Doing More with Less - The Need to Change the Narrative

A Position Paper

By Roger Taylor Chair Transport for Melbourne

April 2024

Executive Summary

This paper has been prepared as background notes for the TfM annual forum to be held in 2024. The principal concerns of this forum are firstly that the continual focus on population and economic growth is putting the city of Melbourne on a trajectory that is increasingly unsustainable, and secondly that vast sums of money spent on major infrastructure projects is not addressing problems that have persisted for many years - in fact is making them worse and there is a need for fundamental and radical change in policy. This is occurring at a time of increasing financial hardship, which is forcing government to cut spending and review priorities. This presents an opportunity for advocacy groups to change their focus and create a new narrative and a plan to support it, one which identifies opportunities to improve transport outcomes by doing more with less.

It is argued that this must not be achieved by simply promoting an ad-hoc list of high value low cost projects. These must be part of a well designed plan that reflects social, economic and environmental challenges facing the city/state of Victoria. It also demands a radical change in thinking about many of the key issues and ways in which these can be addressed and most importantly apply valuable lessons learnt from other cities, many of which are now accepted as models of international best practice: cities which have been confronted with similar problems and addressed them with considerably better outcomes than has been achieved in Melbourne.
Finally it must be clear by now that the need to act is becoming increasingly urgent, and that this requires system change – that incremental change promoted in the past is no longer sufficient.

Introduction

Successive governments at both state and federal levels have used infrastructure as a way of creating jobs. This has been described as “nation building” and resulted in massive infrastructure projects, which in the transport sector have consistently failed to address systemic problems that have persisted for several decades and continue to get worse. Tightening economic conditions are now forcing the State government to make significant cuts in budget spending, review priorities and do more with less. This has created an opportunity for advocacy groups to create a new narrative and use it to encourage government to change its focus. The questions that follow are firstly what should this new narrative be, secondly how could it be “sold”, thirdly what would be the plan to support it and finally the strategy to implement it? This is a new agenda for a government that has no plan of any substance for the City of Melbourne let alone the state of Victoria or the transport system itself which services both ie Melbourne and Victoria, so the task of identifying key issues and critical elements of the “Plan” must be taken up by the community.

It should be clear that this “Plan” can no longer be based on business as usual. It must reflect the challenges of a rapidly changing world driven by environmental pressures as well as the immediate financial constraints facing government today. Key goals in this respect must be a reduction in the

environmental footprint. That is achieved by reducing greenhouse emissions, waste and pollution, reduced consumption of the planet's natural resources generally and stopping the destruction of the biosphere. This must be reflected in all transport activities and supporting infrastructure. The imperative will be to travel and transport goods and services less, less often as well as more efficiently in a way that places minimal demand on supporting infrastructure and to achieve this effectively, efficiently and as quickly as possible.

Whilst these imperatives may appear obvious, accepting them will require a fundamental change in mindset on the part of governments that continue to pursue economic growth and population growth as a means of raising living standards. This fundamental misconception must change. Limits to growth was the subject of the first report to the "Club of Rome" in 1972. Subsequent reviews have confirmed the validity of this report and the need to overlay it with environmental trends (linked to global warming etc). This must be reflected in city and state planning projections, and planning responses which are quantified with measurable goals and outcomes for new plans for Melbourne, Victoria and a transport model to service it.

At this stage there does not appear to be a consensus on any of the above, but it is clear that interventions must now focus away from infrastructure and monumental "nation building" to broader social, economic and environmental goals recognising that priorities for transport service activities be progressed with clearly defined objectives and implemented in the most cost effective and affordable way.

Smart cities have demonstrated that achieving these goals can be progressed at relatively low cost using a wide range of actions. But doing more with less must not become an ad-hoc list of low-cost high value projects. Priority must be based on the extent to which these contribute to the "Plan". In the context of a transport plan, this means optimising transport outcomes for the transport system as a whole ie all modes of travel and transport in a way that contributes to the social, economic and environmental goals of the city (or state). This must be accompanied by an understanding that the only travel activities that come close to "zero" emissions are active transport ie walking and cycling. **No other transport services, public or private for freight or personal travel come close and never will**.

Smart cities understand this and are increasingly using active transport to underpin their transport and city plans – particularly for short or local trips whilst at the same time ensuring public transport services are operated as efficiently and cost effectively as possible with high levels of patronage to minimise their environmental impact.

Future challenges and goals

As the government ponders its increasingly difficult financial situation, it is appropriate it reviews its goals, the extent to which current policies have been successful and what needs to change.

Firstly with respect to goals, these continue to be largely based on a continuation of business as usual. In other words, continuation of population and economic growth, and in the transport portfolio spending on mega infrastructure projects for nation building and job creation. This is at a time when warnings of climate change, rapidly increasing global temperatures and resource depletion grow louder every day and their impact on liveability and economic sustainability becomes increasingly challenging. This is a new world we need to plan for and set realistic goals which enable society to adapt. These goals must anticipate numerous challenges, some of these include

- Social and economic impact of extreme weather
- Tipping points and sudden collapse of environmental systems

- Social cohesion erosion
- Livelihood crises
- Infectious diseases
- Natural resource crises
- Debt crises
- Geoeconomic confrontation and wars.

All of the above have been experienced in the past but the severity and scale is increasing together with the likelihood of a cascade effect in which these events occur together and become mutually reinforcing. This is a rapidly changing world in which the financial risk of any investment increases and economic life shortened. The implications are profound, particularly for investment in projects which have a long physical life, such as transport infrastructure which lacks the flexibility to adapt to changing situations (motorways, rail lines). Addressing this demands very different thinking to that which exists today and a focus on fixing today's problems today or as quickly as possible, at least risk and least cost. In other words smart well targeted policies that address new goals by doing more with less.

