



Lake Macquarie
City Council



OUR SHARED FUTURE

Lake Mac Parking Strategy 2018

“Any place
worth going to
has a parking
problem”

—James Castle



CONTENT

Executive summary	5
Introduction	7
Setting the scene	9
Best practice in parking	15
Current approach and implications	17
Community engagement	27
The new direction for parking	37
Strategic objectives	41
Transport management plans	45
Parking management tools	49
Parking for development	57
Parking information and monitoring	61
Appendices	62
Bibliography and further reading	70



EXECUTIVE SUMMARY

Parking spaces seem innocuous, just a couple of lines painted on asphalt. Multiplied and mismanaged, they create traffic congestion, worsen air pollution, lower economic activity, decrease housing affordability and encourage urban sprawl. The cost and availability of parking also affects people's travel choices and decreases the patronage and viability of public transport.

Satisfying parking demand at any cost is not sustainable. Like most cities across the world, Lake Macquarie must focus its effort on better utilising our existing parking resources. This can be achieved through actively and effectively managing parking, enhancing enforcement, and improving walking, cycling and public transport options to and within our town centres.

The Lake Mac Parking Strategy provides a long-term strategic plan for the management of parking across our nine town centres. It guides decisions on parking and recommends areas for investment to improve the liveability and economic vitality of our City.

The best practice parking management principles within this Strategy are essential to solve our City's parking issues. The clear direction and strategic objectives will ensure the actions of the Strategy are focused in the right areas and, most importantly, are achievable and effective.

The cornerstone of the Strategy is a toolbox of actions that will be implemented to individual town

centres through customised Transport Management Plans to improve the efficiency and availability of parking across each centre.

The Strategy builds upon the City's Vision and Values and includes the following strategic objectives:

- to improve economic vitality, local amenity, access and mobility within our town centres;
- to improve walking, cycling and public transport to and within our centres;
- to make best use of our parking resources; and
- to understand and recognise the real cost of parking and provide choice to consumers.

By providing more efficient parking and reducing the distance people need to travel daily to reach essential services, we will curb the overall contribution of motor vehicles to carbon emissions in an effort to realise our shared obligation to achieve a low-carbon future for our City.

The key recommendations of this Strategy are:

- prepare a transport management plan for each town centre;
- investigate options to increase enforcement activities;
- review development parking rates; and
- undertake a trial of smart parking technologies.



INTRODUCTION

The City's dispersed urban form provides unique planning challenges and opportunities. Congestion and development pressures are in the early stages of impacting the City's productivity, vitality and liveability. Parking is an essential component of the transport network and plays a key role in the function of urban areas.

All vehicular journeys involve parking at both the start and end of each trip. The availability and cost of car parking can influence decisions on how, when and where people travel. Poorly managed or excessive parking also impacts on the quality of the urban environment by using valuable urban space, increasing development costs, exacerbating congestion, detracting from vibrancy in town centres and lowering housing affordability. Getting parking right is essential to creating a vibrant and liveable community.

In recent years, there has been a significant shift in what is considered best practice parking management. The unintentional consequences of current parking practices have resulted in substantial negative impacts on our urban environment. These impacts include the stimulation of urban sprawl, encouraged high rates of vehicle ownership and use, decreased affordability of housing, lowered development viability, increased traffic congestion and air pollution.

In short, our current parking management practices contribute towards a host of expensive and undesirable consequences. These practices tend to suppress economic activity in town centres in favour of greenfield development on the urban fringe or lower value land such as business parks and industrial areas. In turn, additional development on the urban fringe increases congestion as people move longer distances for their needs. This increases demand for parking and road maintenance costs for Council.

A new approach to parking is essential if these challenges are to be addressed. This Strategy aims to maximise the use of our existing parking resources. This will be achieved by managing demand for parking and creating a balance between the provision of an adequate supply of parking to meet the needs of a dynamic, competitive economy and encouraging the use of alternative transport.



WALKING AND CYCLING IS GOOD FOR BUSINESS

The Heart Foundation's Good for Business discussion paper brings together the evidence supporting the economic and social benefits of making commercial streets more walkable and cycling-friendly.

The paper found that:

- Walking and cycling to local shops is good for business and the local economy, and is essential to the success of revitalisation strategies.
- A high proportion of retail expenditure comes from local residents and workers.
- Space allocated to bicycle parking can produce much higher levels of retail spend than the same space devoted to car parking.
- Many car-borne shoppers are 'drive through' shoppers, stopping to pick up one item on the way to their eventual destination, rather than people for whom shopping is their main purpose for visiting an area.
- Retail vitality would be best served by traffic restraint, public transport improvements and a range of measures to improve the walking and cycling environment.
- High quality walking and cycling environments around shops, neighbourhood activity centres and main streets are vital for the economic health of regions.

