

RETROFITTING SUBURBIA

*How to better utilise &
activate existing streetscapes*



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FOREWORD

In August 2017, four Victorian local government officers undertook a study tour of the United States and Canada sponsored by the Municipal Engineering Foundation Victoria (MEFV).

The tour visited five cities throughout the US and Canada including Portland, Chicago, Denver, Orlando and Toronto which included attendance at the annual American Public Works Association Conference (PWX) in Orlando, Florida. At the conclusion of the tour, I also took the liberty of visiting Vancouver, Canada – to explore a city that represents as a model in urban sustainability and planning, in its quest to maintain its liveability status alongside Melbourne.

The three study tour delegates were myself – Frank Vasilacos, Senior Strategic Land Use and Transport Planner at Manningham City Council, Emma Dalton, Infrastructure Services General Manager at Campaspe Shire Council and Matthew (Matt) Varcoe, Unit Leader of Development Engineering at Whittlesea City Council. The tour was led by MEFV Trustee and Director of Assets and Infrastructure at Banyule City Council, Geoff Glynn.



The respective topics of study by each of the three delegates centred on the following themes – of which all served to be complimentary to one another:

- **Complete Streets and Placemaking (Frank)** – to explore how to best apply these themes to retrofit suburbia and better utilise and activate existing streetscapes;
- **Participative Engagement for Effectual Policy Development (Emma)** – to explore matters such as service planning and delivery, effective asset management and funding models in order to achieve long-term financial sustainability and improved community relationships; and
- **Integrated Water Cycle Management (IWCM) (Matt)** – to explore flood management, stormwater reuse and harvesting and best practice water quality treatment and innovation.

Acknowledgements

I would like to sincerely thank the MEFV for sponsoring the study tour, and providing this very unique opportunity for Victorian local government officers to build upon their knowledge through

experiencing the learnings and offerings from organisations and cities around North America. In particular, I would like to thank and acknowledge the MEFV for considering to send me, as a Land Use

“Plangineer’ – a new breed in public works!”

Planner (a non-engineer!), to the tour – as this demonstrates the positive shift in thinking, in that the progression of public works in our cities is best achieved in collaboration between both the Engineering and Planning disciplines.

I would also like to thank Geoff Glynn, for his guidance and mentoring throughout the tour, Mark Varmalis, Claudio Cullino, Warren Roberts and all other MEFV Trustees, Merv Patton for all his administrative help in organising the tour and my fellow delegates Emma and Matt, whose support and knowledge undoubtedly contributed to the successful outcome of our tour.

Finally, I express my sincere gratitude to my organisation, Manningham City Council, in accommodating this opportunity and supporting me on my study endeavours – particularly, Leigh Harrison, Director of Assets and Engineering for his ongoing mentoring and support throughout my career at Manningham.

We are especially thankful for the support of our Chicago hosts – John “Tex” Mick, Vydas Juskelis and the rest of the APWA Chicago Chapter team for their time and effort in hosting our delegation while in Chicago and Orlando.

Organisations Visited

Throughout our tour of North America, we had the pleasure of being hosted by a number of influential organisations and personnel, including local and state government authorities, planning, transport and water authorities, community groups, industry associations and local universities.

The following is a list of the organisations that we met and hosted our tour throughout the United States and Canada. We express our gratitude for the time and effort each of the organisations took to host our delegation.

- **Portland:**

- First Stop Portland division of the Portland State University (PSU)
- City of Hillsboro
- TriMet
- ZGF Architects
- City of Portland Bureaus of Planning and Sustainability, Transportation and Environmental Services

- **Chicago:**

- Village of Glenview
- Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)
- Village of Midlothian
- Floodlothian Midlothian community group
- Chicago Metropolitan Agency for Planning (CMAP)

- Chicago Department of Transportation (CDOT)
- American Public Works Association (APWA) – Chicago Chapter
- **Denver:**
 - City and County of Denver
 - Jefferson County
 - City of Golden
 - Colorado Department of Transportation
- **Toronto:**
 - Toronto City Council
 - Toronto Water Authority
 - R. C. Harris Water Treatment Plant
 - City of Hamilton
 - 'The Bentway' project team
- **Orlando:**
 - City of Orlando
 - Orlando Wetlands Park
 - City of Kissimmee

EXECUTIVE SUMMARY

My topic for the study tour to the United States (US) and Canada focused on the theme of *'Retrofitting Suburbia: How to better utilise and activate existing streetscapes'*. This topic sought to investigate opportunities of how to better utilise existing public street infrastructure, the road reserve and surface car parking lots, to create a more socially, physically and economically vibrant, inclusive and sustainable public environment.

This topic was ideally aimed at exploring how the concepts of 'Complete Streets' and 'Placemaking' can be applied to encourage more active public spaces for pedestrians, cyclists and other users in traditional car-based street environments. These concepts collectively seek to activate public spaces to stimulate economic activity through good urban design and the reallocation of street space to pedestrians. It seeks to highlight that people normally meet, socialise, exercise and spend money only *once* they get out of their cars.

The concept of Complete Streets accentuate that our streets serve more than just the purpose of catering for cars and vehicles. Streets should cater for people (of all abilities), cyclists, public transport, cars, dining, park and art space, water and greenery and as an inclusive and vibrant public place that can cater for all members of our community to feel safe and welcome to use.

Ultimately, the objective of this report is to convey the identified benefits of Complete Streets and Placemaking initiatives to understand how to apply these concepts in Victoria as potentially low-cost retrofits. This is particularly relevant given the current rate-capping environment is now contributing to multi-million dollar shortfalls in council budgets, restricting development of new costly infrastructure and capital works projects. It seeks to exemplify the importance of community engagement and the vital role the local community plays to support and lead the change to implement successful Complete Street and Placemaking projects.

As Melbourne's population continues to rapidly grow from 4.8 million today to almost 8 million by 2050, pressure will continue to mount on how the city can use its land more efficiently as the urban area expands and densifies whilst private open space diminishes. Public streets will need to perform a role more than just to carry vehicles. Suburbs will need to achieve the city-planning objective of a '20 minute city' – an urban environment where every resident can access their everyday needs within a 20 minute trip by either public transport, walking or cycling from where they live.

It should be recognised that we are all effectively a pedestrian before we enter our cars, mount our bikes or board public transport. A Complete Street seeks to acknowledge this aspect, in order to create a safer pedestrian environment. This is given that pedestrians are one of the most vulnerable users of our streets, particularly the young and elderly. In 2017 alone, pedestrians over the age of 70 accounted for one-third (33 per cent) of all pedestrian traffic-related fatalities in Victoria – a disproportionately high figure given that this demographic represents only 11 per cent of the overall

population. Furthermore, various studies have found that there is only a 10 per cent survival rate for pedestrians when they are struck by a vehicle travelling at 60 km/h. Whereas when struck at 30 km/h or less, the survival rate is 90 per cent.

Active transport such as walking and cycling are key components that contribute to, and play a unique role in achieving a successful Complete Street, with the rates of people cycling ever increasing in many cities. According to the most recent census data produced by the Australian Bureau of Statistics, in the 15 years between 2001 and 2016, cycling rates in Greater Melbourne as a method of travel to work increased 130 per cent. Cycling now accounts for 1.4 per cent of all trips to work – almost on par with the number of trips taken by bus (1.5 per cent). This growth in cycling is also mirrored in the US cities of Portland, Chicago and Denver where cycling rates have grown 297 per cent, 260 per cent and 120 per cent respectively in these three cities between 2000 and 2015. Based on these trends, the transport mode-share of people who cycle will continue to grow into the future and our streets will need to be transformed (in part by Complete Street initiatives) in order to accommodate cycling within a safe and encouraging environment.

It is provided that improving outdoor dining opportunities or creating public spaces through the use of Parklets (a dedicated kerbside or footpath seating and pedestrian space), can contribute to stimulating the local economy and help activate the street environment. The use of Parklets is considered a successful method to complement the objectives that contribute to a Complete Street. A recent study of Chicago's parklet projects found that 34 per cent of visitors made spontaneous food or beverage purchases when visiting the City's new activated outdoor areas, with business owners noting a 10 to 20 per cent increase in sales. These benefits are also mirrored in many other studies of Sydney and San Francisco Parklet programs, as outlined within this report.

Our study tour found that it was often a difficult task to measure the success of streetscape improvement projects, particularly when attempting to assess the subjective matters relating to urban design or the personal 'feeling' of being within an improved space. To address this, there are now many tools and methods that can assist to define and measure not only the *quantitative* elements (i.e. increase in pedestrian or cyclist traffic, increase in business sales revenues or reduction of crime) but also the *qualitative* elements as well (i.e. the sense of safety or personal 'feeling' or the level of attraction, attachment or value that one might associate with a place).

The need for a performance measurement is considered a critical factor in order to gain support (from community, political and/or organisational aspects) and to often obtain funding to deliver Complete Streets or Placemaking projects. Sound performance measures and case studies in many instances can support evidence-based decisions that may contribute to a successful business case.

The evidence-base and policy to support successful Complete Street and Placemaking projects is often underpinned by cities or municipalities having an adopted Complete Streets policy. A policy also serves to assist with justifying and supporting the reallocation of road space to other modes of transport and uses. In the United States, the *Urban Street Design Guide* which was prepared by the National Association of City Transport Officials (NACTO), now serves as a key guide to assist with the

design, planning and implementation of Complete Street projects. In the US alone, over 955 municipalities have since developed a Complete Street policy to help direct this change.

By utilising examples from North America, this topic seeks to apply methods in which to plan, deliver, maintain and ultimately enhance the use of existing public assets. In particular, where local government has the primary influence and control in achieving the desired outcome to retrofit its own existing infrastructure and public realm.

It was commonly recognised that projects will certainly always face a resistance to change by not only the community, but from other stakeholders, authorities and from within the organisation (i.e. local government) pursuing the change. However, with the adoption of a sound policy, relevant case studies or business cases and a targeted community consultation process that considers effective tools or methods of engagement, Complete Streets and Placemaking projects can be successfully implemented. Resistance to change can also be overcome by implementing projects as a trial or as a temporary measure first.

Based on the findings and lessons learnt throughout the tour, the following recommendations are provided in which to encourage better utilisation and activation of existing streetscapes in Victoria:

1. That each council develop a Complete Street policy to provide a framework and direct opportunities to better utilise and improve existing streetscapes.
2. Consider fostering a local Placemaking or Parklet project within your own local community.
3. Initiate Complete Street or Placemaking projects as a trial or pilot project first.
4. Establish a 'project advocate' or 'champion' early in the process.
5. Establish a methodology and process in order to quantifiably measure the success of the project.
6. Consider appropriate methods of engagement to effectively communicate the project with the community and stakeholders.

KEY FINDINGS

Some of the key observations that were identified throughout the study tour included:

- That many projects were initially ‘piloted’ as a trial or temporary measure to overcome resistance to change, and address the lack of adequate budgets to implement permanent infrastructure improvements;
- The importance in the ability to measure (or quantify) change over time (assess the relative cost/benefit outcome);
- That given the above, it is often difficult to measure or quantify the success of changes to neighbourhoods (other than by anecdotal observations) as a direct result of a Complete Street or Placemaking project (i.e. to isolate the economic or real estate development or appreciation of ‘place’ factors as a direct result of implementing these initiatives);
- The benefit of having an adopted Complete Street policy to support and justify your proposal;
- The significant rate of growth of cycling (both for commuting and recreational) and bike-share programs in many cities over the past 10 years – and the pressure this growth is placing on local and state authorities to adequately and safely cater for cyclists in our cities;
- The importance of achieving effective community engagement and the need to educate your community about the benefit of Complete Streets and Placemaking initiatives, including the importance of setting appropriate community expectations for projects from the onset. The use of case studies to illustrate successful examples is often encouraged;
- That local government should be willing to make agreements and ‘trade-offs’ with community and stakeholders to get projects off the ground – and assume a ‘collaborate, communicate and compromise’ approach;
- The importance of having an ambassador to lead the project (i.e. a politician or local community leader);
- The ability to recognise the political complexity of implementing such projects;
- The importance of “branding” the concept or project to explain and market the project idea by incorporating the use of social media and dedicated project websites;
- When funding is scarce, to consider separating the project delivery into phases – an ‘initial option’ and an ‘ultimate option’ – but design and build it to allow for the ultimate option to be completed. The need to ask yourself: do we build six blocks of interim or two blocks of ultimate options? Which will be beneficial and can it be an initial pilot or example project?;
- That the long-term maintenance of assets needs to be considered into the overall scope and budget to ensure they are not left in disrepair; and
- The importance of cross-organisational collaboration. Many organisations emphasised the need to liaise with relevant utility organisations in order to get them on board and ensure that they include any of their upcoming proposed work or proposed upgrades into your project construction – can also serve to improve the cost-benefit ratio of your project.

1. INTRODUCTION

This paper explores the concepts of ‘Complete Streets’ and ‘Placemaking’, in order to identify how to effectively implement initiatives in our urban and regional cityscapes throughout Victoria. The report seeks to explore the ideology, strategy and policy of applying Complete Street and Placemaking initiatives, to reallocate road space to better utilise and activate our streetscape environment, and recognise that our cities are continually changing and are an evolving habitat.

The concept of Complete Streets are streets that are allocated to everyone and to all modes of transportation. Complete Streets are designed and operated to enable safe access for all users of all ages and abilities – including pedestrians, cyclists, motorists and public transport users. Complete Streets encourage a shift of the mindset to appropriate a safe space and access to active modes of transport such as walking and cycling, rather than purely considering streets as a place to convey or park motor vehicles.

“Growing urban populations will demand that their streets serve not only as corridors for the conveyance of people, goods, and services, but as front yards, parks, playgrounds and public parks”

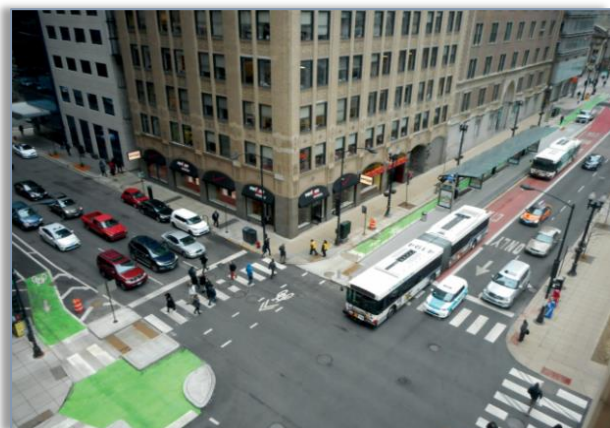
– National Association of City Transport Officials (NACTO).

The concept of Placemaking refers to a process by which we shape our public areas by inspiring people to collectively reimagine and reinvent public spaces as a place for the community to feel a relationship with, and a sense of ownership to. More than just promoting better urban design, Placemaking facilitates creative patterns of use that create physical, cultural, and social identities that define a place and support its ongoing evolution. The notion of Placemaking seeks to make existing retail and commercial streets more attractive and safer to pedestrians and attract redevelopment opportunities.

Amongst these topics, this report seeks to explore:

- the process and factors that enable the re-allocation of road space to other uses;
- how to create a ‘village’ and ‘main street’ environment that encapsulates local neighbourhood characteristics and stimulates economic activity;
- opportunities of how best to incorporate other complimentary features such as water sensitive urban design, provision of greener spaces, outdoor dining, pedestrian spaces and more aesthetically pleasing public spaces;
- the level of contribution from the local community in facilitating projects, and to identify the most effective methods of how to best engage with the community and stakeholders;
- the level of influence of local government to enable change; and
- how best to measure the benefits of the change – in order to quantify the impact and help support business cases to ‘sell’ future proposals.