It is argued that this must not be achieved by simply promoting an ad-hoc list of high value low cost projects. These must be part of a well designed plan that reflects social, economic and environmental challenges facing the city/state of Victoria. It also demands a radical change in thinking about many of the key issues and ways in which these can be addressed. Finally it must be clear by now that the need to act is becoming increasingly urgent, and that this requires system change – that incremental change promoted in the past is no longer sufficient.
This does not mean reinventing the "wheel". Most cities have been confronted with similar transport and city planning challenges to the ones faced here in Melbourne but with greater success. Some of these have become models of best practice and there is an opportunity to apply lessons learnt here. The starting point is recognising some of the essential understandings that must underpin these goals. These include

- Limits to growth

Limits to growth was the subject of the first report to the "Club of Rome" in 1972. Subsequent reviews have confirmed the validity of this report and the need to overlay it with environmental trends (linked to global warming etc). This must be reflected in city and state planning projections, and planning responses which are quantified with measurable goals and outcomes for new plans for Melbourne, Victoria and a transport model to service it.

- Reduction of the environmental footprint.

This is achieved by reducing greenhouse emissions, waste and pollution, reduced consumption of the planet's natural resources generally and stopping the destruction of the biosphere. This must be reflected in all transport activities and supporting infrastructure. The imperative will be to travel and transport goods and services less, less often as well as more efficiently in a way that places minimal demand on supporting infrastructure and to achieve this effectively, efficiently and as quickly as possible.

- An understanding that the only travel activities that come close to "zero" emissions are active transport ie walking and cycling.

The calculation of emissions for different modes of travel and transport must include emissions generated from all activities from “cradle to grave “, ie for mining and processing of materials, manufacture, operations, disposal and supporting infrastructure (provision, maintenance and renewal etc) and service activities. On this basis no transport services, public or private for freight/commercial or personal travel with the exception of active transport comes close to achieving zero emissions and never will. Claims that this is possible are simply “greenwash”.

This thinking must not be confined to transport: it must be applied to the whole economy.
The task of weening an economy off carbon is huge if not impossible. The best that can be achieved is to reduce emissions as quickly as possible and restore carbon sinks that had constrained climate variations within a narrow band for thousands of years ie during the Holocene. This is no longer possible. The dimensions and scale of this challenge is such that this goal will not be realised reinforced by lack of action and political will despite constant warnings over many decades. We have now left the Holocene, will never get it back and entered a new age described as the Anthropocene. Humanity must now face the reality that it has no choice but to adapt to an increasingly inhospitable world, Hot House Earth, which will support fewer and fewer people and learn to live with the consequences.

It is still possible to delay this process and apply lessons from cities that are moving in this direction. Some of these are outlined below.

Integrated transport and land use planning

City Planning and Land Use
The city, its size, scale, layout, social, economic and political structures and activities ultimately determine the nature and scale of services required to service it including the demand for travel and transport. The continuing pattern of unplanned and unregulated suburban sprawl that has persisted for many years and continues today increases the cost of all of the above and puts the city and the state more generally on a trajectory that is increasingly unsustainable. Cities can be planned in a way that reduces the demand and cost of these services and meet environmental goals but this requires government intervention, leadership and a plan.

The need for an integrated land use and transport plan has been accepted for a long time and is legislated under the Transport Integration Act but it is not working and there is no plan worthy of that name today. Whilst change in the city landscape is relatively slow there are mechanisms that can be implemented that can push planning outcomes in the right direction. Valuable lessons can be learnt from cities that have become recognised as models of international best practice, some of which are outlined below.

City Planning and Land Use - Some Lessons from International best practice

- **Importance of creating a liveable city environment.**

In Vienna the quality of urban design and provision of open space and facilities which enables people to live full lives within their own neighbourhood is a top priority. This reduces the need for people to travel outside their neighbourhoods and creates greater opportunities for walking and cycling within them. This is reinforced by investment in affordable public housing (it has a target of 30%) which enables more people to live where they work, reinforced by a policy that rejects suburbanisation and city sprawl.

Singapore has become famous for its garden city, the result of a vision by Prime Minister Lee Kuan Yew in 1967 to transform Singapore into a city with abundant lush greenery and a clean environment in order to make life more pleasant for the people.
The creation of a livable and sustainable city also underpinned the revival of Curitiba in Brazil, to the extent that it became the "gold standard in sustainable urban planning: described variously as the "green capital", the "greenest city on Earth", and arguably the "most innovative city in the world". All of these cities have become prosperous and demonstrate the economic benefit of creating a liveable and sustainable environment for their people.
The challenge confronting Melbourne is not simply to make Melbourne more liveable, but to maintain it at a time when the impact of population and economic growth together with climate change and global warming are reducing it.

- **The need to create local job opportunities ie where people live.**

Singapore recognised that having just one CBD was not practical and has created several secondary CBDs with specialised functions such as manufacturing, technology, banking, entertainment and trade which act as transport nodes that are serviced with an excellent public transport service network (rail and buses). According to the 2020 census 57.8% of residents use PT to get to work. Similar concepts, reflected in District Centre strategies, urban villages etc have been promoted by Melbourne and other Australian cities but with limited success. It is expected that increasing economic and environmental pressure will force governments to review this situation and find ways of making this concept work.

Transport Integration

Focus on most sustainable modes of travel ie active transport which places least demand on existing infrastructure.

Smart cities understand this and are increasingly using active transport to underpin their transport and city plans – particularly for short or local trips whilst at the same time ensuring public transport services are operated as efficiently and cost effectively as possible with high levels of patronage to minimise their environmental impact. Several European cities have already moved in this direction.

Copenhagen has set itself the goal of becoming 'the world's best bicycle city by 2025. Achieving this goal is also viewed as integral to the city's health plan, to the environmental goal of making the city CO_2 neutral by 2025 and enhancing the liveability of the city. In January 2022 "Copenhagen reported that 62% of its residents are now commuting to work or school by bike — an increase from 52% in 2015 & 36% in 2012 when the City Council launched a 14-year-plan to improve the quality, safety & comfort of cycling."
Zurich has also recognised the need to use active transport to underpin its transport strategy, particularly for short and local trips and use its excellent public transport services for longer trips.
Paris has become one of a growing number of cities and towns that has introduced a 30kph speed limit for the whole city (apart from a few main roads that connect Paris with its hinterland) which is designed to get people out their cars and walk, cycle or use public transport. This policy was designed to reduce greenhouse emissions but it also creates a much safer environment for cyclists and pedestrians. There is an imperative for Melbourne to adopt a similar strategy and it is fortunate that its topography and mild climate make it ideal for cycling.