SETTING THE SCENE

With 205,000 residents, Lake Macquarie is one of the largest regional cities in NSW. Our City is forecast to grow by an additional 30,000 residents over the next 20 years. This rate of growth presents significant transport, economic and environmental issues, but also many opportunities to improve the City's economic vitality and liveability.

When compared to population growth, employment within our City is lagging. During the five years to 2011, only an additional 4600 jobs were created in our City, where the population grew at almost double the rate with an additional 8400 people.

Of those who work in our City, about 30 per cent work within our nine town centres. The residual are employed within our neighbourhood centres, suburban areas, industrial precincts and business parks. About 25 per cent of residents, or 47,000 people, leave our City each day for work. This is an increase of more than 5000 export workers in the five years to 2011.

Over the last decade, the proportion of people who both work and live in Lake Macquarie has been in decline. Of those residents seeking employment outside of our City boundaries, most positions are within industry sectors

traditionally located within town centres such as retail, social assistance, public administration and professional services. Reversing this trend represents an opportunity to increase employment for our residents within our City.

Addressing any parking problems is best undertaken as part of a comprehensive multi-model transportation plan. Driving and parking make up just one facet of our City's transportation infrastructure. While cars will continue to be the primary mode of transport, many of us walk, cycle and use public transport. In the future, it is anticipated that demand for these alternative forms of transport will grow significantly.



CAR OWNERSHIP AND USAGE

With 82 per cent of trips in the City by car, Lake Macquarie is one of the most-car dependant cities in NSW. Our levels of car dependency are comparable to traditional car-oriented cities in the United States, such as Los Angeles, Detroit and Austin. The internationally recognised negative consequences of cities with high car ownership include:

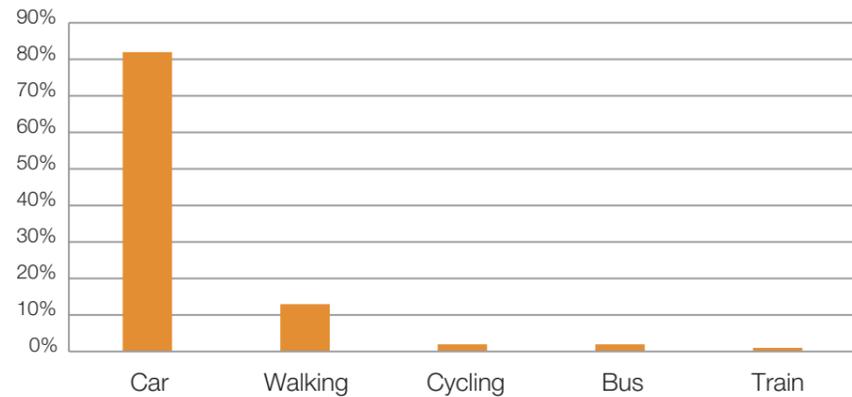
- increased levels of social isolation and urban sprawl;
- higher rates of youth unemployment;

- a higher percentage of obesity;
- lower rates of disposable household income; and
- a greater proportion of local government budget expenditure towards roads.

When compared to similar cities, Lake Macquarie tends to score poorly in all of the above metrics. There were 155,151 registered private vehicles in the City in 2015. This equates 1.9 cars per household. This further reinforces our current high levels of car dependency.

However, recent community engagement for the City's Vision and Values and this Strategy has identified a considerable shift in demand towards walking and cycling among residents. There has also been a notable increase in the proportion of trips taken on foot, as noted in the Bureau of Transport Statistics' Household Travel Survey, where the proportion of trips by walking increased three per cent from 2007-2008 to 2014-2015.

Lake Macquarie trip mode share (2014-2015)