Both Complete Streets and Placemaking initiatives play an intricate role and have a particular importance in encouraging behavioural change towards more sustainable human activities. In the context of sustainable urban planning and transport, these initiatives aim to explore new planning and engineering approaches that encourage a transport mode-shift away from the private motor vehicle. These topics collectively seek to understand and contribute to the multidisciplinary nature of city planning to retrofit suburbia, and ultimately, alter human behaviour by changing the environment in which the behaviour takes place.



These topics seek to highlight that the pedestrian is the core of transportation and the centre of all modes – as we are effectively all a ‘pedestrian’ before we get into a car or onto a bike or public transport. In many of our streets, it should be considered that given their physical vulnerability, the pedestrian should take precedent ahead of all other modes, followed by cyclists and public transport riders and following only then by private motor vehicles.

As our cities and suburbs continue on the path of urban densification and transition from the traditional quarter-acre block of vast open space, to smaller blocks, apartments and town houses – our streets are increasingly becoming more important as a space to serve as an active public place – a place of leisure, social interaction or somewhere to sit and read a book or enjoy the outdoors.

As Melbourne’s suburbs continue to grow and become more dense, and pressure mounts on local government to better allocate dwindling budgets, we seek to find efficient ways in which to deliver change by reallocating road space within our existing urban environment – given that local councils commonly have the authority and relationship with the community to facilitate these changes and a vested interest in asset recycling and effective asset management processes to support such change.

This is particularly important moving forward as many councils will experience a constraint on future budgets and ongoing financial pressure as a result of the introduction of rate capping, which was introduced by the Victorian State government in 2015 in the form of its ‘Fair Go Rates System’ (FGRS). FGRS now limits annual rate increases to a maximum of 2.5 per cent per annum.

Therefore, Complete Street and Placemaking initiatives intend to provide an opportunity to retrofit existing streetscapes by utilising low-cost methods that can be implemented in a more immediate timeframe to meet community expectations to continually upgrade and improve public spaces.

The commonalities that exist between American, Canadian and Australian cities provides an ideal opportunity to replicate and apply solutions to our own local Victorian local government areas, without having to “re-invent the wheel” as such. Many of the cities visited, are currently experiencing similar issues to Melbourne and other Australian cities in relation to rapid population growth and

pressure on infrastructure to keep up with and meet the demand of growth. Furthermore, local city budgets in many cities are restrained, with governments keen to maximise and build upon existing assets – rather than to constantly create new assets. Many of these cities are also facing the pressures of housing affordability, containing urban sprawl, managing the gentrification and densification of inner suburban areas and the revitalisation of downtown areas.

Melbourne, Toronto and Vancouver commonly feature within the top 10 most liveable cities in the world (according to annual liveability surveys conducted by The Economist and Monocle Magazines and consulting-firm, Mercer) – however these titles are appearing more difficult to maintain as the pressures of population growth and the imbalance of funding for infrastructure take their toll on city development, citizen satisfaction levels and overall liveability standards.

Streets need to be safe and attractive to people, in order to support physical and mental health objectives to get people moving about and participating in social interaction – particularly in the traditional car-centric suburbs – where social isolation is prevalent with members of our community who do not drive or have access to a motor vehicle within their car-dominated suburbs.

This report builds upon examples of Complete Streets and Placemaking that have been implemented in many cities across the United States and Canada – particularly in Chicago, Portland, Denver, New York, Toronto and Vancouver – to identify and demonstrate opportunities for how to implement changes in Victoria in a cost-effective and timely manner.

2. COMPLETE STREETS

2.1 What is a Complete Street

Complete Streets is a design approach that encourages streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Complete Streets should allow for safe travel by those walking, cycling, driving motor vehicles, riding public transportation or delivering goods.

An artist's impression of some of the elements that contribute to a Complete Street.



[Image Source: City of Hoboken, New Jersey].

The concept aims to create a street environment that encourages people to linger, socialise and where appropriate, to stimulate economic activity to encourage people to 'stick, stop, stay and spend' – not just to pass through. It also seeks to encourage the reallocation of valuable or scarce land for more inclusive or intensive use – particularly in existing urban areas.

The term Complete Streets started to emerge more commonly in the early 2000's, with New York City pioneering

the movement. In 2004, the National Complete Streets Coalition was founded, which is a not-for-profit organisation that promotes the development and implementation of Complete Streets policies and professional practices in the United States.

In 2015, the *Fixing America's Surface Transportation (FAST) Act* was passed which is the first federal transportation bill to ever include referencing to Complete Streets. This now legislates that all State Departments of Transportation (DOT) consider the *Urban Street Design Guide* (prepared by the National Association of City Transportation Officials (NACTO)) in implementing projects to better accommodate all road users. NACTO lists the following core principles that define a Complete Street:



2.2 Why consider a Complete Street

In modern cities, improving walkability and increasing densities often underpin successful urban renewal initiatives and support the clustering of economic activity. Complete Streets seek to build upon these opportunities by creating a self-dependant ‘village’ or ‘main street’ appeal that have the potential to address safety, health, environmental and economic issues by creating more liveable and people-friendly urban environments that promote active transport and public transport, reduce car-dependency, contribute to social interaction, physical activity, stimulate economic revitalisation and support local businesses through the activation and ‘greening’ of the streetscape.

Complete Street improvements to streetscapes, and business or retail areas, has the potential to change the perceived desirability of a street or neighbourhood. By incorporating improvements such as wider footpaths, seating, outdoor dining, green space or public art, Complete Streets have the potential to encourage people to linger and stay in the area by creating a more comfortable and enjoyable public realm, and making the space a destination in its own right.

Furthermore, Complete Streets have the potential to encourage active travel such as walking and cycling through the establishment of good urban and technical design practices and can help promote the urban renewal of an area and enhance safety in public areas and achieve Crime Prevention Through Environmental Design (CPTED) objectives.

In Victoria, the *Transport Integration Act 2010* promotes the consideration of all transport modes to achieve integrated transport and land use planning objectives in the context of a Complete Street – by seeking to ensure that ‘transport and land use should be effectively integrated so as to improve accessibility and transport efficiency’ with a focus on ‘facilitating better access to, and greater mobility within, local communities’ [Part 2, Sect. 11] and assure that ‘the road system operates as part of an integrated transport system which seeks to meet the needs of all transport system users’ [Part 5, Sect. 86].

On average in 2015-16, Australian households spent 15 per cent of their total household income on transportation costs (such as vehicle purchases and their ongoing running costs, public transport, taxi and ride sharing fares) – constituting as the third largest household cost after housing (20 per cent) and food and non-alcoholic beverages (17 per cent) [Household Expenditure Survey, Summary of Results (2015-16), Australian Bureau of Statistics]. More locally, households in outer Melbourne spend 22 to 25 per cent more on transportation costs than inner-city households, given the lack of public transport and greater distances in accessing local amenities within walking distance of where people live in outer Melbourne [Travel Expenditure of Melbourne Households: Spatial Variation by Purpose, Christina Inbakaran and Edward Shin, Department of Transport, 2010]. Implementing Complete Street initiatives has the potential to encourage the development of more local ‘villages’ to promote the concept of the ‘20 minute city’ to address the lack of services and amenity in middle or outer suburbia.

The *‘Walking, Riding and Access to Public Transport: Supporting Active Travel in Australian communities’* report highlights that in Victoria, 55 per cent of trips are five kilometres or less – of which

85 per cent are undertaken by car [Australian Government Department of Infrastructure and Transport, 2013]. A shift to encourage more walking or cycling, particularly for short journeys during peak periods, could improve the capacity of our transport systems and infrastructure. Good walking and cycling infrastructure can also extend the catchment of public transport services, further improving the capacity of transport systems. A Complete Streets initiative can help facilitate this in part, by providing for, and catering for more active transport opportunities in neighbourhood streetscapes within our suburbs.

2.3 How do you create a Complete Street

There is no single design for a Complete Street. Each one is unique and responds to its community's needs and existing environment. A Complete Street may include a mix of footpaths, bike lanes, dedicated bus lanes, tram or light rail, comfortable and accessible public transportation stops, regular and safe pedestrian street-crossing opportunities, median islands or boulevards, kerb extensions, outdoor dining, landscaping, parks, plazas, green spaces or public art. Complete Streets may also incorporate 'green' infrastructure such as stormwater treatment and harvesting to support urban ecosystems.

In many cases, the application of a 'road diet' can help facilitate and create a Complete Street. A road diet, is a technique in which the number of travel lanes or width of a road is reduced in order to improve safety or provide space for other modes of transport, such as for cycling or public transport. Road dieting contributes to the reallocation of road space to create more efficient or safer use of the street environment by restricting or redirecting existing traffic movement.

2.4 Barriers or issues of implementing a Complete Street

In order to implement a Complete Street, one must also recognise and overcome issues or barriers that hinder the process. Some of the common barriers or issues may include (as identified throughout the study tour):

- A resistance to change (from the community, local traders or various levels of government);
- A lack of support or drive from the community at the 'grass roots';
- Implications of political influence, or the 'politicising' of a proposal;
- The fear of 'gentrifying' neighbourhoods – and the consequential demand for or increase in local housing prices;
- A lack of evidence to support the economic impact attributed by a Complete Street;
- A physically restricted street environment to cater for all elements of a Complete Street;
- A lack of local adopted guidelines, policy or design standards;
- Bureaucratic processes and approvals between various levels of governments, utility authorities and other stakeholders; and/or
- Overcoming the 'car-centric' culture and view that streets are primarily for cars and parking.

2.5 Complete Street examples

Complete Streets (Before & After) – New York City

New York City presents some of the most recognised Complete Streets and plaza transformations in North America – many of which started off as a temporary measure and due to their success, are now being implemented as a permanent change. The redesign dramatically reduced vehicle and pedestrian crashes, increased bike usage and improved business conditions.

The following images, courtesy of the New York City Department of Transportation (NYCDOT), illustrate before and after quick change design strategy examples from three different locations within Manhattan – at Times Square & Broadway, 5th Avenue & Broadway and 17th Street & Broadway (Union Square).



Complete Streets & Placemaking in Chicago

In 2015, the City of Chicago in partnership with the Lakeview Chamber of Commerce (a local not-for-profit community of entrepreneurs and business owners), implemented a temporary Complete Streets and Placemaking project at Lincoln Hub (at Lincoln/Wellington/Southport Streets).

The Lincoln Hub installation combines traffic calming, pedestrian improvements and public art to create temporary kerb outstands to help slow vehicle traffic in the retail precinct, while reducing the crossing distance for pedestrians by 34 per cent [Lakeview Chamber of Commerce, 2015].

The temporary kerb outstands increase the pedestrian space, providing room for new seating and landscaping that encourages people to linger and creates a safer and inviting pedestrian environment. It contributes to creating a memorable focal point for the Lincoln Avenue corridor, by using colourful, attention-grabbing art installations (albeit, depending on your taste of 'art') painted on the street and sidewalk surface on all six corners. The objective of the project is to visually tie the corners together and highlight the area as the heart and 'Town Centre' of the Lakeview neighbourhood.

Due to its success and community support, the pilot initiative (which cost USD \$175,000 to deliver) will now be transitioned to become a permanent feature.



3. PLACEMAKING

3.1 What is Placemaking?

Put simply, Placemaking takes a people-focused approach to urban design. Placemaking is a process by which we shape our public realm by inspiring people to collectively reimagine and reinvent public spaces as a place for the community to enjoy and feel welcome to visit and stay. Placemaking facilitates creative patterns of use that builds physical, cultural, and social identities that define a place and support its ongoing evolution to create quality public spaces that helps contribute to people’s health, happiness, and wellbeing [Project for Public Spaces].

“It takes a place to create a community and a community to create a place”

– Project for Public Spaces.

Placemaking in Portland

In the suburb of Milwaukie, a vacant block adjacent to a new light rail station was being utilised as a temporary food van and beer garden venue, where locals can gather. As part of the precinct activation, the community created a public street art mural on a former blank wall of the local high school.

The initiative is led by the City of Milwaukie permitting murals by exempting them from the City’s signage regulations.

The art represents many local characteristics of the neighbourhood, and creates an art space that is unique and identifiable to the neighbourhood it represents.



In relation to Complete Streets and activating the streetscape, Placemaking can complement the creation of a space where the change is intended to be led by the community and one that the community feels it has ownership over.

3.2 What makes for a good place?

Effective public spaces are often difficult to accomplish because their complexity is rarely understood. Successful and genuine public spaces are used by many different people for many different purposes at many different times of the day and year.

The not-for-profit planning, design and educational organisation, Project for Public Spaces (PPS), outlines the following four key attributes that contribute to making a great place:

1. They are accessible and well connected to other important places in the area;

2. They are comfortable and project a good image;
3. They attract people to participate in activities there; and
4. They are sociable environments in which people want to gather and visit again and again.

A public space is inherently multidimensional, and essentially, the characteristics that define a good place might often be perceived or felt by differently to each person using the space.

Placemaking seeks to harness the local community’s characteristics to create a good place that represents its community’s identity and be unique in its own right.

3.3 How do you create a ‘good’ place?

In a streetscape environment, the foundation to creating a good place can be attributed to by the layout of the street and urban design characteristics – particularly at the ground floor or street level, as this is what counts most from the perspective of the pedestrian. Key to this, is to avoid blank walls and consideration for providing landscaping. Landscaping in a street environment offers the opportunity to provide shade, a buffer to moving vehicles, to mask harsh environments such a utility assets or to provide a sense of nature or a softer greener space as elements that can contribute to the positive aesthetic of the area.

When it comes to creating or attributing to repair a place – design matters – and in most cases, your community will want to influence the design (Placemaking) of the space above other matters such as stormwater harvesting facilities or general engineering solutions you may be trying to achieve.

Many of the organisations and authorities we met suggested the use of ‘tactical urbanism’ – quick, often temporary, low-cost projects that aim to make a small part of a city more lively or enjoyable. This tactic can often help get some minor projects off the ground

An example of ‘Intersection repair’ as a Placemaking and community building tactic in the Portland neighbourhood of Sunnyside.



In 1999, local residents painted a large sunflower on the road as one of the City’s first repair projects. Since 2000, residents gather every Memorial Day weekend to repaint the intersection.



without needing to go through lengthy bureaucratic permits and processes. By undertaking changes through a temporary approach, this provides your community some security that this 'change' is not permanent and helps resist change. This approach may also seek to protect your organisation from any political and community backlash, as these changes are not considered permanent given that the original place can be reinstated if need be.

*"Urban design is the stage,
Placemaking is the show"*

3.4 How do you measure the 'sense' of a place?

In many cases, the sense of place is often intangible, whereas the economics is tangible. Having the ability to measure the value of a place, can assist with understanding what is important to the people who use the place to assist with facilitating appropriate community projects and initiatives. The ability to measure the value of Placemaking can also help to seek funding for projects and justify initiatives in both a quantitative and qualitative manner – particularly useful when seeking funding from government agencies or businesses to help deliver these projects.