Improving Public Transport coverage, efficiency and effectiveness.

Public transport will never achieve the ultimate target of zero emissions but it does offer the potential for more efficient travel in the environmental and economic context as well as meeting social/equality obligations. To achieve this it is critical it is operated and administered as efficiently and effectively as possible.

The Public Transport Users Association in Victoria has noted that "running good public transport does require real money, but on the whole it costs much less to run public transport well than it does to run it badly. What's important is to ensure public transport is of high enough quality to attract passengers throughout the day, so that operating costs aren't wasted running empty vehicles" … and not become a drain on the public purse.
Most cities stress the need for an efficient, cost-effective public transport service.
In Zurich efficiency and effectiveness are key. Quoting Ernst Joos Vice Director, Verkehrsbetriebe Zurich
"Readers will no doubt expect a representative for well-to-do Switzerland to present a solid and correspondingly expensive answer to city traffic problems. However I am going to disappoint you. Zurich's transport policy is worthy of attention because:

- *It is not spectacular, but is efficient*
- *It costs little and protects the environment*
- *It imposes self-restraint on politicians, but the population accepts and participates in it.*

The lesson here is to keep investment in infrastructure as low as possible – keep it simple, do not spend more than is necessary but make sure it is well designed, fit for purpose and well maintained. The focus must be on "service" and meeting travellers' needs - not the infrastructure that supports it.

Cost recovery is also important for the Singapore public transport system. It has a 70% fare box recovery, and like Zurich, the quality of services is high with a focus on smooth reliable safe journeys, efficiency and continual improvement. Like Zurich fares are not cheap but they are affordable and people are willing to pay and 57.8% of Singapore residents use PT to get to work (2020 census).

In Curitiba low cost implementation was vital – the city could not afford a costly or monumental transport system, but Jamie Learner (mayor who presided over Curitiba's transformation) went further "If you want creativity, cut one zero from the budget. If you want sustainability, cut two zeros!"

The need for efficiency is not confined to transport operations and servicing, it must also be reflected in management and administration at all levels including the government department itself.

Adopting the best model for public transport.

One would expect general agreement about the most appropriate public transport model based on international standards of best practice but that is not the case - certainly not in Melbourne and in Melbourne there is considerable scope for improvement. As Dr John Stone wrote in his paper "Can European models of public transport governance save Australian cities" there are valuable lessons that can be learnt from other cities and applied here in Melbourne. These include:

First Lesson
"*For most cities success lies in the way services and infrastructure are planned – ie the extent to which there is a unified approach in the way they organise plan and operate transport services and supporting infrastructure - there is a clear need for better mechanisms and has been recognised in a number of studies and policy investigations.*
Much of the success in German speaking Europe has been ascribed to the model for organising cooperation adopted in almost all Swiss, Austrian and German urban regions. Fragmented responsibilities etc have been recognised as a major problem. In response, small coordinating authorities (transport alliances have been established to resolve competing priorities"

Second lesson *– "lies in the different principles underlying the design of public transport services.*

The essence of public transport is carrying people with different trip origins and destinations in the same vehicle. These travellers can then be transported with lower economic and environmental costs than if they travelled separately. Ie instead of anywhere to everywhere approach with tailor made services to suit different travel markets/segments: express trains for peak commuters; regular buses for local trips along busy corridors; car like paratransit for low demand corridors and times.
The problem with this approach is that the more public transport becomes tailor-made the more it surrenders its environmental and economic advantages. A public transport system offering a direct service between every origin and destination would have low frequencies, low occupancies, high costs and high greenhouse emissions per passenger".

"The alternative is networks. Instead of tailor-made public transport, transfers can enable provision of a ready-made service. This approach enables "anywhere-to-anywhere" travel while keeping occupancy rates high, by carrying different kinds of travellers on the same service. But it is designed on the assumption that every trip requires a transfer… that transfers are free and high frequencies ensure minimal waiting".

"Creation of the network effect is central to the higher efficiency in the use of available public transport service supply in the European cities. The idea behind the ready-made model is to provide a stable network of routes that operates consistently and at high standards throughout the day and week, catering for as many different trip types as possible with as few different services as possible."

Melbourne fails in both of the above. This issue will become increasingly critical as Melbourne continues to grow and sprawl, and as local and cross-town trips increasingly dominate ie trips for which PT is least competitive compared to trips to the CBD. Redesigning the public transport network is essential but will require a major change in thinking about the network concept itself. This must start with bus services which for most people are the only form of public transport and provides the "glue" that ties the public transport network together. Whilst there has been a lot of talk about the need to redesign the public transport network, and the bus component of it in particular little progress has been made. It is useful to look at public transport networks for other cities and the way these enable people to travel cross town and around the city instead of focusing on the city centre in the way Melbourne does.

Rethinking Mobility

There is an environmental imperative to deliver policies that encourage people to travel less and less often as well as more efficiently but this requires a change in the transport paradigm - a total rethink, particularly for personal travel which challenges the need to promote unlimited mobility as a matter of right. As Moriarty and Honnery point out in several articles and a book which have been the subject of a short paper Hypermobility Hits The Wall by Bart Hawkins Kreps, originally published by An Outside Chance 23 August 2022,

"The number of passenger kilometres per person per year exploded by a factor of 240 between 1900 and 2018. This overall 240-fold rise is extraordinary, considering the less than five-fold global population increase over the same period. It is even about 30 times the growth in real global GDP."
"The global average for motorized travel is now about 6,300 km per person per year. At the extremes, however, US residents average over 30,000 km per person per year, while in some countries the average is only a few hundred km per person per year.
Could the high degree of mobility now standard in the US be extended to the whole world's population? Not likely. Moriarty calculates that if each person in the world were to travel 30,000 km per year in motorized transport, world transport energy levels alone would be about 668 EJ, greater

than global total commercial energy use of 576 EJ for 2018…It should be noted that of all typical modern travel modes, air travel is the most environmentally damaging and least sustainable".

Reducing car dependency and excessive mobility - International Responses

A growing number of cities have implemented strategies to reduce car use and excessive mobility often using a range of "carrots" and "sticks".