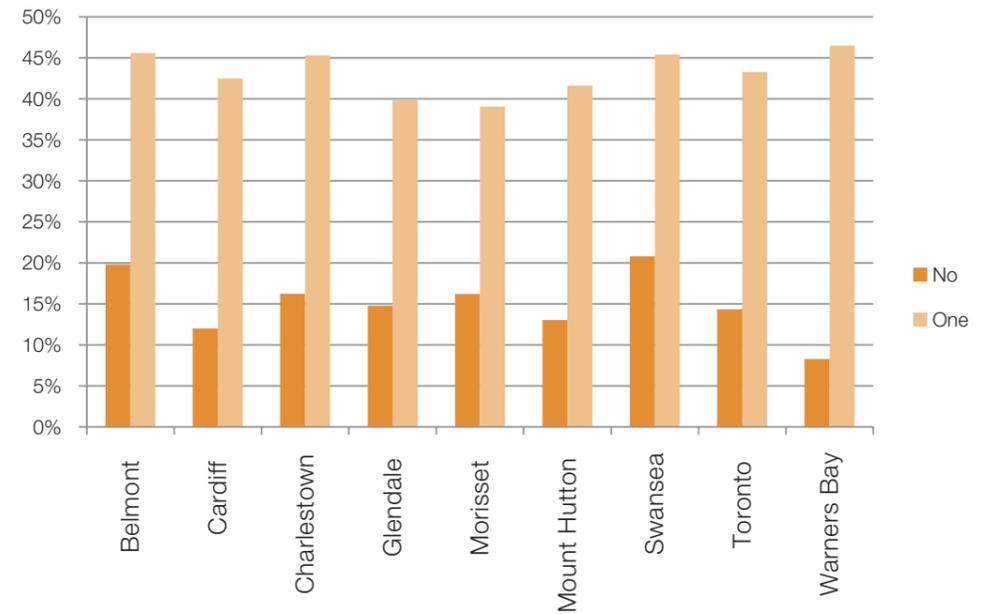


CAR OWNERSHIP IN CENTRES

Car ownership rates vary considerably across the City. Based on the 2011 Census, 7.02 per cent of dwellings in the City do not own a car and 34.45 per cent have one. The

higher proportion of dwellings that chose not to own a vehicle increases considerably in and neighbouring town centres, especially those well serviced by active transport

infrastructure. For instance, 20.79 per cent of households in and immediately surrounding the Swansea town centre are car free.



Furthermore, the proportion of households in and neighbouring town centres that are 'car-light' (one car) is considerably higher than lower density areas. Households that choose to be either car free or car-light span across all age brackets and socio-economic indicators.

While households in and neighbouring centres with good active and public transport may

make less private car travel, they may still choose to own a car for recreational purposes or bulk shopping. In addition, people may live in a higher-density town centre, but work outside the area, at a location not accessible by other means, and hence still require a car to travel to work.

Contrary to community perception, the data clearly

indicates that higher density areas in and surrounding our town centres have a lower car ownership rate. The cause of high parking demand stems from people living outside of these key areas that have few alternatives or incentives but to drive and park in our centres.

PARKING IN CENTRES

Parking is an essential component of our economy and transport system. Without a consistent, integrated parking strategy, our City will struggle to achieve its land use, economic, social and environmental goals. Currently, decisions on parking supply and management are made without specifically taking the objectives of other Council strategies into account.

Demand for parking in a given area is related to land use, the relative availability and reliability of public transport, the provision and quality of active transport infrastructure, demographic and socio-economic characteristics, pricing structures, the weather, time of day and many other factors.

The supply of parking is related to the availability and value of land, expected financial return to car park owners and government policies on the desirability and required extent of parking compared with other transport options. Our current policies have a

large impact on the quantity of parking, but do not consider the wider economic, social and environmental implications.

The supply of convenient and available parking in town centres is an ongoing challenge. Typically, parking supply is finite and demand increases as a town centre becomes more attractive for people to live in and visit. While new technologies and complementary policies present a number of innovative solutions, the critical challenge for the City is how to adjust parking demand to better relate to the levels of supply.

The existing regulatory framework has encouraged a strong supply of parking in our town centres. This has encouraged a perception that parking spaces have a low value. There is, however, increased recognition that the economic, social and environmental costs of an excessive supply of parking is very high.

Community feedback indicates that people want convenient and available parking. However, this can be difficult to deliver when parking demand does not align with parking supply. This 'parking dilemma' highlights why parking is often not convenient or available when we most need it. Parking policies need to establish a dynamic relationship between changing demand and parking supply.