Australian Placemaking consultancy, Place Partners, has established a measurement tool that seeks to overcome the objective versus subjective and numerical versus descriptive research nature. Place Partners outlines that when trying to find out what makes a good place, it is important to clearly identify 'what you are trying to find out'. These could be either the:

- Attraction: why do you want to go here?
- Attachment: why we stay?
- Place value: the return on investment

When collecting data, Place Partners state that it is important to clearly define the methodology and define the area you seek to survey or measure. It is important to be systematic in your approach and obtain representative data from the time of day/night and week/weekend you are studying. It is key to avoid extreme weather conditions or public events and be cautious of any irregular events, such as markets, that may skew the data.

The Australian organisation, Placescore, is a place experience (PX) diagnostic engagement, benchmarking, tracking and marketing business that establishes a benchmark for what your community care about ('Care Factor'), and allows you to find out how a particular place rates against that benchmark.

A study conducted by Place Partners at Circular Quay and Martin Place in Sydney sought to identify what criteria contributes to making these places attractive to the people who use them. The study found that at this location, most people appreciated a place to sit (79 per cent), the identity/character (73 per cent) and the community feel (68 per cent) as the top three factors that made these places desirable. Other factors that contributed to a good place were landscaping, events, food options, public art and retail options [placepartners.com.au]. These top three factors will commonly feature as the main reasons as to what makes a good place for many public places.

Placemaking in Suburban Chicago

In the Village of Midlothian in suburban Chicago, a team of community volunteers made up of local residents, established the RainReady Midlothian Plan in partnership with the Centre for Neighbourhood Technology (CNT). First initiated by the Floodlothian Midlothian community group (initially established to address constant local flooding), the Plan aims to help the Village improve stormwater management, economic opportunity and city beautification. To support improvement projects, the Village also established a Complete Streets Policy in 2016.

Core to this initiative, the community and volunteers participated in a Placemaking exercise to help create a community garden space on a former derelict car park alongside Midlothian Creek and a major commuter rail line. This was funded through local donations of money, materials and labour. The 'Rain Ready Community Garden' is now a place in the neighbourhood where people can gather and be involved in social interaction and help create their own landscape art to contribute their individuality to the community space.

In measuring the benefit of this (and other associated flood-mitigation projects in the neighbourhood), CNT engaged engineers to demonstrate the amount of rainwater diverted due to the deployment of rainwater gardens, which gaged (quantified) the monetary value of what damage this additional water flow would of caused to surrounding public infrastructure and homes if the rain garden was not created.

The photos below demonstrate some of the art and craft that residents created, and provides as a successful example of community resilience and collaboration contributed to by urban design through a people-focused approach.



4. STREETS FOR ALL MODES

Streets need to cater for many different modes of transport, and serve a multitude of purposes within our community – not just to cater for the needs of the automobile. This chapter highlights each of the

“We are all a pedestrian before we get into our cars, onto our bikes or board public transport”

different modes – pedestrian, cyclists, public transport and general vehicles – and other purposes beyond transport such as dining, public spaces, landscaping and water management – that should all be considered as part of a Complete Street or Placemaking initiative to retrofit suburbia.

4.1 Streets for People

A key motivator to improve the street for people, centres on the objective of pedestrian safety. Many local streets have formally been designed to safely convey motor vehicles, and may not have previously regarded as a high priority, the safety of people (as pedestrians) using this street. In some suburban streets, there is often very little or no safe space provided for pedestrians by way of footpaths or safe opportunities to cross the street. An aspect of applying a Complete Street is to address this lack of priority to the pedestrian.

A key element of a Complete Street, is to create a safer environment for pedestrians through better design. It seeks to design the street to restrict vehicle speeds and prioritise the pedestrian – particularly when crossing the road – with the purpose of creating a safe and inviting pedestrian environment that may help contribute to making the street a more vibrant, social and interactive space and help stimulate economic activity in commercial or retail precincts.

In 2014 throughout the United States, 4,884 pedestrians were killed by a car while walking – an average of 13 people every day [Source: Dangerous by Design, Smart Growth America, 2016]. Throughout 2017 in Victoria, 31 pedestrians were struck and killed on our roads – representing 12 per cent of the total 257 people

Both the University of Toronto and Ryerson University in Ontario, converted former streets into pedestrian zones, through the use of temporary materials such as planter boxes, portable street furniture and seating, and community amenities such as basketball rings – to improve pedestrian safety and provide a public community space for people to interact and socialise.

This is an effective and low cost measure to achieve temporary Complete Street objectives.

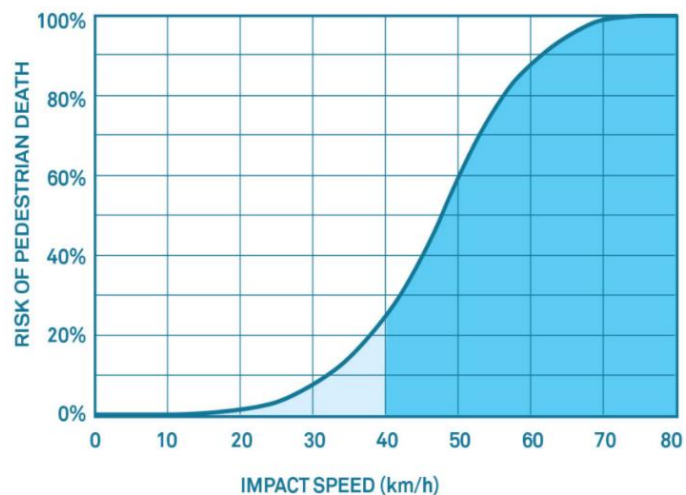


This image is of Willcocks Street within the University of Toronto’s St George Campus.

killed in traffic accidents in that year, with almost 220 other pedestrians admitted to hospital (for more than two weeks) with serious injuries. That is 31 people who lost their lives – someone’s parent, child, grandparent, cousin, family or friend killed while walking within the street environment [Victorian Transport Accident Commission (TAC), 2017].

In 2015, sixty (60) per cent of pedestrian fatalities occurred on roads signposted at 60km/h or lower [Victorian TAC, 2017]. One-third (33 per cent) of these were aged 70 or over – a disproportionate number of this demographic given that elderly people over the age of 70 account for only 10.7 per cent of the total Victorian population [2016 Census, Australian Bureau of Statistics, 2016].

As demonstrated by the associated table [Courtesy of NACTO], the risk of death to a pedestrian when they are impacted by a vehicle travelling at 30 km/h, is less than 10 per cent. However, this risk increases considerably to 25 per cent when impacted by a vehicle travelling at 40 km/h. Beyond 50 km/h, the risk of death to a pedestrian increases significantly to 60 per cent. Beyond 60 km/h, the risk of death is almost inevitable (hence current state road rules to limit vehicle speeds on local streets to a maximum of 50 km/h and 40 km/h around school zones).



The Global Designing Cities Initiative, a program of NACTO, identifies the following common causes of pedestrian traffic fatalities, of which most are directly related to the design of the street environment with conditions becoming more dangerous with the addition of vehicle speed:

- Lack of sidewalks (footpaths)
- Lack of accessible crossings
- Lack of protection
- Lack of predictability
- Lack of cycle facilities
- Poor intersection design
- Unsafe public transport boarding areas
- Surface hazards

“People-traffic and car-traffic are diametrically opposed in their needs and design requirements from our streets”

Therefore, a key element of Complete Streets seeks to make local roads safer for not only the pedestrian, but for all other users as well, including cyclists and the motorist. The design and function of a street will significantly defer when designing a street for a pedestrian versus a motor vehicle.

As a pedestrian, low scale and street level design are important to promote an environment that is hospitable and one that caters for pedestrians – who travel at a significantly lower speed than motor vehicles and are more vulnerable to impact. The consideration of visual sightlines, vegetation buffers,

tree canopy, social interaction, the perception of safety, comfort and shelter are all important aspects that contribute to accommodate for a pedestrian and provide a feeling and sense of safety and place within our streetscapes. This is particularly important for more vulnerable members of our community such as the elderly, children and people with mobility limitations.

Transitioning streets to become a Complete Street can provide the tools for achieving targets and objectives to improve pedestrian safety within our street environment and focus towards reducing vehicle speeds in suburban environments.

4.2 Streets for Cyclists

Cycling has the potential to provide an environmentally friendly, healthy, low cost, and enjoyable transportation option to people of all socio-economic or demographic backgrounds. Some of the holistic benefits of cycling include:

- **better physical health:** through increased cardiovascular fitness and muscle strength;
- **reduce personal finances:** household transportation costs can be reduced as cycling provides an alternative to car use or car ownership;
- **better mental health:** reduce stress levels by partaking in active outdoor activity and provides for an alternative option of transport and greater accessibility;
- **improve urban design:** can transform urban spaces away from car-dominated uses;
- **environmental:** can reduce traffic congestion, greenhouse gas emissions and contribute to achieving climate change objectives;
- **economic:** stimulate local businesses by transporting the customer ‘straight to the door’;
- **social equity:** is generally affordable and available to all members of the community to partake;
- **safety:** contributes to active surveillance within our streets;
- **personal development:** can help build spatial skills and encourage independent thinking and actions in children and from our youth.

In the United States, Canada and Australia, the popularity of cycling is continuing to grow exponentially, and city planners are now required to cater and plan to accommodate for safer and equitable access on the road network to cyclists. A key aspect of Complete Streets, seeks to allocate a safe space (through on-road bike lanes either as shared or dedicated spaces) and provide adequate bicycle infrastructure such as bike parking, bicycle repair infrastructure or encourage end-of-trip facilities within new or existing developments (such as showers, lockers or storage).

Throughout 2017 in Victoria, 12 cyclists were struck and killed on our roads – representing 4.7 per cent of the total 257 people killed in traffic accidents in that year (given that cycling only accounts for 1.4 per cent of mode trips) [Victorian TAC, 2017].

A study conducted by the New York City Department of Transportation (NYCDOT) found that protected bike lanes (those that provide a buffer between cyclists and moving traffic), reduced injuries to cyclists by 20 per cent and reduced the average risk of serious injury to cyclists by 74 per cent, based

on data collected between 2001 to 2013 [P. Trottenberg, Protected Bicycle Lanes in NYC, NYCDOT 2014].

Throughout the US, separated bike lanes are still quite rare, as painted lanes are far cheaper to install. However, that is slowly starting to change according to the Green Lane Project (a coalition of bicycling suppliers and retailers), as between 2011 and 2016, the number of protected bicycle lanes in the US quadrupled.

Accommodating cycling infrastructure (such as bike lanes) as part of a Complete Street, can assist to increase cycling ridership if the necessary facilities are provided on a street that was previously uncomfortable for cycling. Where cyclist volumes are already growing, cities could consider widening existing cycling facilities, to improve mobility, safety and support the growing traffic volume – much in the same way that we keep adding lanes to a freeway to accommodate (or induce) growing traffic demand.

Between 2000 and 2015, the proportion of people who cycle to work in the United States significantly increased by 46.7 per cent [American Community Survey 2015, The League of American Bicyclists]. In

Australia, more than 100,000 people now ride to work – an 8.8 per cent increase between 2011 and 2016 based on the latest ABS Census data [SGS Economics and Planning, 2017].

In Metropolitan (Greater) Melbourne, cycling now accounts for 1.4 per cent of all trips to work, almost on par with the number of trips taken by bus (1.5 per cent), having grown 202 per cent since 2001. More locally, the inner-city areas of the City of Melbourne and Moreland have both experienced a 277 per cent growth in cycling between 2001 and 2016. Other areas such as Darebin, Yarra and Port Phillip have experienced a growth of 223 per cent, 169 per cent and 147 per cent respectively during this time [ABS, 2016]. It is likely based on these trends, that cycling will continue to grow into the future [ABS Census, 2016].

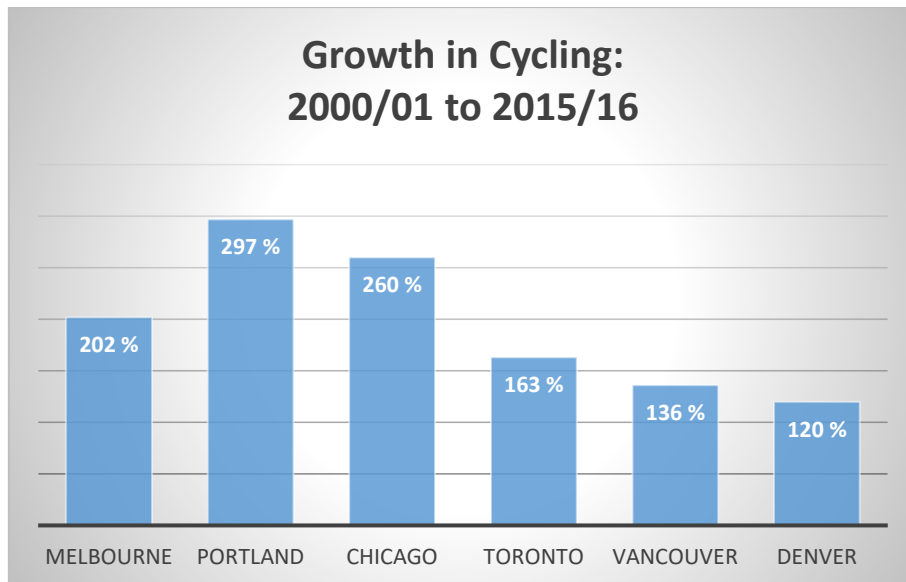
In recent years in Melbourne, the popularity of cycling as a primary mode of transport has also increased substantially, as Melbourne has become Australia's ride-to-work capital. According to the 2016 Census data, 29,000 people commuted to work by bike, representing 27 per cent of the national total and almost double that of the next largest proportion of city commuters – Sydney. In Melbourne, the average cyclist lives within 4-8 kilometres of the CBD (i.e. within a 30 minute commute), with the suburbs of Fitzroy North, Carlton North and Brunswick East being among the suburbs with a largest share of bike commuters [SGS Economics and Planning, 2017].



An example of holistic cycling infrastructure in Kissimmee, Florida – that provides bicycle locking hoops, a repair station with the core tools including a tyre pumping hose, spanners, wrenches, Allen keys, screwdrivers and a drinking fountain.

This growth in cycling in Victoria heralds a new age of how we travel about our cities and towns and illustrates the importance of catering for cycling (not only for commuting, but for recreational purposes too). It is therefore important, through implementing Complete Street principles, to safely cater for, and encourage cycling in our urban areas.

Over the past two decades, many cities across Australia, the US and Canada have experienced significant growth in cycling, as a mode of commuting to work, as illustrated in the following table:



Portland, Oregon has lead this growth, as between 2000 and 2015, the number of people who cycled to work increased by 297 per cent. As of 2015, 7.2 per cent of commuters travel to work by bike [Portland Bureau of Transportation, 2017], representing the highest percentage of bike commuters for a large American city, with more than 17,000 workers choosing to ride to work. During this same time, the rate of severe injuries or fatalities per 100,000 trips dropped 72 per cent as the City’s bike network grew by 53 per cent [J. Purcher and R. Buehler, Safer Cycling Through Improved Infrastructure, American Journal of Public Health, 2016].

This level of growth, and anticipated future growth in cycling, necessitates the need to cater for cyclists – particularly through Complete Streets initiatives. Although many cities can often quantify the number of people who cycle for commuting purposes, it is however considered particularly difficult to measure the number of people who cycle for recreation purposes, or to clearly understand the psychology and barriers that prohibit people from partaking in any form of cycling – so as to target these future cyclists.