Vienna's goal is to reduce motorised transport to reduce per person to 15% of total mobility by 2050 and is implementing a strategy to achieve this. This includes measures to improve PT services (which are already provided to a very high standard), car parking management and promotion of active transport. A growing number of European cities and town have implemented reduced speed limits ie 30kph in a deliberate attempt to get people out of their cars.

In Singapore public transport is given top priority and private vehicles are heavily taxed. Private car ownership in Singapore is the most expensive in the world and congestion charges are applied to discourage car use during peak travel time.

Zurich's public transport system is already a model of international best practice but is promoting active transport to underpin its sustainable transport model.

Copenhagen has established itself as the bicycle capital of the world and has achieved this by making safety the key issue. Promotion of low-cost active transport can also reduce the need to provide more expensive public transport services.

Lessons that can be learnt from Copenhagen's success are

- Narratives must focus on road safety
  Safety is a go to topic for the media, it is local, has immediate relevance to readers and is potentially a matter of life and death
- Put protected bike lanes in the transportation policy agenda
- Demands to improve sustainability of transportation must be linked with other goals - can achieve environmental goals without even talking about them
- Language matters – using the term "vulnerable" road users can promote a focus on design solutions
- View antagonists as potential allies.

Copenhagen has been to some extent a victim of its own success. Cycling has become so popular that it is now suffering from bike "congestion" and there is pressure to increase cycling infrastructure.

Summary and Conclusions

Lay people may find the goals and strategies of leading cities noted above rational and common sense and ask why these have not been implemented here in Melbourne/Victoria, particularly when they provide obvious social and environmental benefits and potential cost savings for individuals and the broader community. People may also be perplexed because investment required to create a safe and attractive environment for active transport is very low compared to that required for private motorized vehicle and a well run public transport is far more efficient in moving people and potentially cheaper way to travel than owning a car.

The challenge is to create an environment where private motorized travel is overtaken by active and public transport as modes of first choice for most trips but there are many barriers that have to be overcome to achieve this, most of which are political.

Most, if not all of the "levers" that have been applied by other cities to create this environment can be applied here so the issue is not "what" can be done but "how" and this must be an integral of the plan that underpins the "narrative".

The starting point however is to establish the new vision and goals. This must be a vision that is compelling, irresistible and beyond dispute. Curitiba's aim was to improve quality of life for citizens

and improve productivity of the city. Singapore was to be the "City in a Garden". Copenhagen's aim is to be the cycling capital of the world. For Melbourne? "Doing more with less" should be a given for everyone including governments, particularly at a time of increasing financial difficulty but it must be linked to an acceptable purpose and a positive outcome. The proposed narrative is "*Doing More with Less and Moving towards more Sustainable Transport"* or perhaps …*and maintaining Melbourne as a liveable city* but it is suggested that it be reviewed by focus groups to ensure it delivers the right message.

Proposed actions are provided in Appendix 1. This includes the context and rationale for actions designed to improve transport outcomes for the transport system as a whole as quickly as possible at least cost using greenhouse emission reductions as its principal goal. This can be achieved quickly in the existing motorised fleet via improved fuel efficiency, in the first place supported by behavioural change to encourage the transport of people and goods and services to travel/transport less and less often using most efficient modes of transport.

Whilst public transport can and must play an important role, its ability to reduce emissions for the transport system as a whole is limited but it does have the capacity to assist in reshaping the city in a way that makes it more sustainable. Many of the measures required to improve PT service quality and coverage will take time and will be costly. PT also faces considerable challenges to reduce its own emissions and overcome many of the barriers that have resisted its ability to achieve world best practice. These barriers must be overcome but efforts must be directed to areas where fundamental change is required and focus on establishing the foundations for a world class system instead of building on the antiquated system that exists today. Priorities are:

Firstly redesigning the network – a network that integrates all PT modes ie trains, trams and buses, that is easily accessed by active transport. This must be based on models of international best practice. It must be stressed that whilst attempts to improve service quality of the existing network by increasing service frequencies etc will provide benefits, these benefits will be restricted by the imperfections of the system that exist today ie by constant disruptions/delays, service cancellations and limitations of a poorly functioning network itself with limited integration between different modes.

Priority must be given to fixing all of these to provide a sound basis on which to grow, but it needs a plan and there is little agreement about what the plan looks like let alone how it can be implemented. So the top priorities must be:

- Develop a service plan for the city which confirms the extent of city coverage and service levels to be provided within different areas/sectors of the city and beyond ie as part of an integrated transport/land use plan
- Develop a network to satisfy the service plan
- Develop a timetable for the network as a whole
- Establish the fleet required to deliver the service
- Identify infrastructure necessary to support the fleet operations plan
- And so on……

There will be parts of the existing network that will be retained ofcourse, particularly heavy and light rail where services can be improved straight away ie by running more services, but benefits will be limited if the problems of service delivery that exist today, many of which have become systemic in nature such as unreliability, safety etc are not addressed. It is argued therefore that these must be

addressed first, often at relatively low cost to ensure that part of the system has a sound base on which to build.

In summary public transport priorities must focus on key areas which provide the building blocks for a comprehensive integrated transport plan of which public transport is an important part but the emphasis must be on key programs designed to achieve measurable goals/outcomes ie understanding there are no simple single fix solutions which include many actions rather an ad-hoc list of projects.

Recommendations also include changes in the pricing of metropolitan or regional public transport services and improvement in administration and management of public transport services. Both of these offer scope for improvement and should be reviewed.

More importantly this paper does not include a strategy for implementation, designed to overcome vested interests that resist change. This will be critical for the Plan's success. In this respect there are valuable lessons that can be learned from all of the cities discussed above, most of which have application in Melbourne. It is argued that the lessons learnt from Zurich are of particular relevance. Understanding these is critical and requires a separate paper with recommendations on how these can be applied by advocacy groups to enable them to be more successful in securing better transport outcomes. Brief notes on the creation of Zurich's Public transport – a model of international best practice, background history, key factors for success and lessons that have application for Melbourne are provided in Appendix 3**.**

Appendix 1

Recommendations

Context

Recommendations have been developed in response to the transport challenges Melbourne and the State of Victoria faces now and in the future. These have been discussed briefly earlier but it is worth repeating and elaborating further to highlight their significance, particularly as they are given only superficial treatment or largely ignored by government for transport and city planning.

