled. That's because of factors like the health benefits of cycling and the avoided ill-effects of cars.

As well as costs and benefits to society, there are also personal costs and benefits, travel time, the impact of noise and pollution on quality of life. References are provided in the ministerial submission included in the 2019 forum proceedings. There is no reason why a major shift to cycling cannot proceed immediately and implemented relatively quickly. Our roads are wide by world standards and there is plenty of room to reallocate space for cycling. Safety could also be improved on most of our roads by simply lowering speed limits. 30kph speed limits have been imposed in a growing number of European cities, including Paris to encourage more people to cycle and travel by public transport instead of travelling by car.

Priority on roads for Buses and Trams

This measure would provide the foundation for a high-quality public transport network for the whole of Melbourne.

Melbourne's public transport system provides a service which enables people to travel around Melbourne (and beyond). It operates in a competitive environment in which the principal competitor is the motor car. Network components; buses, trams, trains and taxis complement each other and the outcome is greater than the sum of the individual parts. Any weaknesses in one of the components or breakdown in connectivity between them is also reflected in the system as a whole.

Public transport's ability to compete with the car across Metropolitan Melbourne for local or cross-town trips (ref Appendix A below), particularly in middle and outer suburbs is limited by the

coarseness of the bus network and its poor connectivity with the other public transport modes. For most Melburnians buses are their only readily accessible form of public transport.

Despite these limitations, it remains an important service, particularly for socially and economically disadvantaged and must compete with the car for as many trips as possible as efficiently and effectively as possible. There is also an environmental imperative for it to become more efficient and play a more important role in reducing emissions than it does now. To achieve this, priority on the roads for buses and trams will be essential. The rationale requires further explanation and is provided as follows.

The extent to which public transport is able to compete with the motor car for patronage will depend to a large extent on coverage and journey times. There are other factors but these two are critical. Public transport can achieve better performance by providing a network in which transfers are possible, not just for each mode but between all modes ie buses, trains and trams. It is the ability to make connections in a timetable sense as well as a physical sense that is most critical. Without this coverage is substantially reduced. This is demonstrated by the table below.

Direct 'transfer free' travel on a bus/train/tram will cover only 0.3-0.5% of the city

Mode	Av Stations/ Stops per Route -1	Walk Catchment Diameter (m)	Total Area Coverage (Km²)	% Metro Melbourne
Train	14	800	28	0.3%
Tram	29	400	46	0.5%
Bus	29	400	46	0.5%

Note. Metropolitan Melbourne covers 8,806 Km²

If transfers are possible, all stops/stations are accessible i.e. just about all of Melbourne

Mode	No Stops/ Stations	Walk Catchment Diameter (m)	Total Area Coverage (Km²)	% Metro Melbourne
Train	204	800	410	4.7%
Tram	1,787	400	898	10.2%
Bus	16,339	400	8,209	93.2%
		TOTAL	9,517	~100%

Note. Metropolitan Melbourne covers 8,806 Km²

To achieve a high standard of integration requires all modes run quickly and reliably to time – all the time, to ensure connections can be guaranteed, particularly in middle and outer suburbs where service frequency is low. This should be possible for trains on its own permanent way reservation but trams and buses share the road with other traffic in an environment they cannot control. This environment can and must be changed by providing priority on roads for buses and trams. Implementation of a system for providing priority for trams and buses was the key for the redevelopment of the Zurich public transport system which enabled it to become the model of excellence and world best practice for public transport.

The need for priority on the roads has been recognized for many years, and at least two programs have been established to progress it but only for trams (The Think Tram Project) and even for trams it remains unfinished and requires a higher standard of implementation to make it work properly. Priority for buses is largely non existent despite the critical importance buses play providing network coverage. For most of Melbourne, buses are the only form of public transport and provide the "glue" that ties the entire network together. Without buses public transport coverage is tiny as demonstrated by the table above. Without priority on the roads, network coverage in the timetable sense is unacceptably poor or fragmented.

Whilst priority on roads will require a number of measures to make it work, the most important element is the traffic signaling that exists throughout the road network. This is generally in excellent condition and only requires systematic adjustment with minor modification to provide the basis for bus and tram priority on the roads. This work could be carried out quickly at minimal cost.