To further understand where and who to target in encouraging cycling, research undertaken by the Portland Bureau of Transportation in 2006, identified four key types of cyclists [Geller, R. (2006) Four Types of Cyclists], and separated them into the following four categories:

1. **The ‘Strong and the Fearless’** – those who would ride “regardless of roadway conditions” and take a “strong part of their identity” from riding a bicycle;

2. **The ‘Enthused and Confident’** – those who are comfortable riding on a road with automobiles, but “prefer to do so operating on their own facilities” and appreciate efforts made to improve the bikeway infrastructure.
3. **The ‘Interested but Concerned’** – these people are curious about bicycling, “like to ride, but are afraid to do so and therefore do not regularly ride” and “will not venture out onto the arterial roads”.
4. **The ‘No Way No How’** – this group of people are not going to ride a bicycle “for reasons of topography, inability, or simply a complete and utter lack of interest”.

As illustrated in the following image, the majority of people (60 per cent) as a proportion of the population of Portland fell within the “Interested but Concerned” category. These residents are curious about cycling but are afraid to be in the roadway on a bicycle due to the perceived (or real) safety concern of sharing the road with high volumes of fast-moving traffic.

Four Types of Transportation Cyclists in Portland By Proportion of Population

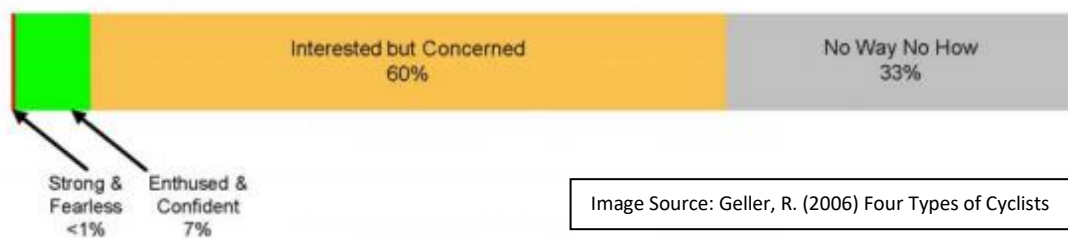


Image Source: Geller, R. (2006) Four Types of Cyclists

The application of Complete Streets can help promote an environment that caters to the “Interested but Concerned” cycling demographic (amongst others), by providing for safer and dedicated cycling infrastructure and reducing traffic volumes and speeds on identified cycling streets. The City of *Manningham’s Bicycle Strategy 2013* has adopted the objective to focus keenly on encouraging the “Interested but Concerned” members of its community to take up cycling as a safe and sustainable alternative form of transport, in particular for short trips of less than five kilometres.

Throughout the study tour, it was considered at times by some organisations that you do not need to provide the bicycle lane (green) pavement marking upfront if this will significantly impact your budget. Omitting this feature from initial bike lane projects can help stretch your budget to allow you to deliver more bike lanes. Once a bike lane is considered successful, you can then install pavement marking at a later stage. It was found that this approach allowed bike lanes to appear less permanent at the onset to help address community push-back of initial projects. Although, the green pavement marking serves as a useful feature in busy downtown or suburban areas as a prompt or guide to pedestrians who were busy looking down at their mobile phones – allowing them to realise that they are approaching a bicycle lane in order to alert them to look up and become aware of the changed pedestrian environment.

The Growth of Cycling in Chicago

Chicago ranks as the 13th largest city in the US for cycling commuters with 1.8 per cent of Chicagoans commuting to work by bike – a growth of 260 per cent between 2000 and 2015. In 2016, Bicycling Magazine named Chicago as the most bicycle friendly city in the USA – achieved by the City Mayor Rahm Emanuel’s *Chicago 2011 Transition Plan*, which emphasised building infrastructure that separates cyclists from motorists (100 miles of bike lanes) by 2015. According to the Chicago Department of Transportation (CDOT), since 2011, about 238 kilometres (148 miles) of bike lanes have since been added in Chicago, including 174 kilometres (108 miles) of barrier or buffer-protected lanes.

This growth and uptake of cycling in Chicago has also been attributed to the successful implementation of the Divvy bike share program, which now provides over 580 stations and 5,800 bikes in locations that extend as far as 15 kilometres in all directions from Downtown Chicago. Since launched in 2013, Divvy has become the third most popular bike share program in the United States, behind those of Washington DC and New York City (Note: the use of helmets are not compulsory in the State of Illinois).

In 2016, there were over 34,000 Divvy members, and the use of their bikes grew 14 per cent that year – particularly as the program extended to less affluent areas of the city where CDOT started the ‘Divvy for Everyone’ program, which subsidizes bike-share memberships for low-income residents given that 12.7 per cent of Chicagoans (or 135,000 people) don’t have a bank account (Divvy requires a debit or credit card to sign up) [Carney, M. Collage or Urban Planning and Public Affairs, University of Illinois].

In locating bike stations – Divvy infrastructure (the 13 metre long ‘docking station’ for 15 bikes – the length of two parallel car parking spaces) has been designed to be portable and removable. This allows stations to be located on the roadway (parking bay) rather than within a sidewalk and allow them to be shifted throughout the City to promptly respond to demand and to provide new stations in various locations without having to undergo expensive installations or obtain time consuming permits or approvals. The following images are examples of recently installed bike infrastructure in Downtown Chicago that has helped support this recent growth in cycling:



4.3 Streets for Public Transport

Public transport is once again gaining supremacy in many major cities around the world (since reaching record lows in the 1980s and 1990s), and provides for an efficient and mass option of transporting large volumes of people. In Melbourne, public transport use has continued on a growing trajectory since the 1990s, with 15.4 per cent of people who travel to work, now doing so using public transport [2016 Census, Australian Bureau of Statistics].

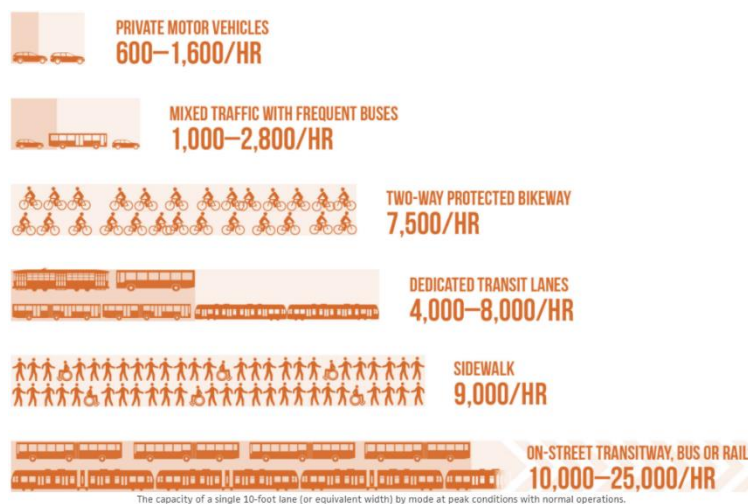
“Building a bigger road to cure traffic is like buying a bigger belt to cure obesity”

Bus patronage across Metropolitan Melbourne has experienced a considerable increase over the past 10 years, with patronage steadily growing at 4.5 per cent per annum from 79.13 million trips in 2005 to 122.5 million trips in 2015 [Public Transport Victoria, 2016]. A recent study commissioned by Infrastructure Victoria predicts that by 2030, there will be an extra 3.5 million trips everyday across Melbourne’s transport network with train, tram and bus trips to grow by 75 per cent [Travel Demand and Movement Patterns Report, KPMG and ARUP (December 2017)].

“Public transport is not purely about moving trains and buses – it’s about moving people”

To provide for adequate public transport amenities and services, many Complete Streets seek to prioritise bus, tram or light rail transport ahead of general vehicles and parking – particularly on streets where there are a greater number of transit users seeking to access adjoining land uses. The purpose of catering for public transport as part of a Complete Street is to design better streets for better public transport services to move more people, than more vehicles, with an emphasis on improving frequency, reliability, mobility, safety and efficiency for public transport users.

Shifting trips to more efficient travel modes is essential to improving the performance of limited street space, as public transport provides the highest capacity for moving people in a constrained space. The following figure illustrates the number of people who can be moved along a corridor by different modes of transport to demonstrate the importance and priority that public transport should have within a street environment [Transit Street Design Guide, NACTO, 2016].



To prioritise public transport, the redesign of Complete Streets should consider incorporating a number of infrastructure elements, including dedicated bus lanes or light rail lines, prominent stops with accessible platforms, passenger amenities such as shelter, seating, lighting, off-board

ticketing/fare payment facilities, passenger information (timetables or real-time), wayfinding signage and passenger queue management features.

To prioritise public transport within a street, the NACTO Transit Street Design Guide recommends the use of ‘in-lane stops’ – which involves using passenger boarding islands or ‘bulbs’ to allow public transport vehicles to stop in their moving lane, rather than to pull off into kerbside bays or indents. The benefit of this is that transit vehicles are not required to merge in and out of traffic – eliminating the delay and minimising vehicle conflict.



In Victoria, these concepts are often referred to as Super-stops on the tram network, and are already featured at many SmartBus bus stops – particularly along the four Doncaster Area Rapid Transit (DART) corridors. It is considered that the incorporation of both in-lane stops and dedicated bus lanes along DART routes has partly attributed to an average 54 per cent growth in weekly bus patronage (in the five years between 2010/11 and 2015/16) across all four routes, as buses are no longer required to negotiate their way in and out of general traffic along their service route – saving valuable minutes and contributing to a more efficient and dedicated on-road public transport system [Manningham Bus Network Review, Manningham City Council, 2017].

The City of Darebin stated that as part of the prioritisation of tram route 86 (through the application of various Complete Street measures) along a seven kilometre stretch of High Street and Plenty Road in Northcote, Thornbury and Preston, Complete Street features have the potential to decrease the travel time for 15,000 users by up to 25 per cent or six minutes in travel time [Improving High Street and Plenty Road for all Users, Darebin City Council, 2009]. This demonstrates the benefit that Complete Street features can have in improving existing public transport infrastructure by retrofitting an existing streetscape to prioritise tram travel along a corridor and promote greater pedestrianisation around tram stops along the retail strip.



To promote and facilitate bus priority within a Complete Street, NACTO recommends the use of a bus lane (red) pavement marking to clearly delineate and emphasize dedicated bus lanes to deter general motorists from using them. Separation of the dedicated bus lanes through the use of soft

barriers (i.e. rumble strips) and/or hard barriers (concrete kerbs) should be considered to reduce encroachment from moving vehicles. When compared to the private motor vehicle, public transport

has the potential to move more people more regularly and therefore priority should be given to public transport, particularly through intersections. This can be achieved with a combination of the use of traffic signal prioritisation, bus lanes and traffic separations [Transit Street Design Guide, NACTO, 2016].

King Street Streetcar Transit Pilot – Downtown Toronto

In late 2017, the City of Toronto in partnership with the Toronto Transit Commission (TTC), implemented a pilot project to improve priority and travel times for streetcars (trams) along a 2.6 kilometre stretch of King Street in Downtown Toronto. King Street (similar in characteristic to Melbourne’s Collins Street) serves as the busiest streetcar corridor in the City – carrying over 65,000 people per day along with 20,000 vehicles a day.

The King Street project was built using temporary materials such as painted concrete dividers for a budget of around US\$1.5 million to help the City try out new ideas, quickly and cost-effectively, and learn what works and what doesn’t. The redesigned street allows drivers to continue to travel on King Street to access local businesses, parking garages and apartments and offices, and maintains designated passenger loading zones and taxi stands. However, the changes now restrict through-travel.



Within the first two months, the trial has produced successful results and helped boost streetcar ridership dramatically – up 25 per cent at peak hours – with TCC confirming that this increase in ridership has not come at the expense or siphoning of patronage from other nearby public transport services (bus, streetcar or subway). Travel times improved by 16 per cent – reducing travel time by four minutes along the 2.6 kilometre length of the trial area. Reliability is up too – the number of trips with delays has fallen 33 per cent.

The Pilot is due to be evaluated after one year, in which at this time, the City will collect data on pedestrian activity and sales data for nearby businesses. To date, recent polls indicated a strong public support for the pilot project.

In Victoria, many suburban commercial streets already cater for public transport, particularly trams (such as Sydney Road, Brunswick or High Street in either Armadale, Northcote, Malvern etc). However, in many cases, public transport is not highly prioritised and tram services in particular are subject to extensive delays caused by having to share the road lanes with general vehicle traffic. In Melbourne, 75 per cent of the 250 kilometre tram network operates on shared roads with other vehicles, with the average speed of a tram being 16 km/h. In the CBD, the average speed is a mere 11 km/h, which is similar to the average pace of a person jogging [Yarra Trams, 2017].

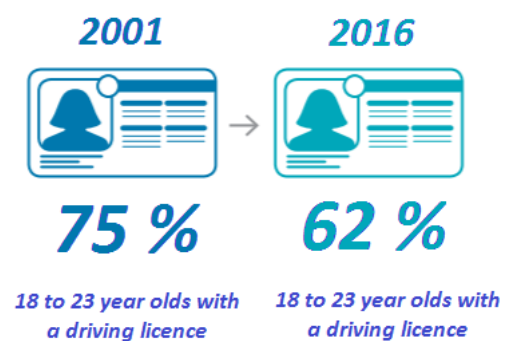
The application of Complete Street principles seeks to emphasise the importance of transitioning our streets to better cater for and prioritise public transport services so as to achieve reliability objectives.

4.4 Streets for Conveying Cars

It is acknowledged that the prioritisation of every street or road should not detract from the intended nature of what many streets were initially designed for – to convey vehicles. Not every street can, or should, become a Complete Street as many streets may still need to serve the primary purpose of moving vehicles. Driving still dominates as our main mode of motorised transport, as driving still accounts for more than 70 per cent of all trips in Melbourne [ABS, 2016].

However, numerous factors will potentially influence the level of driving that will occur in society over the coming decades, such as the advent of automated vehicles and technological advances in transportation, a shift to ride or car sharing, the growing impacts of traffic congestion, the cost of owning and running a vehicle, growing pressures to reduce carbon emissions and meet climate change objectives and a greater appreciation to preserve our cities as places for people.

According to the Monash University Research Centre, the proportion of young Victorians who have a driving license has continued to decline (based on VicRoads driver registration data). In 2001, 75% of 18 to 23 year olds and 93% of 24 to 30 year olds had a provisional or full driving licence. In 2016, this declined to 62% and 82% respectively [Monash University Accident Research Centre, 2016]. These figures may indicate that more and more young people are reliant on public or active transport for their travel needs.



The objective of considering a Complete Street concept is to recognise the importance that other modes play as part of the wider transport system, and how these other modes need to be accommodated for in our suburbs (notably, vulnerable modes such as pedestrians and cyclists). It also seeks to recognise the importance of designing the street to provide a safer environment for all users, including the motorist. The application of road dieting measures is often a method that can be applied to balance the objectives of catering for the car, yet address general safety issues in the streetscape.