Rising inflation, and living costs are putting the community under increasing stress. This is occurring at a time when rapidly increasing debt and rising interest rates increasingly constrain government spending and its ability to maintain government/community services and force it to reassess priorities and become more frugal and do more with less. It is a trend that is likely to continue for the foreseeable future. The budget must also respond to a range of threats and scenarios that must be faced in the future which require immediate action and must be planned for. There is increasing agreement that these threats include

- Climate action failure
- Extreme weather
- Biodiversity loss
- Social cohesion erosion
- Livelihood crises
- Infectious diseases
- Human environmental damage
- Natural resource crises
- Debt crises
- Geoeconomic confrontation and wars.

It is clear our future will be one in which environmental factors will dominate. More specifically the plan must respond to the latest warning that there is only a 50% chance of limiting global warming to 3 degrees; a global average which for Australia means 4 degrees and will be unliveable. It should be noted that this has profound implications for all elements of the economy and will become an increasing burden in the future, in a world of growing scarcity in which people will be forced to consume less of everything and adapt accordingly. This warning should be a reminder that climate change must be treated as a top priority, and addressed as a matter of urgency.

All of the threats noted above will interact and most likely become mutually reinforcing with social, economic and political implications. Increasing debt and budget pressures and changing priorities ie health, housing and renewable energy generation are already forcing government to renew its priorities, particularly on infrastructure spending which is contributing to inflationary pressures.

Environment pressures will demand major reductions in greenhouse the emissions, particularly for the transport sector. Whilst technology will play a part behavioural change will be critical reinforcing the imperative to travel and transport goods and services less, less often over shorter distances and more efficiently. These pressures will force major changes in the way people travel. Some transport industries (the airline industry in particular) will find it difficult if not impossible to meet emission reduction targets and will become sunset industries with profound social and economic implications.

The social and economic environment is also changing rapidly at the local level. The covid pandemic has forced major changes in travel patterns ie more working from home (for white collar jobs), and mode choice. More broadly, higher interest rates and rising interest payments have reduced government's ability to fund major transport projects, whilst exposing needs in other areas, particularly health, education, community services and energy security. Federal support for same is also likely to be constrained. Other considerations include the need to address community concerns regarding living costs, transition to a low carbon economy and the need to provide the public some return for the years of transport disruptions many have endured.

All of the above affect the economic life of new infrastructure and the extent to which budget spending/investment for specific projects remains relevant in the future. In a rapidly changing environment investment risk is minimized by implementing projects/programs that are low cost, take little time to be developed and can be implemented quickly with significant and measurable benefits. In the transport sector this must be progressed based on the environmental imperative to travel and transport people, goods and services less, over shorter distances and more efficiently.

Proposals listed in this submission include all modes of travel for personal travel and freight and have been developed as important elements of a transport plan. The starting point however is to understand the transport system itself – what it is and how it works as a system.

The Transport "System"

Transport is a service industry that operates within a larger socio/economic/political and environmental system, in which service needs are provided by numerous modes of travel and transport. It is an industry which demands supporting infrastructure that must be fit for purpose and designed and managed in a way that promotes optimal service outcomes as cost effectively as possible. TfM is of the view that Melbourne and Victoria generally has an abundance of transport infrastructure, that the challenge is to maintain what we have to a higher standard, work it harder and manage it in a way that promotes the most efficient modes travel and transport and reduces transport emissions in the process.

In this context it is important that proposals are designed to deliver outcomes that are measurable and contribute to well defined goals that are part of a program designed to improve the functioning/ outcomes of the transport system as a whole. The focus in this submission is on service ie addressing service issues that are critical for delivery of better transport outcomes. Achieving this will require a systems based approach that uses a variety of "levers" designed to achieve desired outcomes, including other funding sources (such as maintenance or recurrent funding, partnerships with others that have funding, piggy backing on other funds) or minimal/zero cost mechanisms such as regulation, changing rules, standards, pricing, organisation change and so on.

City Travel Patterns and Cost of Car Dependency

Melbourne is a city that has become increasingly decentralised. Most trips undertaken by people are local, often very short or cross town. These are trips which private transport ie the car or active transport are most competitive and PT is least competitive ie in terms of service and coverage. For most of Melbourne, PT is a bus and it is the bus that provides the glue that ties the PT network ie linking all modes together. PT can lift its game by providing a better PT network - ie like Zurich by providing a network which enables people using it to get around by making connections - often several to make it work for them in a physical and timetable sense. Increasing services, particularly bus service frequencies is important but it is critical they run quickly and reliably to time so they can

guarantee connections. This can be achieved using a time pulse system like Zurich, particularly in outer areas where service levels are very low in a way that guarantees connections but this means providing priority on roads for buses and trams (which can be done and should be a top priority) and eliminating disruptions, particularly infrastructure maintenance and related works. Achieving this must be a top priority. But it also requires a coherent network - one that is easily understood that people can use to get about. Melbourne does not have that and this must be rectified.

The main focus for short trips must be active transport. It is cheap and a no brainer from an environmental, economic and public health perspective. The key is safety, and whilst there are no single fixes reducing speed limits is critical and can be carried out quickly for most of Melbourne at minimal cost. e-Bikes are great for older people and those who are less physically capable. Combined with trains (and ideally buses and trams), bikes can cover much of Melbourne quickly and safely. Combining these measures can provide the core of a transport plan that addresses a range of issues including social isolation and disadvantage linked to car dependency as well as economic and environmental imperatives. The strategy is cheap, requires relatively little investment in costly infrastructure and can be implemented quickly. The focus therefore is service and making more efficient use of existing infrastructure.
From an environmental perspective such a strategy must be supported by an emission reduction program that targets all motor vehicles using a combination of measures based on technology and behavioural change.