Network coverage has been enhanced by enabling the carriage of bikes on trains. This simple measure (which was implemented during the mid 1990's at no cost), utilises spare capacity on trains which invariably exists, particularly on journeys through middle and outer suburbs and is probably the only measure that has been implemented in recent decades that enables a person to save the use of a car. This service has become very popular and is used extensively for a wide range of suburban and regional trips by a broad cross-section of the community. It can be enhanced further by allowing the carriage of bikes on buses. Space on trams is more limited but the carriage of folding bikes, which take up less room is feasible and may be encouraged.

Summary

Transport priorities must be dominated by the environmental imperative to reduce greenhouse emissions and meet reduction targets. This requires fundamental system change but this will not be achieved using a conventional transport plan as prescribed under the Transport Integration Act. It requires a plan that focuses on mobility and rations transport in a way that ensures carbon budget and target milestones are met. Developing such a plan must be top priority. The plan must incorporate levers which promote fundamental change in the functioning of the system itself and its outputs. All actions identified in this paper achieve this and whilst they are an important part of a mobility plan they do not need to wait for the completion of the plan to be implemented - they can proceed immediately and deliver significant emission reductions quickly at minimal cost.

The barrier to change in each case is the mindset and political will to carry them out. These tasks are not difficult but the environment in which they must be implemented is compromised by current thinking that expects living standards to continue to rise and rejects the need to give up business as usual and the material comforts it provides, particularly for personal travel. But good times will not last much longer and most people have little choice but to adapt as social and economic conditions decline, increasingly driven by a range of environmental factors and limits to growth. This is a political challenge but must be addressed to enable the community to make the transition to a new

zero emission world as quickly as possible. The longer this is delayed the more painful and disruptive this process will be.

Roger Taylor: Chair Transport for Melbourne, March 2022
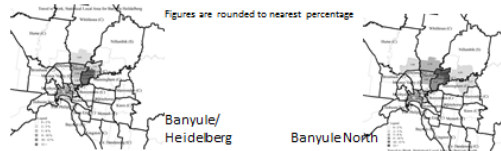
Appendix A – journeys to work

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
WEST: Hobson's Bay/Altona	27%	22%	21% (across Yarra)	30%
WEST: Wyndham North	30%	18%	18% (across Yarra)	33%
EAST: Manningham East	17%	31%	11%	42%
EAST: Casey and Cranbourne	22%	38%	3%	38%

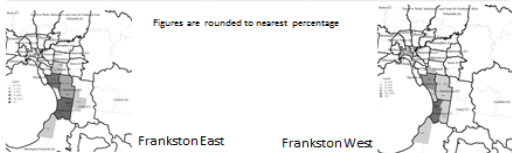Figures are rounded to nearest percentage

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
Banyule/ Heidelberg	23.3	14.6	24.5	37.6
Banyule North	15.1	30.9	15.4	38.5

Figures are rounded to nearest percentage
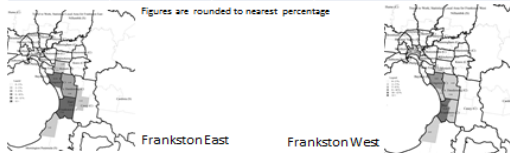

Banyule/ Heidelberg   Banyule North

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
Frankston East	30.3	20.4	2.5	46.8
Frankston West	32.4	25.0	5.6	37.0

Figures are rounded to nearest percentage

Frankston East   Frankston West

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
Frankston East	30.3	20.4	2.5	46.8
Frankston West				

Figures are rounded to nearest percentage

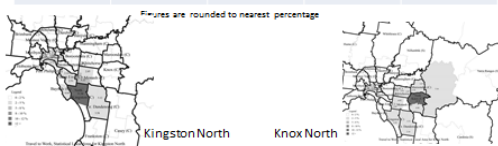Frankston East   Frankston West

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
Kingston North	31.4	24.1	13.8	30.7
Knox North	27.3	37.7	6.9	28.0

Figures are rounded to nearest percentage

Kingston North   Knox North

Where people live, and where they work (Australian Bureau of Statistics 2006)

Locality (statistical local area)	Work in the locality	Work in neighbouring localities	Work in inner Melbourne	Work everywhere else around metropolitan Melbourne
Maroondah Croydon	28.3	19.2	8.3	44.2
Manningham West	19.8	9.4	22.7	48.2

Figures are rounded to nearest percentage

Maroondah Croydon   Manningham West