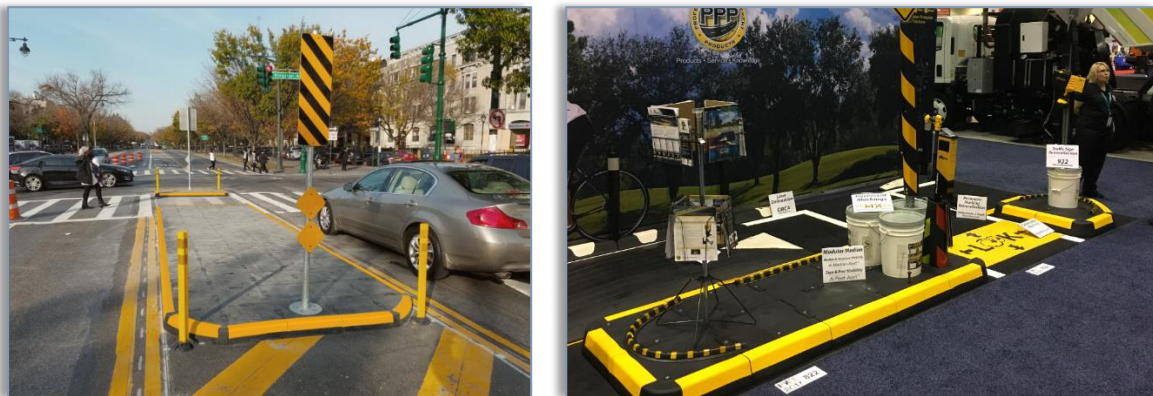
To understand the current demand and use of a street by vehicles, daily vehicle volume surveys should be conducted. A common challenge of applying a Complete Street approach, is to balance the

traditional need for a street to convey vehicles (including for freight movement, delivery and loading), and the benefits that can be achieved if a street is transformed into a Complete Street that caters for pedestrian, cyclist or public transport traffic. With the growth of the ride-sharing movement such as Uber and Lyft, consideration should also be given to accommodate places for ride-sharing vehicles to stop and collect or alight passengers, as well as for traditional taxis, as although these are motor vehicles; they do indirectly contribute as part of a public transport system.

Where it is deemed appropriate, measures should be taken to encourage motorists to drive at a reasonable and safe speed by constricting the road environment or introducing traffic-calming measures. For a Complete Street project where the roadway still needs to perform the function of conveying vehicles (i.e. for through-traffic), the use of temporary road calming devices can be considered to encourage motorists to reduce their speed, particularly below the critical 50 km/h limit (as outlined in Section 4.1 of this report), so as to maintain a safe environment for pedestrians and other road users.

The use of temporary road calming devices that are cost effective to install, such as a typical refuge island with rubber raised kerb and reflective signage can be purchased for USD\$2,500 per unit. Many cities and in particular, smaller regional counties or municipalities in America utilise such temporary treatments given the constrained budgets of smaller local authorities to implement more permanent and expensive infrastructure changes.

Examples of temporary traffic calming devices are illustrated in the figures below:



Generally, local government has the authority to repurpose its local streets to enable Complete Street projects. However in many cases, approval and support is needed from regional road authorities (such as VicRoads) to change or shift key arterial road functions. To support a transition of the traditional street to a Complete Street, it is encouraged that local or state authorities develop relevant Complete Street policies or strategies to justify or outline a process for how to apply such changes.

4.5 Streets for Parking Cars

Beyond the purpose of conveying vehicles, streets are often traditionally designed to also cater for parking vehicles. Parking can often be regarded as one of the largest single land uses in our municipal 'footprints' – and areas with large supply of parking can influence the character form, function and

flow of a street – often creating areas that are not conducive to, or prioritise pedestrian amenity and safety. It is often acknowledged that vehicles are on average parked for 95 per cent of the time – therefore only utilised for five per cent of the day.

In a future of autonomous vehicles, or where automobiles become a shared mobility resource that are on the road, rather than in a parking lot for most of the day, parking demand might dramatically decrease. The owners and managers of fleets of autonomous vehicles would store and maintain them in a limited number of centralized facilities, in much the same way as public transit vehicles are stored and maintained today. In such a scenario in which 100 per cent of our vehicle fleet is shared, it could be estimated that parking demand would decrease by 80 per cent [Autonomous Vehicles and the Future of Parking, Nelson Nygaard, 2016]. A 2015 study by the National League of Cities found that only six per cent of cities' long-range transportation plans acknowledged the prospect of autonomous vehicles for their city.

In retrofitting existing streets to accommodate other uses, typical on-street parking spaces or kerbside traffic lanes can be converted to provide improved pedestrian amenities such as wider footpaths (in high-traffic pedestrian areas), outdoor dining parklets or vegetation buffers between footpaths and the roadway. Or, they can be converted to serve as a dedicated bus or bicycle lane, or parking spaces designated to host food trucks or vendors that activate street life and create a destination within the street.

The reallocation of on-street parking is often the most common and useful aspect to consider in order to accommodate a Complete Street initiative (either as a temporary or permanent measure). To address the issue of loss of parking, effective parking management (often through the development of parking strategies) can help identify the need for parking and determine how to reduce the number of spaces or help use existing spaces more efficiently.

In many examples of Complete Street projects, the displacement or loss of what is perceived to be convenient car parking within business districts, has the ability to derail the successful implementation of Complete Street projects. This is particularly prevalent with local business owners who perceive (often misguided) on-street parking as critical to the success and operation of their businesses.

In order to address this, the wider benefits (notably economic) needs to be clearly demonstrated to the business owners and other objectors to illustrate the positive aspect that Complete Streets can have – notably to boost pedestrian activity and thus stimulate greater economic investment. In some cases, parking spaces may need to be offset in alternative locations, such as at the rear of a shopping strip or a local parking garage. This is particularly prevalent with the removal of paid parking spaces from a local street, as many local authorities often rely on the income of on-street parking to supplement their city-budgets. In these cases, alternative locations could be considered, or, a decision that the wider economic benefit that a Complete Street can generate to the local economy, can offset the loss of parking income.

Chapter 9 of this report – Measuring Success – further outlines measures that can justify and support these changes through the use of quantifiable evidence.

Where to locate displaced car parking

It is not always the case to offset the loss of on-street parking, space for space. The concept of a Complete Street is intended to support new universal thinking that parking availability within very close proximity to businesses, is not always vital to their success and operation. A Complete Street aims to create an environment where people are attracted to stay and linger – where once, there was no purpose or place to do so.

Some of the alternative ideas that can be considered for addressing car parking (particularly the displacement of car parking) to help facilitate a Complete Street project include:

- To consider the incorporation of short-term parking bays (i.e. 5-15 minutes) to provide ample parking for people who are genuinely seeking to pop in and out of a shop or business for a short period of time.
- Contain the availability of parking for Car Share vehicles only – to promote and cater for this alternative and more sustainable method of vehicle use.
- Locate offset parking at the periphery of the Complete Street area (within 800 metres) and create safe and clearly defined access and paths to encourage people to walk to their final destination.
- That local council consider subsidizing the cost of building a parking garage (building) in another location within proximity to a Complete Street, while charging for more convenient on-street parking and using the meter revenue to help pay for the garage.
- Explore the option of ‘shared parking’ – where the use of existing parking spaces (sometimes on private land) can serve two or more individual uses without conflict or encroachment. For example, office parking is normally used on weekdays during the day, whereas in the evening and weekends, parking demand is created from people seeking to access dining and entertainment venues in the same location. These opposing demands can utilise the same parking spaces at different times of the day and week.

These ideas are sourced from, and are further detailed in the *Parking Strategies to Support Liveable Communities, 2012* document produced by the Chicago Metropolitan Agency for Planning (CMAP).

It is acknowledged that parking-rate requirements are stipulated in the Victorian Planning Provisions (at Clause 52.06 or through local parking strategies or overlays). However, each local council has the authority to review and advise parking requirements at their discretion. Consideration to encourage alternative parking requirements and arrangements should be supported by appropriate Car Parking Demand Assessments.

4.6 Streets for Dining and Seating

In many commercial streets that include cafes and restaurants, the opportunity to provide outdoor dining facilities is not always available within the space of the existing footpath reservation. In these cases, Complete Streets encourages the use of ‘parklets’ (also referred to as street seats, people spots or kerbside seating), which can be used to convert kerbside parking spaces into additional seating or

dining areas – often with a distinctive design that incorporates local characteristics (materials, finishes and vegetation) that serves as a focal point for the community and a welcoming public gathering place.

A parklet is a footpath extension that provides more space and amenities for people using the street. Usually parklets are installed on parking lanes and use several parking spaces. Parklets typically extend out from the footpath at the level of the pavement to the width of the adjacent parking space and can vary in size.

“A Parklet – When a parking space dies and goes to heaven!”

San Francisco has been leading the parklets initiative through its ‘Pavement to Parks’ movement – with over 50 parklet projects now delivered throughout the City since 2006 either through local not-for-profit groups, local businesses or other neighbourhood groups. The images below are some examples of parklets throughout the City of San Francisco [Photo Source: sf.curbed.com]. The *San Francisco Parklet Manual 2015* serves as a useful tool to encourage and support the wider implementation of parklets in neighbourhoods throughout the City [San Francisco Parklet Manual, City of San Francisco, 2015].



The City of Toronto is also encouraging the use of parklets in their downtown and inner-city streets to meet demand for outdoor café seating where sidewalk widths are restricted or where heavy pedestrian traffic occurs (particularly in locations where footpath space cannot be afforded to be removed as they serve as valuable space for pedestrian movements). Parklets can also serve to attract passers-by to dine and can be provided as temporary structures allowing them to be put away in the winter months. These objectives are supported by the City’s *Toronto Complete Streets Guidelines, 2017*.

The cost of a parklet can vary considerably from hundreds to thousands of dollars depending on the size, material or associated assets being considered. The provision of parklets have the ability to stimulate economic activity and can benefit local business owners by encouraging greater pedestrian activity and social interaction in the area. Parklets provide local Placemaking opportunities, whereby, the local community or shop traders can design and decorate a parklet to reflect their local neighbourhood character.

The development of parklets can be provided through partnerships between council and local property owners, businesses or community associations. This is a particularly useful approach to address installation and maintenance matters whereby the benefiting business (or businesses) fund the installation and maintenance of the infrastructure, rather than the expense attributed to by

council. In some cases, municipal authorities can fund (through local grants) the installation of parklets to help stimulate or encourage economic activity in the streetscape and is considered a Complete Street element that can be applied in both city and rural environments, and one that does not have to be a permanent feature. Parklets can be first ‘trialled’ and used only during popular summer months if required.

It is however important to ensure that privately funded parklets are maintained for public use, given that parklets are often constructed on what is public land (footpaths or road reserves).

‘People Spots’ in Chicago

In 2014, the Chicago Metropolitan Planning Council (MPC) and Sam Schwartz Engineering undertook a survey to understand and observe the benefit that parklets had around Chicago. They observed 450 visitors at Chicago’s nine ‘People Spots’ (parklets), interviewing 100 people and 40 adjacent business owners about their perception and experience of people places.



The study found that 34 per cent of visitors made spontaneous food or beverage purchases when visiting these areas, with business owners noting a 10 to 20 per cent increase in sales. Eighty per cent of businesses said people spots contributed to an increase in foot traffic, with some local business owners referring to parklets as “Instagram heaven” – which has helped to promote their business on social media. The findings also show that these people spots are not only well used by pedestrians, but can be a powerful economic tool for neighbourhood businesses [Chicago MPC, 2014]. The above images are courtesy of the City of Chicago.

Outdoor Dining in the City of Hamilton, Canada

The City of Hamilton, in southern Ontario, Canada (Pop: 552,000), recently established a by-law (Municipal Local Law) to allow for commercial entertainment/recreation, including live or recorded music and dance facilities on Outdoor Commercial Patios for seven pilot project areas in Downtown Hamilton.

The City's On-Street Patio program allows for local businesses to establish temporary seasonal patios and seating areas (two-year permit) utilizing on-street parking spaces within identified areas of the Downtown precinct – to help revitalise local businesses and stimulate economic activity, promote food, beverage and entertainment venues and boost tourism to the region.

The City has found this to be a very effective way of providing additional outdoor seating (seasonally if required) to meet demand, in a manner that can be regulated and controlled by the local authority to ensure that it does not impede valuable sidewalk space or constrain pedestrian movement.

Business owners are supported in this process by the local Evergreen Hamilton Community Storefront – a Canadian charity which works to transform public landscapes into thriving community spaces with environmental, social and economic benefits as part of the wider revitalisation of the City of Hamilton, as encouraged by the *Downtown and Community Renewal Community Improvement Plan 2016*.

The development of specific policy can also assist local business owners in their decision making to understand and inform them of the process in how to pursue the installation of a parklet, so as to factor a parklet into their business and financial resource planning.



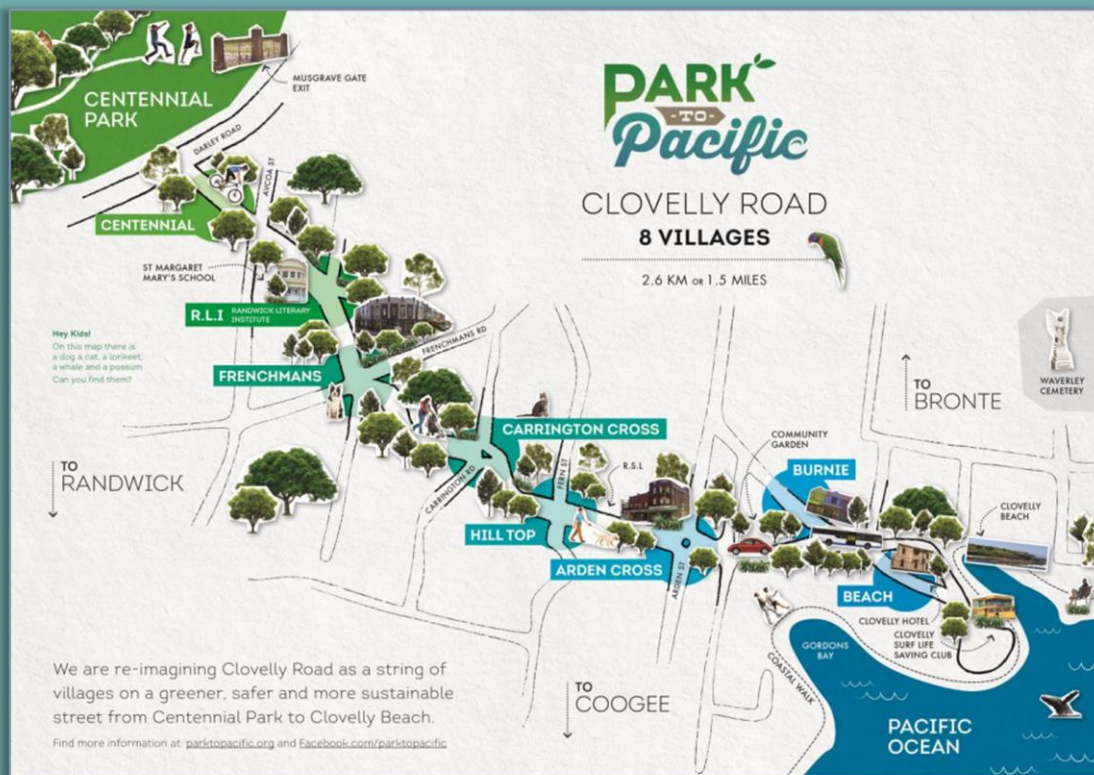
Parklet Demonstration Projects – Sydney

In the Sydney suburb of Clovelly, a 'Better Block project was undertaken in both 2013 and 2014 as part of the community-led 'Park to Pacific Project' – where for one day – trees, plants, seating, parklets, art and pop-up businesses are brought into a suburban 'block' to demonstrate how, through community collaboration and vision, can drive permanent change so that such elements could be incorporated permanently into the streetscape [parktopacific.org]. Similar demonstration projects were also successfully held in both Coburg and Geelong in Victoria.