Rationale and Priorities

1. Priority is given to measures which drive behaviour change ie in a way which encourages people and businesses to consume less of everything including travel/transport people, goods and services – ***this is an environmental imperative but it will not be one of choice – it will be forced upon society as environmental pressures increase in coming years***
2. ***It follows that we must make better use of what we have already ie existing infrastructure and vehicles and that we cannot "build" our way out of trouble***
3. Proposals must deliver ***measurable outcomes***, the most important of which is reduction of greenhouse emissions
4. Recommendations ***include all modes*** of travel and transport (ie including freight) - not just PT
5. Focus is on proposals that can be ***implemented quickly and at least cost*** to achieve early benefits and minimise risk
6. Proposals can be delivered in a variety of ways - ***not confined to capital works*** ie using improved management, operations, better maintenance, changing rules or regulations or improved compliance etc
7. Proposals are ***developed as a program*** or part of a well- defined program ie not as ad-hoc recommendations

Recommendations and Funding Priorities

1. **Promotion of Active Transport**

Implement the UN call for nations to allocate at least 20% of transport budgets to walking and cycling infrastructure to combat Climate Change and disease driven by motorised transport. Active transport is the only transport mode that is close to zero emissions – no other travel or transport mode comes close.

This requires a well designed multidisciplinary "system" based strategy and program designed to promote cycling and remove barriers that make it difficult with mechanisms to make the transition to cycling easy. It will include a "carrots and sticks" strategy. Whilst there are no simple single fix solutions safety is key.

Introduction of lower speed limits for all roads and 40 and ultimately 30kph on all suburban streets and minor roads is an essential first step, but must be supported by other measures, as part of a comprehensive program including effective monitoring and policing to ensure compliance. This has been implemented in a growing number of cities including Paris. This measure was designed to get people out of cars onto bikes or public transport. It can be implemented quickly at relatively low cost, with measurable outcomes and benefits that can be realised quickly which include

- Lower emissions and pollution generally
- A range of public health benefits including reduced road trauma, improved public health and wellbeing outcomes
- Reduced need for physical infrastructure
- It is affordable, particularly for economically/socially disadvantaged
- It can become the dominant mode for local trips but can also link with public transport – particularly trains to increase its range to access most of Melbourne and much of regional Victoria
- The range of bikes available, including folding and e-bikes enable it to cater for a wide range of people. E-Bikes are also being used increasingly as small cargo and people carriers.

The benefit cost ratio is high, and would exceed those achieved by any other mode of transport.

2. Improved coverage, service and efficiency provided by public transport

There are no simple single fixes but the following are essential to provide a foundation to achieve world class outcomes:

- **Redesign the public transport network**
- **Extension and acceleration of the Smart Tram Project to provide absolute priority on roads for trams and buses**
- **Elimination of service disruptions to all modes of public transport, particularly trains including maintenance and works related delays and bus replacements of trains.**

The development of a public transport service plan cannot be progressed with a series of ad-hoc projects – it needs a plan which identifies the elements of the system, including the key elements that provide the essential building blocks/foundation and a strategic plan to implement them. This must be based on guiding principles for public transport ie a service industry that operates in a competitive environment for patronage, in which coverage, accessibility and quality of service are key. Redesign of the PT network is essential and must be a top priority ie to provide the foundation on which to build a high quality service for Melbourne.

Critical service issues are listed in table 1 below.

Table 1

Public Transport Customer Service Issues

Ref charts provided by Prof Graham Currie summarized roughly in tabular form below

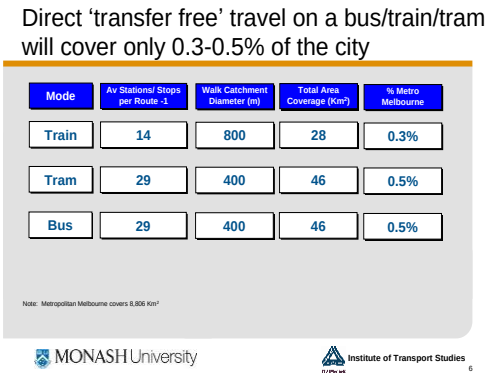
Service Issue General Ranking	PT Issue Importance	PT Issue Importance (on scale of 3.5-6.5) Note: all scored between 6.4 – 5.6)	PT Issue Performance (on scale of 3.5-6.5)
1	Safe at night	6.4 Highest	4.5 Worst – v poor
2	Reliability	6.3 Second highest	5.2 poor
3	Frequency	6.25	5.0 poor
4	Safe during day	6.4	5.4
5	PT available where and when needed	6.1	5.0 poor
6	Deal with disruptions quickly	6.2	4.5 V poor
7	Get to stops/stations		
8	Quality of service	6.0	4.5 V poor
9	Make connections	6.0	5.0 poor
10	Available on weekends	6.2	
11	Get information about PT		
12	Disruptions don't happen often	6.0	4.8 Very poor
13	Meet costs	5.9	5.0 poor
14	Information to plan journey	6.0	
15	People I care for can use it safely	6.2	4.6 Poor
16	Available at night	5.8	
17	Ease of buying/using a ticket	6.1	
18	Over crowding	5.9	
19	Staff courteous and friendly		
20	Physical access	5.8	
21	Can make trips to new places on PT		
22	Travel time compared to car	5.7	4.3 V poor

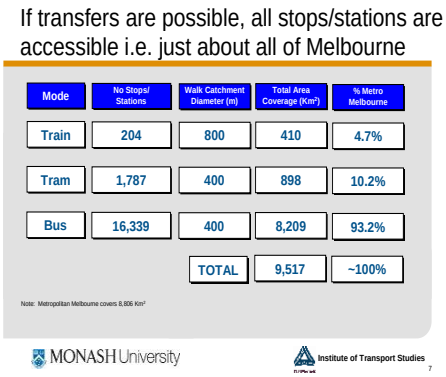
TRANSPORTATION RESEARCH RECORD No 2538 on pages 54- 64

Source: Currie G Delbosc A (2015) Variation I Perceptions of Urban Public Transport Between International Cities Using Spiral Plot Analysis

These recognise that public transport services operate not as individual routes but as a well connected network. But successful networking must be achieved in a timetable (service) as well as a physical sense. In this context travel time and reliability and the ability to make transfers/connections quickly and conveniently ie to provide a seamless service are critical. Achieving this requires elimination of all sources of disruptions and delays. The importance of networking is highlighted in table 2 below,

Table 2





Disruptions and delays have become a regular feature of Melbourne's public transport system. **This includes extensive use of bus replacements, particularly for train services which further degrades the quality and accessibility of PT services and its networking capacity.** As a consequence it fails to realise its potential to attract patronage and increase its revenue. Whilst PT has community service obligations and cannot be expected to operate at a profit, it is essential it operates as efficiently and cost effectively as possible to ensure it does not become a burden on the public purse - it makes no sense in the narrow financial sense to run it poorly. But it makes even less sense if externalities ie the broader social, economic and environmental costs and the liveability of the city as a whole are taken into account.