Community feedback after the 2013 Clovelly Road event indicated that 82 per cent of the 259 people who were surveyed, said that they'd pay slightly higher council rates to make the Better Block demonstration elements a permanent feature in their neighbourhood [Sharkey, M. Clovelly Road Better Block – Feedback Report, Clovelly East Village Association 2013].

A similar parklet demonstration project in the Sydney suburb of Glebe, organised in 2016 by the Glebe Chamber of Commerce, found that trade at adjoining businesses increased by 15 per cent with all trial businesses requesting that the parklets be installed permanently [Glebe Chamber of Commerce, 2016].

Although a Better Block one-day demonstration can be considered as a local street fair event (thus encouraging higher than normal activity through higher concentrated attendance rates), it does serve as a useful example of how parklets can contribute to improving the streetscape if their installation is considered to be provided for more than a day, and offers as a successful tool in 'piloting' a parklet program.



4.7 Streets for Water and Greenery

Complete Street projects can often present as an opportunity to incorporate stormwater and green infrastructure elements as part of the redevelopment and reallocation of road space.

The incorporation and design of ‘green infrastructure’, such as street trees, bioretention planters or swales and permeable paving (as illustrated in the images below), can help to create aesthetically pleasing street environments that also perform ecological and hydrological functions, particularly in an environment where streets are abundant with non-permeable and hard surfaces. The NACTO Urban Stormwater Guide (2016) highlights the following benefits of including ‘green infrastructure’ into urban street environments, as it can:

“Green stormwater infrastructure reintroduces ecological functions back into the built environment”

- Enhance the extent and longevity of the urban forest
- Mitigate urban heat island effect
- Manage stormwater runoff to mitigate flooding and enhance water quality
- Promote infiltration to sustain shallow groundwater systems and maintain inflow patterns
- Enhance air quality
- Moderate microclimate
- Conserve / generate energy



Traditionally, stormwater management infrastructure has been engineered to move the largest volume of water as quickly as possible via underground infrastructure. As part of a Complete Street approach, green infrastructure seeks to intercept stormwater before it reaches the drain. It encourages the adoption of sustainable stormwater management methods in order to reduce ponding and roadway flooding and naturally treat stormwater and

irrigate roadside vegetation – reintroducing ecological functions back into the built environment.

The incorporation of street trees can enhance both the functionality and aesthetic of a street – providing shade to pedestrians, cyclists and diners. Trees also have the potential to slow traffic speeds, particularly when trees are placed on a kerb extension in line with on street parking by constricting the view of the street environment from the perspective of the motorist.

However, when considering the incorporation of street trees – it is prudent to consider resilient and appropriate species of trees relevant to your environment, including an understanding of the types of bird or wildlife certain trees can attract. Trees can also present maintenance challenges such as excessive leaves falling and blocking



gutters and drains, root structure and growth, water management and pollen issues. There is also a fine balance between the height and scale of trees so as to offer a suitable canopy and shade over the footpath, yet not block valuable sunlight or the view of business signage on abutting building facades.

Kerb extensions can provide much needed pedestrian space and narrow the roadway to make it easier for pedestrians to cross the street. However, they also provide valuable space in which to place trees, vegetation, public art or stormwater treatment features such as bioswales, rain gardens, flow-through planters, pervious strips or pavements to absorb rainwater and reduce the impervious surface of a street. Kerb extensions can also be provided as interim measures through the use of planter boxes or bollards as examples from Chicago, Toronto and Portland demonstrate throughout this report.

The benefit of incorporating ‘green infrastructure’ elements and tying in water management projects to your Complete Streets proposals, is that it can help maximise the overall benefit achieved through an integrated Complete Street project and potentially improve the chance of obtaining grants or funding to deliver a more holistic outcome achieved by a dual street/stormwater project.

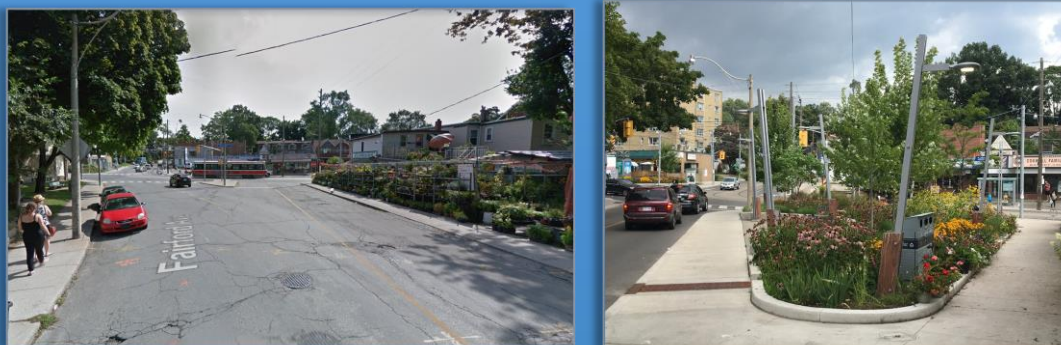
Fairford Avenue Parkette, Toronto

The Fairford Avenue Parkette, in the Toronto suburb of Upper Beaches, was a former (redundant) hard surface road space and slip lane in this residential neighbourhood. The site was first identified as a priority location for improving traffic flow and pedestrian safety, and in 2014, the City took the opportunity to retrofit it as a green infrastructure demonstration site in order to better manage stormwater run-off and acknowledge water as a resource – not as a problem.

The City of Toronto in partnership with the Toronto Water authority, repurposed this redundant and non-permeable road space into a small park and community open space (300 square metres in size) as a pilot project – part of the City’s *Toronto Green Streets* program. The parkette provides seating, lighting, lush landscape and somewhere for the community to meet and sit.

The project, which was delivered for C\$320,000 as part of Toronto’s Green Streets pilot project, contains stormwater treatment and bioretention features to serve as an urban park and provides as an example of the integration of green infrastructure within typical street elements.

The following images illustrate a before and after of the street transition.



4.8 Streets for Public Parks, Plazas and Art

Some streets have the potential to be closed to traffic altogether, either temporarily or permanently. Temporary street closures, such as for markets, play spaces, parties or street fairs, demonstrate the range and diverse ways in which a city's streets may be utilised [Urban Street Design Guidelines, NACTO, 2016].

In other cases, a former trafficable street may be considered redundant if alternative access options are available, or is considered, that the street would serve as a more useful space for another purpose, such as a plaza, meeting or gathering place, park or some form of a pedestrian-oriented purpose.

To contribute to creating streets for public parks, plazas or art, through Placemaking, streets can provide as the canvas for creating street art or a place of interest created by the community, for the community.

Often, common features and assets contained within a street environment, such as street lighting, wayfinding signage, seating, bus shelters, bins or general utility assets, can be repurposed to form as art, often using local materials or referencing a local characteristic or the heritage of the neighbourhood.

The benefit that a Complete Street initiative can have as a public space within the street environment, is outlined throughout many parts of this report and illustrated in examples from New York City and Chicago (see Section 2.5) and Vancouver (see adjacent case study).

Bute-Robson Trial Plaza, Vancouver

In the summer of 2017, the City of Vancouver piloted a new public space on Bute and Robson Street in the inner suburb of West End – closing a 50 metre stretch of street – as part of the street-to-plaza conversion initiative contained in the City's *Transportation 2040 Plan* and the *West End Community Plan*.

Initial community survey results indicate that the plaza is well used by locals and visitors, with no adverse traffic congestion impacts to the neighbourhood. There is also very strong community support, with over 75 per cent of survey respondents supporting a permanent plaza in this location.

Council have since recommended that the space become a permanent plaza, and the current trial will be extended until a permanent design is built [City of Vancouver, 2017].



5. (RE)ALLOCATING ROAD SPACE

Some common challenges of implementing a Complete Street, is to determine who (in terms of mode/s) to allocate the street to and how to balance the decision-making on reallocating former road space. In achieving this, the process often presents the challenge of how to overcome resistance by the community or local or state authorities to any impending changes and balance the objectives of varying government authorities.

Many cities are now recognising the importance of allocating road space to pedestrians, cyclists and public transport and adopting prioritisation assessments to encourage a change in travel behaviour by prioritising modes in the order illustrated in the adjacent diagram [City of Portland 2015 *Climate Action Plan*, Portland Bureau of Planning and Sustainability].



The following outlines some of the different approaches or methods in which to undertake these changes, to constructively work with the community and other stakeholders to both adopt and adapt to change.

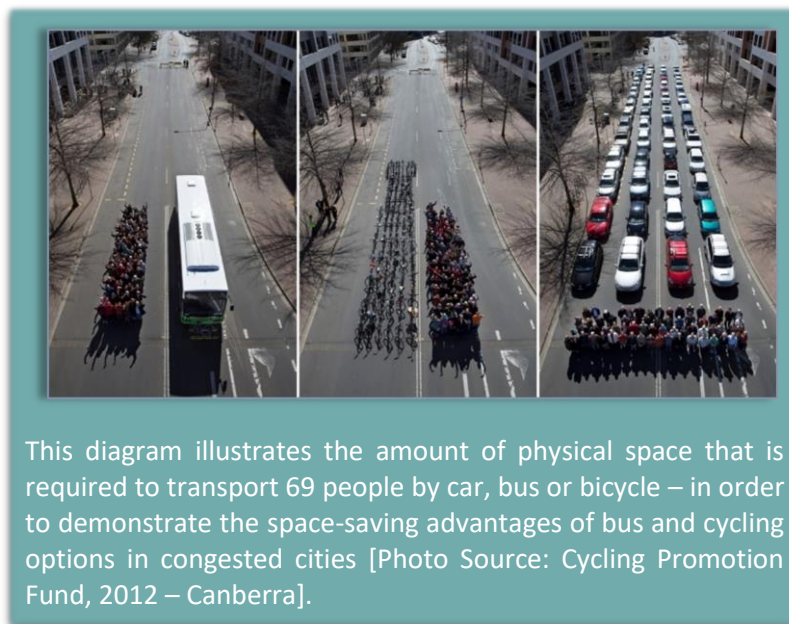
5.1 The ‘Link and Place’ Approach

The Link and Place approach was originally established by Transport for London (TfL) with the concept now being considered globally by many organisations, including VicRoads.

A report, *‘Link and Place: A new approach to street planning and design’* by Peter Jones, Centre for Transport Studies, UCL, London and Natalya Boujenko, founder of Intermethod, a leading Strategic Transportation Consultant, explores the Link and Place approach. The Report defines a Link to be a street for movement and designed for users to pass through as quickly and conveniently as possible, in order to minimise travel time; while as a Place, the street is a destination in its own right, where people are encouraged to spend time taking part in activities. It is considered that both functions have their own sets of design requirements.

Peter Jones led the development of the Link and Place approach to street planning and design that has now been incorporated into UK Department for Transport national guidelines. The methodology has been used in the Mayor of London’s *Roads Task Force* report and Transport for London (TfL) now requires boroughs to use the classification for all new street schemes.

Their study found that a Link and Place approach ‘provides a more comprehensive way of addressing the transport performance, economic, social and environmental problems facing urban streets. It seeks to recognise that a street is not vehicle-dominated and explicitly takes into account the wide range of Place-related functions that streets perform. At the same time, it seeks to highlight that this approach is not anti-vehicle, since it safeguards the needs of Link users and those requiring parking and loading space; it recognises that the Link requirements have to be balanced against a wide range of other needs that have equal legitimacy’ [Jones, P. and Boujenko, N, 2009].



A Link and Place approach provides a common language for multiple stakeholders, including a range of professions and the community, to engage in discussions about the specific interests in the various aspects of streets, their development and their operation. The study by Jones’ and Boujenko has also found that this method can assist in the process of getting different departments within

a local authority to agree on a Link/Place classification, and on the assignment of each street segment to a specific cell within the resulting matrix. This has proved to be very beneficial in encouraging better cross-departmental and cross-agency communication and in ensuring consistency of treatment by the various agents [Jones, P. and Boujenko, N, 2009].

In Victoria, VicRoads and Transport for Victoria are adopting this approach, albeit referring to it as *Movement and Place*, to help classify roads to support prioritisation of projects. This tool will hopefully assist with enabling Complete Street projects and demonstrates a positive shift in the nature and thinking of a state road authority and transportation planning in general – to realise the importance that our streets play as a ‘place’ within our community and their role in moving not only vehicles, but people too. The Movement and Place approach is further referred to in Section 8.1 of this report.

5.2 The ‘Sneckdown’ Approach

The ‘Sneckdown’ approach is an interesting concept that has recently emerged in North America, to identify just how much road space is actually required for vehicles to travel – by using snow to design safer streets. During the snowy winter months, motorists often navigate the street by assuming where traffic lane and line-marking would normally be – creating a regular vehicle tyre path track in snowfall that has fallen on the road surface. This pattern often exposes the minimum space vehicles require to navigate the road space.

Traffic engineers and planners have used this method in cities such as New York, Calgary and Philadelphia to highlight unused or redundant road space in order to potentially narrow the street to slow motor vehicle speeds and shorten pedestrian crossing distances (i.e provide kerb extensions).

Although the Sneckdown approach would be a challenging concept to apply in the Australian environment (due to our climate and lack of snow in urban areas) – it seeks to demonstrate how traditional road engineering can often over-allocate excessive space for the safe conveyance of vehicles – at the expense of pedestrian safety and amenity.

The images below from Canada demonstrate an example of how the Sneckdown approach is being used to identify streetscape improvements in the City of Calgary (although this approach has not yet formally been adopted by the municipal government).



This redesign cuts down the pedestrian crossing distance by almost 50 per cent across the north-south street and just under 25 per cent across east-west street where a kerb extension could be installed. It is considered that this reduction would not impact vehicular flow as these improvements are created entirely out of wasted or redundant road space [sneckdowncalgary.com].

5.3 Policy, Guidelines and Strategies

In many cases, the decision to implement Complete Streets are supported by adopted policies that many cities and municipalities have endorsed. Many policies are also supported by Complete Street guidelines or strategies to help organisations or authorities to design and plan suitable projects.

The benefit of having a policy or guidelines are:

- Stakeholders will be more informed about street design considerations;
- Can justify (to government, community and stakeholders) the concept and purpose of undertaking a Complete Street project;
- Street design processes will be more inclusive of the many stakeholders and citizens who are affected by street projects; and
- More consistency, clarity and transparency can be encouraged through documenting the evaluation of street design options and the rationale behind decisions made.

According to the (American) National Complete Streets Coalition, over 1,200 Complete Streets policies have been passed in the United States alone – with 955 individual municipalities having prepared a policy [Smart Growth America, 2016]. The Coalition provides technical assistance and resources to help cities and municipalities to develop a policy, and scores the effectiveness of developed policies to encourage the preparation of policy that is comprehensive, concise and which demonstrates the ability to be successfully implemented and monitored.

The National Association of City Transport Officials (NACTO), in cooperation with many Cities and Municipalities throughout the United States and Canada, has developed a number of manuals to guide the planning and design of Complete Streets to help implement changes through urban design, prioritisation to public transport, walking and cycling and for the consideration of stormwater management. These guidelines provide as useful tools to assist public works officers in determining appropriate solutions and options relative to their ultimate street improvement objective.

The image below illustrates the cover of each of the four specialised guides (courtesy of NACTO):



5.4 Complete Streets Policy

A number of North American authorities such as the Chicago Metropolitan Agency for Planning (CMAP) (in collaboration with the Active Transportation Alliance and the National Complete Streets Coalition) and the City of Toronto (see Toronto Complete Streets Guidelines, 2017) have developed Complete Streets toolkits and guidelines to assist their municipalities in incorporating a Complete Streets approach into local planning, design, and construction processes and documents.

In Australia, the International Public Works Engineering Australasia (APWEA) Queensland Division has prepared a '*Complete Streets: Guidelines for Urban Street Design*' manual.

The American Planning Association released a report '*Complete Streets: Best Policy and Implementation Practices*' that provides case studies from across the United States [McCann, B. & Rynne, S., APA Planning Advisory Service, Report No. 559]. These examples and case studies can often support new projects as they illustrate the benefits and process undertaken to help future decision making.

When developing a Complete Street policy, the (American) National Complete Streets Coalition outlines the 10 most important elements of an ideal policy. These are that a policy:

1. Includes a **vision** for how and why the community wants to complete its streets;
2. Specifies that '**all users**' includes pedestrians, bicyclists and transit passengers of all ages and abilities, as well as trucks, buses and automobiles;
3. Applies to both **new and retrofit projects**, including design, planning, maintenance, and operations, for the entire right of way;
4. Makes any exceptions specific and sets a **clear procedure** that requires high-level approval of exceptions;
5. **Encourages street connectivity** and aims to create a comprehensive, integrated, connected network for all modes;
6. Is **adoptable by all agencies** to cover all roads;
7. Directs the use of the latest and **best design criteria and guidelines** while recognising the need for flexibility in balancing user needs;
8. Directs that Complete Streets solutions will **complement** the context of the community;
9. Establishes **performance standards** with measurable outcomes; and
10. Includes specific **next steps** for implementation of the policy.

It is recommended that these elements be considered when developing policy for your relative organisation.

The Challenges of Implementing a Complete Street – City of Wheat Ridge, Denver

The transition of streets into Complete Streets is not always a simple and straight forward task. In many cases, the application of road diets or significant changes to the existing street environment can be fraught with opposition from the local community and businesses – often becoming a contentious political issue.

Since 2011, the City of Wheat Ridge in Jefferson County, Denver (pop: 30,000) has attempted to reconfigure a 2.4km stretch of their main thoroughfare (38th Avenue) through the suburban neighbourhood – which is a main arterial road between Downtown Denver and the Rocky Mountain foothills – into a vibrant Main Street to serve as the neighbourhood’s ‘downtown’.

In 2011, the City developed a Corridor Plan and as an initial step, reduced the size and number of road lanes by applying a road diet measure to confine the five lane carriageway to three lanes with a centre turn lane (reducing through-lanes from two to one in each direction), reducing the speed limit and providing bike lanes.

Although surveys conducted between 2012 and 2015 indicated that the road diet measure reduced average recorded vehicle speeds, the measure received considerable community push back. The project has since stalled due to ongoing community and political division for the changes with pressure from the community to reinstate the street back to its original layout. Furthermore, a public ballot to pass a local sales tax to help fund the project failed in 2014.

This is an example of where a Complete Streets initiative has become a difficult and divisive proposal that has stalled for over five years with slow progress to date. In understanding why this initiative failed, the City of Wheat Ridge transport officials highlighted the importance of undertaking effective community engagement at the onset of the project. The engagement should aim to effectively inform the local community, business owners and the elected Councillors during the project planning stage, of the proven (quantifiable) benefits that a Complete Street can have to an area, in order to help win initial support for the project and overcome many of the barriers to change.

Below is a current Google Streetview image of 38th Avenue, and a rendition of what the City are proposing as part of the corridor revitalisation. As the current image to the left illustrates, the street is not currently very conducive in supporting pedestrian activity, and lacks identity and streetscape activation (retail, residential or other active public uses), as it is very heavily dominated by asphalt and hard surfaces.



6. EFFECTIVE COMMUNITY ENGAGEMENT

A key element in successfully implementing Complete Street and Placemaking initiatives, is having the ability to effectively communicate and engage with the community, stakeholders and decision makers. Overcoming resistance to change, and communicating what may often be theoretical, complex or technical engineering or planning solutions to people who are not engineers or planners, is an important factor to consider.

“Communicate, Collaborate, Compromise”

Community engagement is an important element of the democratic process and an empowered community is one that actively participates to influence decisions that affect their lives.

The level of engagement will vary depending on the nature and complexity of the project. The International Association of Public Participation (IAP2) is a respected peak body for community and stakeholder engagement, who have designed an internationally recognised spectrum for community engagement that guides engagement based on the level of influence the community has over a decision. IAP2 identify these as the following five approaches to engagement – to either inform, consult, involve, collaborate or empower – recommending appropriate methods and tools in which to apply under certain approaches [IAP2, 2016].

“A successful behaviour change program needs to be customised to take into account the values of the demographic in which you are wanting to engage”
– IAP2

stakeholder engagement, who have designed an internationally recognised spectrum for community engagement that guides engagement based on the level of influence the community has over a decision. IAP2 identify these as the following five approaches to engagement – to either inform, consult, involve, collaborate or empower – recommending appropriate methods and tools in which to apply under certain approaches [IAP2, 2016].

In 2015, the Victorian Auditor-General’s Office released their *Better Practice Guide: Public Participation in Government Decision-making*. This guide presents as a useful tool that provides a high-level framework for agencies across the public sector to use when deciding how best to involve the public in government decision-making and implementation, along with clearly setting out important principals and elements to effectively and efficiently undertake public participation exercises.

Effective engagement on Complete Streets and Placemaking projects is not purely contained between council and their community. It is often important to consider engagement and communication within government organisations themselves, particularly between the respective engineering, planning and infrastructure development departments within local government organisations. Many



Complete Streets and Placemaking projects need to traverse the divide between the engineering and planning disciplines, and requires collaboration and understanding of each of their respective purpose to bridge effective knowledge gaps to deliver successful holistic solutions

Many common themes regarding how best to consult and engage with the community started to emerge throughout the study tour when meeting various government departments, organisations and community members. These themes are illustrated in the adjacent diagram and further outlined in the following table, which outlines matters to consider under each theme:

Empathy	Relationships
<ul style="list-style-type: none"> ▪ Be relatable to your community. ▪ Know your audience - then target consultation accordingly. ▪ ‘Sell’ ideas to local business owners using the ‘pilot’ method (temporary measures) to overcome resistance to change. ▪ Remember that many of these communities may have already expressed their thoughts and ideas on your topic matter (in consultation for other previous strategies) – Understand what these previous issues are, because although your organisation may have forgotten, the community hasn’t. 	<ul style="list-style-type: none"> ▪ Harness partnerships with local university students for street design competitions. ▪ Focus on city partnerships to avoid a top-down approach. ▪ Establish relationships with community leaders. ▪ Capacity building: train leaders to consult within their own community for you. ▪ Keep in mind that collaboration and partnerships are very important in getting many projects off the ground. ▪ Consider the use of the ‘divide and conquer’ approach, and apply to neighbouring business owners to overcome resistance.
Communication	Place
<ul style="list-style-type: none"> ▪ “Speak their language” – Ensure consistent messaging and avoid jargon or engineering complexities in messaging. ▪ Refine engagement process to suit and target the audience in according with the context of the project (refer to IAP2 engagement methods). ▪ Avoid the use of engineering or technical plans for community consultation or presentations. Present information in a simple, legible and identifiable manner. ▪ Prepare a demonstration video or pop-up feature / park to demonstrate a concept to the community. ▪ Educate the community on what a Complete Street or Placemaking is. 	<ul style="list-style-type: none"> ▪ Go to <i>their</i> communities to engage (in the comfort of <i>their</i> environment). Don’t always wait for them to come to ‘Town Hall’ meetings. ▪ Erect or hire a store front or information booth and make it comfortable and inviting to the community. ▪ Use food and fun to attract people to community engagement events (by harnessing the comfort of food and socialising).

Accountability	Resourcing
<ul style="list-style-type: none"> ▪ Give your community ownership and influence over the outcomes. Use neighbourhood associations to lead these discussions. ▪ Make the community accountable to deliver their own actions and report back to you on their progress (the idea of ownership in the process). ▪ Don't complete design until you have consulted first. Let the community influence the outcomes too. 	<ul style="list-style-type: none"> ▪ Need to set community expectations and not over-promise if you cannot deliver – this requires balancing budget, resourcing and staffing as these things influence the level of project delivery. ▪ Invest and fund for comprehensive community engagement in the initial budget of a project. ▪ Adequate funding for community engagement could be the 'do or die' for the project – therefore this investment should pay off.

7. INTEGRATED URBAN PLANNING & DESIGN

Although this report focuses on retrofitting existing streetscapes – the successful activation of our streets does at times begin with the initial (historic) design and layout of our suburbs and cities. Consideration in incorporating Complete Streets and Placemaking can be given to integrate land use, transport, environment and social elements through urban renewal or when planning new Greenfield or Brownfield communities.

There is no one-size-fits-all approach to retrofitting suburbia. Retrofitting is unique to its place, and seeks to re-establish a vital connection to the existing place, whether by providing space for local community activities by connecting existing land uses with the streetscape environment, or by revitalising the ecology in areas by ‘greening’ the landscape.

Our suburbs and cities are continually transformed by developers, urban planners, architects, politicians, activists, policy makers, financial institutions, as well as through the individual choices of millions of residents of all socio classes, race, age and ethnicity. Complete Street and Placemaking are achievable initiatives that recognise that our cities are forever evolving, and that traditional car-centric street environments do not need to stay that way forever.

When we walk along a street, our vision does not end at the boundary of where the road reserve appears on paper or a title – it extends beyond the street. Therefore, the design and interactions of the environment beyond the road reserve or streetscape forms a strong relationship with the street (i.e. through mixed-use development, shopfronts, front gardens, architectural features, building facades or walls, balconies and windows).

In many cases, particularly in planning new outer suburban growth areas or urban renewal areas, there is an opportunity to integrate design to accommodate and encourage the principles that contribute to a Complete Street or foster Placemaking through community involvement and interaction. Part of the Complete Streets success is attributed to by good urban design and the prevalence of mixed use (retail/commercial) purposes on the ground floor or street level, with housing located above with windows or balconies facing the street, so as to promote active surveillance (adopting Crime Prevention Through Environmental Design – CPTED principles).

In this context, good urban design at the onset of developing a space seeks to create a defined sense of enclosure that has an inclusive psychological affect to a particular space that fosters social integration by good design. It aims to allow the function of surrounding buildings or spaces to spill out into the street, such as diners eating alfresco outside of a café or restaurant or residents sitting on a balcony or porch – providing an ever-changing sense of street activation.

Urban Planning in Portland



The Pearl District of Portland, Oregon provides some of the best examples of successful and effective urban street design in North America, with medium density development and very good activation of streetscapes (restaurants, cafes, street performers and social interaction).

The district, formally occupied by warehouses, light industry and rail yards, has undergone significant urban renewal since it was rezoned into a mixed use precinct in the early 1980's, supported by effective government land use planning strategies and strong community activism to retain heritage elements and to promote small businesses rather than corporate firms.

(Interesting fact: There is only one McDonald's store located in Downtown Portland, and only three in the neighbourhoods within three kilometres of Downtown – demonstrating the influence of local buying power in supporting smaller organic food and beverage establishments rather than large corporate companies. In comparison, there are 14 McDonald's stores located within three kilometres of Melbourne's GPO, with seven of these within the CBD Hoddle Grid alone).

The design of the Pearl District focuses on keeping the pedestrian perspective at a human scale and generally restricts building heights to between six and eight stories in many parts of town, rather than towering blocks which can block natural sunlight and overburden the sense of space from the perspective of the pedestrian. The district is characterised by short 200-foot (61 metre) city blocks and 64-foot (20 metre) wide streets which provides for plenty of street frontage and very few surface car park lots (given that surface parking lots are a common feature across many downtown areas of American cities).

Streetcars / trams provide great access to Downtown and cycling is relatively safe and encouraged through dedicated bike lanes and bike share facilities. Vehicle speeds remain low and pedestrians are provided with right-of-way in many places.

8. RETROFITTING SUBURBIA IN VICTORIA

The concept of Complete Streets and Placemaking, as tools to assist with retrofitting and activating streets in Victoria, has continued to gain pace in recent years. The following are some of the approaches for how these initiatives can be applied in Victoria to help activate our streetscapes and support the implementation of projects by local government organisations:

8.1 VicRoads Movement and Place / SmartRoads

VicRoads are in the process of transitioning their SmartRoads approach to now adopt the 'Link and Place' approach referred to earlier in this report (although VicRoads instead refer to theirs as 'Movement and Place').

VicRoads will use the Movement and Place Matrix to help classify and prioritise projects (that can support Complete Streets) as a tool to help find the balance between the transport planning needs to move people, and the place needs required to offer a great experience for people using public streets.

8.2 State Land Use Plans and Legislation

It is intended to apply integrated approaches to deliver future projects through the newly established Transport for Victoria state authority. Transport for Victoria brings together the planning, managing and coordination of Victoria's transport system and its agencies, including VicRoads and Public Transport Victoria (PTV), and will seek to accommodate and consider strategic and holistic approaches that can be achieved through implementing Complete Street projects.

As referred to earlier in the report (Section 2.2), the Victorian *Transport Integration Act 2010* promotes the consideration of all transport modes to achieve integrated transport and land use planning objectives in the context of a Complete Street. Transport integration objectives are transpired through Clause 18 (State Planning Provision Framework) and Clause 52.36 (Particular Provisions) of the Victorian Planning Provisions.

In reference to Melbourne's current planning strategy, *Plan Melbourne 2017-2050*, a key objective of the Plan is to ensure that Melbourne has an integrated transport system that connects people to jobs, and services and goods to market, by investing in the Principal Public Transport Network (PPTN). It seeks to achieve this by promoting the concept of the '20-minute neighbourhood' which aims to give Melbournians the ability to 'live locally' by enabling people to access most of the everyday needs within a 20 minute walk, cycle or local public transport journey of their home. The implementation of

Complete Street and Placemaking initiatives are well suited and core to, support and achieve the ‘20 minute neighbourhood’ objective.

8.3 Development Contribution Plans (DCP)

To enable Complete Streets projects for longer-term implementation, street design and Complete Street and Placemaking concepts (such as for street improvement projects, bicycle and pedestrian facilities and local art) should be considered in the strategic land use development phase when preparing local structure plans. Funding and other resources required to deliver initiatives can be sourced by including relevant projects in the preparation of local Development Contribution Plans (DCP’s) to enable projects to be adequately funded and delivered at a later stage, once a precinct development has commenced or occurred.

8.4 Interim design measures (pilots or trials)

A common theme in which emerged from the study tour, was that many municipalities implemented Complete Street initiatives as an initial trial or temporary approach, sometimes referred to as an ‘incrementalism’ approach. Interim measures give local authorities the opportunity to overcome community resistance to permanent change and help build support for a project and test its functionality before proceeding with more permanent construction. The NACTO Urban Street Design Guide provides multiple examples of how to apply interim or temporary Complete Streets measures.

The temporary reallocation of road space can be applied for features such as footpath widening, traffic calming, bike parking or bike share stations, outdoor dining parklets or vegetation and planter boxes.

8.5 Complete Streets and Placemaking examples in Melbourne

Some local Victorian councils have undertaken Complete Streets or Placemaking projects, or have already developed policy or programs to support such initiatives.