The need to increase service frequencies, particularly for buses but also rail and tram is a given, but this service improvement is reduced if buses and trams continue to be stuck in traffic and rail services continue to be disrupted or cancelled, so addressing these must be top priority.

3. Freight Transfer to Rail

There are no simple single fix solutions to revitalising rail freight, but two key issues standout as key, both of which have budget implications

- **Increased maintenance of all components of the freight industry**
- **Institutional reform** as discussed below.

Much of the freight carried in and out of Melbourne and throughout Victoria generally was once carried by rail. Most freight traffic today is transported by road, despite the fact that rail is more efficient from an energy perspective and generates significantly fewer greenhouse emissions per tonne km. Estimated reductions vary considerably but according to some researchers can be up to 16 times less than road freight per Tkm travelled (VAGO Effectiveness of rail freight support programs, tabled 27 June 2023).

Infrastructure required to support rail freight has been severely neglected, ie poorly maintained and in urgent need of upgrading or renewal, noting that inadequate maintenance also applies to country roads and other infrastructure which impact the delivery of passenger services and freight, but there are many factors which have contributed to the decline in rail freight.

Institutional and political factors are also important. The current system has given road freight favoured treatment by government for many years putting rail freight at a significant disadvantage. This is reflected in rules, regulations and operating practices, procedures, standards and so on. These must be reviewed and redesigned or replaced in a way that promotes rail as the favoured freight carrier. The system also includes subsidies and economic concessions, many of which are described

as “externalities”; costs which road freight avoids paying or contributes very little but must pay to enable rail to compete on an equal footing. These include

- impact on road safety and trauma
- cost of roads and other supporting infrastructure including road maintenance
- air/noise/water pollution and health/amenity impacts
- nature and landscape impacts
- upstream and downstream impacts
- traffic congestion.

All of these issues must be addressed if rail freight potential is to be achieved but the problems are systemic, so resolving them requires a systems based approach in which there will be no simple single fix solutions.

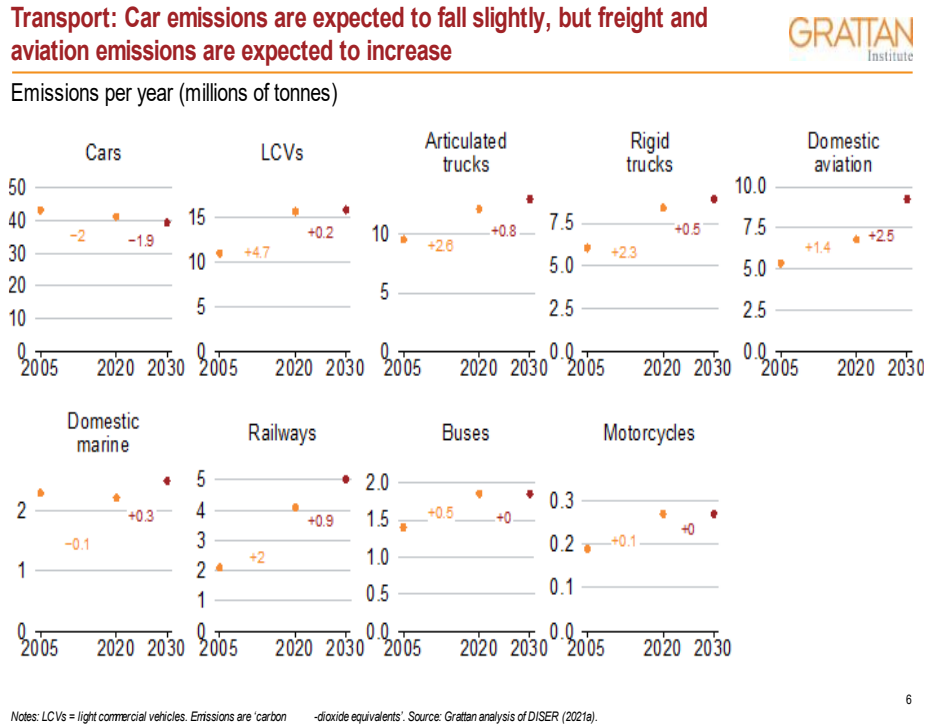
4. Rapid reductions in vehicle emissions for the existing transport fleet

Despite constant warnings to reduce greenhouse emissions transport emissions continue to rise and this trend is expected to continue for some years unless drastic action is taken by government at all levels to reverse this trend. Ref fig 1 below. This applies to all modes of motorised transport including public transport. Whilst achieving zero emission for motorised transport is impossible, significant reductions are possible and can be achieved using a combination of technology and behavioural change. Public transport must also increase its efficiency as a low emission people carrier by being well patronised – running empty buses will not satisfy this criteria, and will require a business and marketing plan to achieve it. More general recommendations for the transport fleet include the following:

- **Improving fuel quality ie less dirty and cleaner burning by raising standards for local and imported fuel**
- **Increasing vehicle maintenance standards and compliance**
- **Phasing out old inefficient and poorly maintained vehicles and replacement with more efficient vehicles**
- **Behavioural change which encourages/forces drivers to drive more efficiently and less often with shorter trips using a combination of regulation, financial instruments (road pricing etc), and changes to travel infrastructure such as reduced availability and increased cost of parking ie a strategy that includes “carrots” and “sticks”.**
- **Public education campaign and policing campaign to promote compliance.**

The plan must also anticipate the demise of dirty high emission modes of travel/transport such as the airline industry that have limited ability to reduce emissions and the implications for industries and business activities they support (and the infrastructure that supports them) which are destined to become sunset industries.

Fig 1



Summary

Recommendations provided above are designed to improve transport outcomes that are appropriate in a rapidly changing world consistent with world best practice. The focus is doing more with less in a world of increasing uncertainty with growing social, economic/financial and environmental pressures which are forcing governments at all levels to review priorities and make more efficient use of resources, particularly existing infrastructure before building more. It is also forcing government to focus on improving the coverage and quality of government services as cost effectively as possible in an environment which demands rapid reductions in greenhouse emissions and the environmental footprint.

Recommendations environmental imperatives and focus on areas which provide the building blocks for a comprehensive transport plan. It is proposed these be progressed using well designed programs that form an integral part of a transport plan which incorporates many contributing and reinforcing actions instead of an ad-hoc collection of projects. The key message is the imperative to progress programs which can be implemented quickly at low or minimal cost and minimal risk which provide high value and measurable benefits that align with the social, economic and environmental imperatives identified in this submission. The final message is that “budgets” must not be confined to borrowings for capital works. They should also reflect maintenance and recurrent expenditure and opportunities to improve budget outcomes using a range of regulatory, financial and other mechanisms and that in many cases it will be interventions in these areas that provide the greatest opportunity for improved outcomes.

Appendix 2

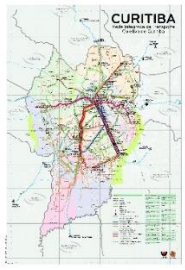
Public Transport network Maps for selected Cities

Vienna

Copenhagen

Zurich

Singapore



Curitiba

Appendix 3

The creation of Zurich's Public transport

a model of international best practice

Background history, key factors for success and lessons that have application for Melbourne

Zurich's public transport system has been the subject of numerous papers. One of the most comprehensive of these is a report by the Mineta Transportation Institute, MTI Report 01-03, "Implementation of Zurich's Transit Priority Program" which has been quoted extensively below.

"Zurich is famous for the quality *of its public transit system. – an attractive way to move about the city that is easy to use, fast, frequent, reliable and inexpensive… makes a significant contribution to the city's overall high quality of life." Critical to its success is the transit priority program implemented over the last 30 years. Transit priority techniques are designed to speed up transit – the results have been exceptional and Zurich has one of the highest rates of transit usage today.*

The most important feature of the transit system is that it operates as a network (as discussed in John Stone's paper referred to earlier). ***The transit priority program enabled all of Zurich's surface transit lines to improve more quickly and for less money than constructing a new underground rail line. Consequently the entire transit network could be improved rather than just building a single line.***

This was the choice that Zurich faced in a 1973 election and asked voters to spend 1.2 billion Swiss Francs for a new underground transit system. Voters rejected that measure and voted instead to provide 200 million SFr over 10 years to implement transit priority measures to make the existing surface system more efficient.

This (surface transit) has many advantages over an underground system ie more accessible-does not require people to go underground to access it, simple to operate and designed to fit well into the urban environment. The natural trade-off is less space for cars however Zurich's economic success and high liveability prove this does not need to be a problem and PT is so good that driving is not necessary for most trips.

Transit priority is important because it is an extremely cost effective way to improve transit services by providing a faster and more reliable service, enabling it to operate more services with the same resources and by attracting more passengers. By reducing conflicts with private traffic it can also reduce accidents and driver stress.

Implementation lessons from Zurich critical for its success

- *Obtain and maintain strong public support*
- *Enlist elected official support*
- *Use smart implementation techniques*
    1. *Implement high-impact projects quickly and publicise their benefits*
    2. *Don't unnecessarily alienate people*
    3. *Implement priority techniques together with improvements that increase neighbourhood liveability*
- *Organise government to effectively deliver the program. Zurich addressed this by creating the following task forces*
    1. *Executive council – a group of elected officials and city department heads that direct city departments to develop transit priority improvements and provide political support for implementing them*
    2. *Working Party – a group of department heads and planners from several departments who collaborate on the development of specific transit priority improvements*
- *Careful traffic engineering and technology is critical*
- *Implement complementary programs to improve the transit system. Transit priority alone will not create an excellent system. Basic requirements are safety, good service and efficiency. In Zurich the following complementary programs were implemented*
    1. *Plan land uses to support transit*
    2. *Reduce traffic volumes*
    3. *Regional transit coordination and system*
- *Use capital investments to leverage institutional change*
- *Think carefully at the systems level.*

Summary

The Zurich transit priority system has created a more appropriate transit system for Zurich and has cost significantly less than a new rail system. The transit system has effectively upgraded the performance of the entire network, unlike a new rail line which would have had a more limited impact on the system as a whole. Other cities can learn a lot from studying this approach. It is proof that a conventional tram and bus system is an extraordinarily effective combination and more cost effective than an underground rail in a city like Zurich. It is also expected to be more cost effective in a sprawling city like Melbourne and supports the case for curtailing rail extensions (including airport rail) and underground rail projects (SRL, MM2) and raises serious questions about the extent to which earlier underground rail projects ie MM1 and even the suburban rail loop were justified in the first place.

Given that much of the infrastructure required for a Zurich style public transit priority system already exists and is in good condition ie the traffic signalisation system, it is conceivable that the 1:6 cost ratio that applied to Zurich for a priority transit vs underground rail line could be maintained in Melbourne and could be implemented relatively quickly compared to a new underground rail line. If this had been implemented before any of our underground rail lines were built it is conceivable that Melbourne would now have a world class public transit system with a far greater cost recovery than the system that exists today and be in a far stronger position to respond to the environmental and other challenges it faces without the huge debt burden government has now.

The overwhelming lesson is the need to learn from international best practice and apply these lessons where ever possible – It is not necessary to reinvent the wheel. The belief/mindset that these lessons cannot be applied to Melbourne because it is somehow unique which has existed for decades and persists today must change.

The MTI paper provides details of the program and techniques used in Zurich's transit priority program.

The HiTrans Best Practice Guide No2 – Public Transport – Planning the networks, based on the Zurich model is also available and is included as a reference for undergraduates at the University of Melbourne.