In recent times, the City of Melbourne has been very active in this space, conceived as a result of the City’s 1992 ‘*Postcode 3000*’ Planning Strategy which sought to reintroduce a residential population into the CBD to create a ‘24-hour City’. The resulting bars, cafes, supermarkets, public art and vibrant laneways transformed Melbourne into a radically improved modern city. The Complete Street and Placemaking movement is slowly filtering through the inner suburbs of Melbourne with many inner-city local government areas now also having either a dedicated Placemaking department or encouraging Placemaking initiatives in local strategies.

Some recent examples of Complete Street and Placemaking projects throughout Melbourne include:

- **Pavement to Parks, City of Melbourne:** transitioning redundant road space in North Melbourne to a public park (refer to the following Errol Street, North Melbourne case study);

- **Streetscape improvement, City of Stonnington:** temporary streetscape improvements to enhance pedestrian amenity and safety on Greville, King and Porter Streets in Prahran – with parts of Greville Street to now become a permanent ‘shared zone’ after a successful trial;
- **Pedestrian plaza, City of Port Phillip:** the transition of Acland Street in St Kilda into an integrated public pedestrian plaza with a dedicated tram corridor. The new street design and plaza delivers 25 per cent more pedestrian space, 25 per cent more footpath trading space, accessibility to trams and improved pedestrian safety [Yarra Trams, 2017];
- **Complete Street, City of Darebin:** various Complete Street elements along High Street in Preston including a pop-up park to encourage a safer public space for pedestrians and cyclists.
- **Parklet Program, City of Moreland:** establishment of a Parklet Program by Moreland City Council to encourage the delivery of, and outline the process for the creation of parklets within the municipality.

Errol Street, North Melbourne

A successful Melbourne example of reallocating redundant road space was undertaken by the City of Melbourne on Errol Street in North Melbourne. The aerial images below illustrate the before (February 2012) and after (May 2014) change to Errol Street [Nearmap, 2017].

In 2012, the City re-landscaped what were effectively roadway medians and a series of traffic islands at the intersection of Errol, Courtney and Harcourt Street to provide a public park by expanding the space from 529 square metres to approximately 4900 square metres of useable community space (a nine-fold increase in useable land). This was achieved with a budget of approximately \$400,000, and delivered whilst still maintaining vehicle access to adjoining residential properties [City of Melbourne, 2015].

This location was identified as a key options in the City of Melbourne’s *‘Open Space Opportunities in North and West Melbourne’* Study (May 2002) and served to provide additional valuable outdoor space to support the adjacent North Melbourne Primary School.

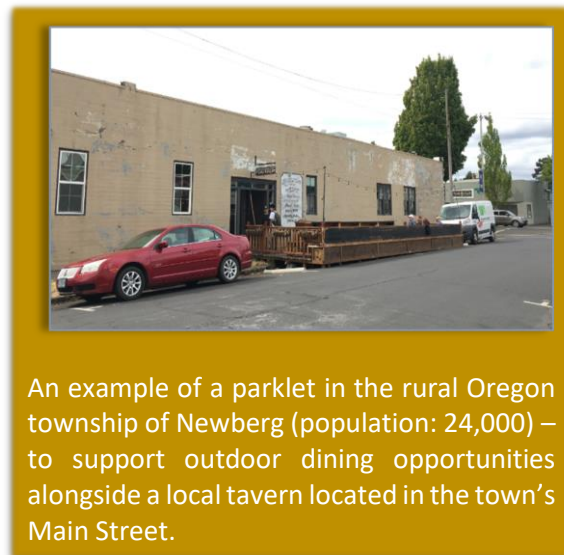


It is understood however, that no local council in Victoria has established a dedicated Complete Street policy. However, many councils have incorporated concepts of what are common Complete Streets and Placemaking objectives within their associated planning strategies, local structure plans or local Planning Schemes.

Local councils should consider preparing their own Complete Street strategies in order to encourage the implementation of more Complete Street and Placemaking initiatives to enable a retrofit of suburbia and better utilisation activation of existing streetscapes within their respective municipalities.

8.6 Implementing Complete Streets in Regional Towns

As referred to throughout this report – there is no one-size-fits-all approach to implementing a successful Complete Street. Smaller regional or rural towns often face distinct challenges from urban areas when it comes to improving the conditions for people walking and cycling – as these communities often want to preserve their ‘small town’ character and are often apprehensive in diminishing that characteristic with the addition of footpaths and formalised (kerb and channel) streetscapes. Notwithstanding this, communities at the same time also want to improve active transport opportunities (walking and cycling) and safety for all users. Smaller rural councils or Shires also lack access to adequate funding and staff resourcing to implement such changes. This is a common situation with many rural or regional towns throughout Victoria.



An often first place to implement Complete Street elements are along township ‘Main Streets’, as the main street is often the most ‘suburbanised’ area of a small town, and where numerous multi-modal activities take place given the mix of land uses (retail, commercial, civic or administrative offices etc). This can be achieved as an incremental change to reflect the nature of change and overcome budget



constraints in the first instance. Rural townships also provide a suitable foundation in which to also incorporate Placemaking opportunities to reflect and capture a town’s local character.

Along rural residential streets, design compromises such as a pedestrian lane or advisory shoulder (on the existing roadway as demonstrated in the adjacent image) can

serve as a visual separation for pedestrians and cyclists without completely changing the street. The use of parklets can also help provide outdoor dining areas (either privately associated with a particular business, or provided by the local authority as a public seating area) to promote economic activity and activation and vitality of the town's main street.

In December 2016, the US Department of Transportation Federal Highway Administration released the '*Small Town and Rural Multimodal Networks*' design guidelines as a resource for transport officials of small towns and rural communities to apply Complete Street initiatives in the rural, less-urbanised context. Regional Victorian councils and shires can refer to this document as a resource tool to assist with implementing Complete Streets in regional Victoria, given the commonalities between Australian, American and Canadian rural environments.

9. MEASURING SUCCESS

Unlike common engineering or planning solutions for projects, whereby the ability to quantify the projected or actual output achieved from a city improvement project is tangible (i.e traffic/water volume, property development, Greenhouse Gas Emissions etc), the ability to measure the more intangible elements of 'design' or define 'improvement' can at times present itself as a difficult task.

Every person has an individual perception of design, art, feeling or comfort, with these perceptions often subjective as our notion of what makes for a good design or feeling often varying based on our psychology.

Therefore, the ability to measure the outcome, or to purely assign a benefit to a Complete Street or Placemaking project, is often difficult as there are so many contributing and ancillary factors that influence the outcome. Often changes in property prices, population, demographics or even government policy and strategies influence the impact to a Complete Street that is not necessarily a factor contributed to purely by a Complete Street project.

A common theme to emerge from the study tour, was the difficulty many organisations and authorities had in quantifiably measuring the value of a Complete Street or Placemaking project – both prior and post project delivery – with many cities relying purely on observations or anecdotal evidence to support future business cases. This was often attributed to the lack of resources or confidence in organisations to accurately analyse the before and after environment and justify that that Complete Street or Placemaking project was the attributing factor.

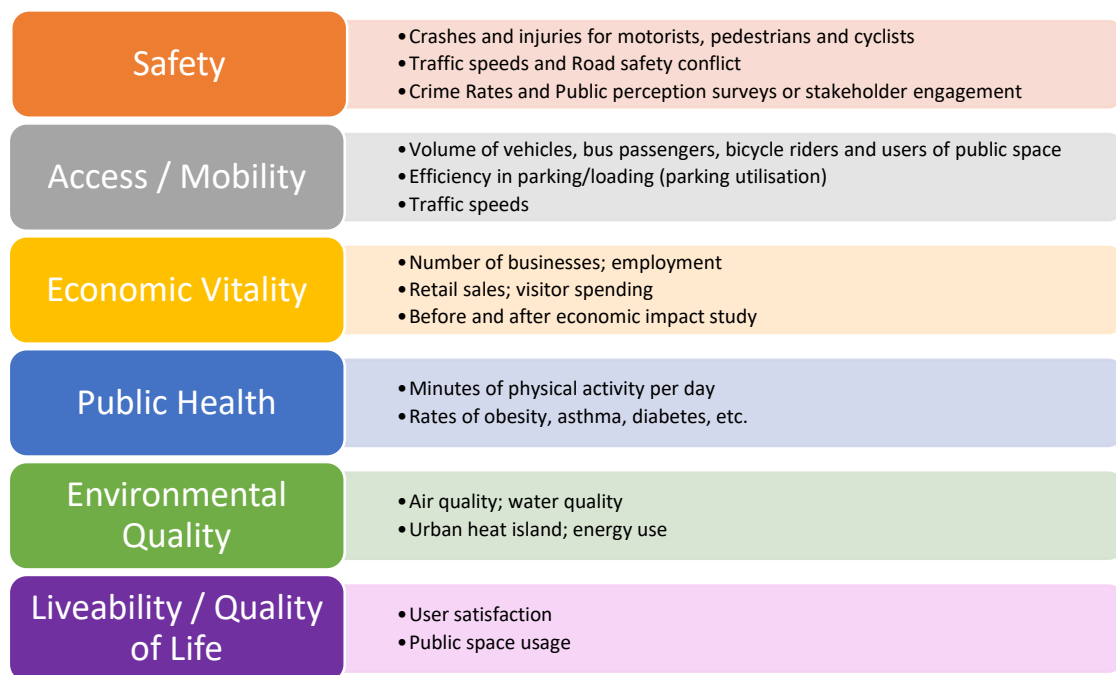
In order to gain support (community, political, organisational) and often obtain funding to deliver improvement projects, there is a strong need for performance measurement – in effect, to measure outcomes and support them with quantitative analysis. Performance measurement is the math required to illustrate benefits to support evidence-based decisions and contribute to any business case.

The New York City Department of Transportation (NYCDOT), has been very active in recent years in developing upon the ability to measure Complete Street outcomes. Their document, *'The Economic Benefit of Sustainable Streets (2012)'* provides as a useful tool to demonstrate the economic, social and environmental impact and presents a number of case studies in which to illustrate the benefit and performance measurement metrics from recent projects undertaken around New York City. To capture the data, NYCDOT categorises the potential metrics for project goals under the themes of safety, access and mobility, economic vitality, health, environment and liveability.

Being able to demonstrate the potential economic benefits of better-designed streets can be a powerful tool for several reasons:

- Data on business impacts can be used for project evaluation (identifying project impacts) to address the concerns of local residents and business owners about the impact of projects on businesses, replacing anecdotal or personal experience with comprehensive data;
- By providing a broader understanding of project benefits, the data has the potential to activate the business community in support of appropriately designed and effective street improvement projects; and
- Empirical results allow cities to link street design more closely with economic development, just as cities are beginning to link street design with public health.

NYCDOT list the following potential metrics in managing each of the goals that a Complete Street initiative seeks to achieve, recommending at the foremost to establish a proper methodology in which to aid the measurement process:



The results of case studies contained in documents such as *'The Economic Benefit of Sustainable Streets (2012)'*, amongst others, provide evidence that improved accessibility and a more welcoming street environment created by these projects generate increases in retail sales in the project areas. The report emphasises the importance of noting that total retail sales (cumulative or per business) is the critical indicator for overall economic performance rather than number of visitors, frequency of visits or spending per visit. Given the budgetary challenges for many Victorian councils, making the connection between transportation policy and economic development is critically important. The common inability to make that connection or to rely solely on anecdotal evidence is a major weakness and barrier to implementing future projects. Although notwithstanding the above, a key issue for quantitative studies is that the complexity of urban retail environments renders it challenging to isolate the impact of any one variable on economic performance [The Economic Benefit of Sustainable Streets, 2012].

It is commonly recognised that many businesses consider the streetscape an important factor in attracting customers or tenants. As such, many business owners or traders are often apprehensive of change to streets that are perceived to benefit pedestrians and cyclists while reducing convenience for drivers – based on the belief that providing easy access for motorists into their business district along with ample and nearby parking is critical to their business' success. Many studies conducted of business areas in New York, Vancouver and Toronto have found that people who arrive on foot or by bike generally visit the area more often and cumulatively spend more per capita at local business, than those who use other methods of transportation [The Economic Benefit of Sustainable Streets, NYCDOT, 2012]. Therefore, the use and reference of such studies, or particularly more local examples, can provide the necessary justification needed to enable projects, to convince not only the local traders or community, but government bodies and financiers too.

Placemaking uses local community, to dictate and focus the outcomes that are more tailored to the characteristics of that community or neighbourhood, with Section 3.4 of this report exploring how to measure the 'sense' of a place.

To continually refine and enhance the strategies that cities employ, organisations must gain a clearer understanding of the effectiveness and value of their Complete Street and Placemaking projects by measuring the full range of outcomes.

10. RECOMMENDATIONS

The transition from traditional automobile-centred transport planning to one that achieves a Complete Street objective and holistic planning approach, is not always a straight forward process. A clear commitment to a Complete Streets approach, with the support of the community's leadership, is the best compass to guide planners and engineers through the transition.

Based on the findings and observations from the study tour, the following recommendations are provided in order to facilitate Complete Street and Placemaking initiatives in the effort to retrofit suburbia to better utilise and activate the existing streetscape:

Recommendation	Action
1. That each council develop a Complete Street policy to provide a framework and direct opportunities to better utilise and improve existing streetscapes.	<ul style="list-style-type: none">▪ Utilise the <i>Urban Street Design Guide</i> and other NACTO guidelines to develop your policy.▪ Ensure your policy includes the 10 elements of a Complete Streets policy.▪ Consider incorporating your Complete Street policy with other transport, land use or capital delivery plans or strategies.
2. Consider fostering a local Placemaking or parklet project within your own local community.	<ul style="list-style-type: none">▪ Utilising the complete street policy framework, effectively engage with the local community to identify opportunities for improvements within your municipality.▪ Establish a local community grant program to help fund community-led projects.
3. Initiate Complete Street or Placemaking projects as a trial or pilot project first.	<ul style="list-style-type: none">▪ Utilise trials and pilots as a method of overcoming community resistance to change, in order to develop support for projects.▪ Utilise a trial as a good opportunity to modify / refine a project to achieve community buy in and enhance the overall project outcomes.
4. Establish a 'project advocate' or 'champion' early in the process.	<ul style="list-style-type: none">▪ Establish a project advocate or champion early in the process to provide the leadership and focus in delivering the project particularly when the project may be politically challenging.

Recommendation	Action
<p>5. Establish a methodology and process in order to quantifiably measure the success of the project.</p>	<ul style="list-style-type: none"> ▪ At the onset of a project, ensure you establish parameters to measure what you want to achieve. ▪ Use evidence-based case studies to help build future business cases that support projects and demonstrate the issues and opportunities to the community, traders and government.
<p>6. Consider appropriate methods of engagement to effectively communicate the project with the community and stakeholders.</p>	<ul style="list-style-type: none"> ▪ In engaging with your community, stakeholders and within your own organisation – be responsive to the audience in which you are targeting. ▪ Tailor your communication tools and method of engagement to suit your target audience by considering the IAP2's Design, Plan and Manage model. ▪ Ensure to appropriately consult within your own organisation to align Complete Street and Placemaking projects with proposed capital works delivery projects.

Consideration of these recommendations, all or in part, could help local government and public works officers to contribute to the successful implementation of Complete Streets and Placemaking initiatives and further encourage the use of these concepts in Victoria.

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