PARKING DEMAND

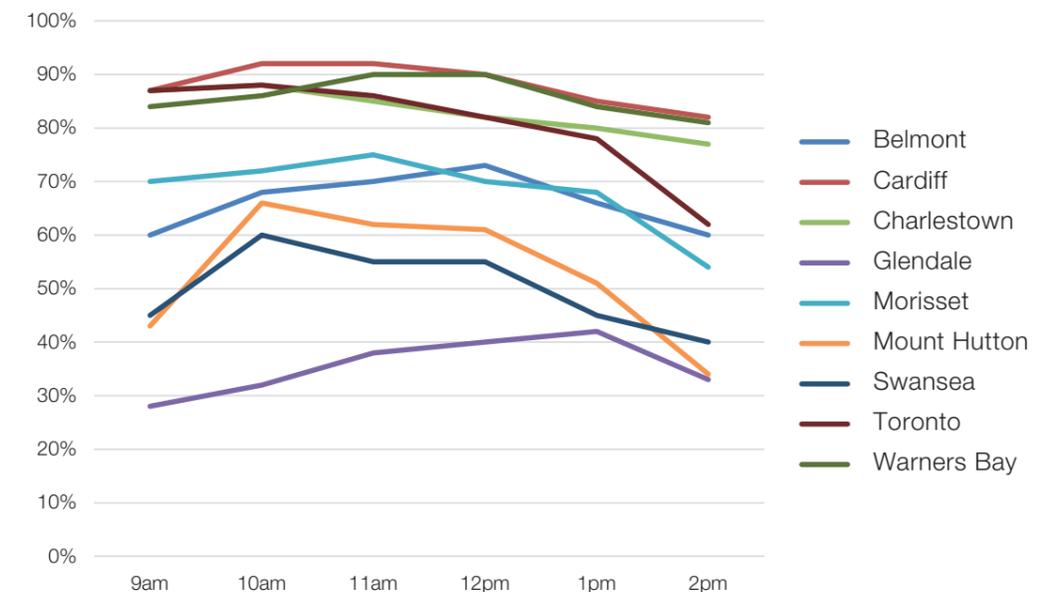
It is important to have information about the availability of parking across our nine town centres. Comprehensive parking surveys were conducted in all town centres during early 2016. These surveys measured the supply and demand for publicly accessible government and private parking. The surveys in

each centre were undertaken during March and April in 2016, as representative times of typical demand, not affected by Christmas, school holidays, or other deviations from long-term demand levels.

The tables below show that demand for parking is highest in the town centre cores of

Cardiff, Charlestown, Toronto and Warners Bay. All four of these centres have peak occupancy in excess of 85 per cent, which is considered to be the point where negative consequences of high demand occur.

Estimated occupancy (centre core, peak)



Underutilised parking supply was also identified across all town centres, typically at the fringe of the centre. These areas were often poorly linked with pedestrian infrastructure or didn't have adequate lighting, making their use after dark unappealing to users.

It should be noted that these parking surveys are a snapshot of parking demand at the time the surveys were undertaken. Parking demand shifts often and should be collected on a regular basis to better inform decisions on parking and monitor any interventions.



THE TRUE COST OF PARKING

Typically, the true cost of parking is rarely discernible or transparent. The costs tend to be incurred indirectly by people who are parking in the area and purchasing goods and services or by third parties such as ratepayers.

On a typical 20-metre wide road, parking occupies about one quarter of the space that may have a variety of other uses, like a shared pathway or outdoor dining. A single car parking space on the road occupies about 15m². The land cost to

occupy this one space in Warners Bay is about \$17,000, excluding the cost of construction and maintenance.

The cost of constructed parking structures varies depending on the value of the land. The cost of constructing a multi-level car park is about \$32,000 per space, excluding real estate costs. The cost of construction for underground parking varies from about \$50,000 per space, to more than \$75,000, depending on the type of soil or the depth of the water table.

BEST PRACTICE IN PARKING

As part of the development of this Strategy, an extensive review of national and international best practices in parking was undertaken. The following sections provide an overview of common themes identified that are relevant to Lake Macquarie.

This Strategy seeks to utilise best practice parking management techniques to balance parking supply and demand and support the City's Vision and Values of fostering transport choice, a thriving and diverse economy where our town centres are the focus of our growth.

Traditional parking management is based on a 'predict and provide' transport model, which maximises supply and minimises price. Under this approach, parking supply was determined on a site-by-site basis and parking costs were subsidised by the sale or lease of land, resulting in affordable rates.

A generous parking supply that enables good accessibility leads to a cycle of cheap parking, and increased demand for parking. In cities around the world, this model worked well when land was inexpensive and the surrounding road network was not congested. In congested urban locations, 'predict and provide' has led to high levels of

parking, an inefficient use of land and has hindered efforts to improve the environment and support walkable, vibrant areas.

Recent thinking in parking management promotes a strategic approach, achieved through area-based solutions with a focus on efficiency. Under this approach, parking supply and demand are managed through consideration of several elements that work together to ensure that multiple objectives may be realised. These elements include:

- prioritisation of parking users;
- flexibility;
- accessibility;
- occupancy;
- turnover; and
- pricing.

Best practice parking management suggests that car parking should be efficiently managed to allow greater urban densities, while improving quality of life for residents and visitors, and facilitating greater productivity for workers and business owners.



CURRENT APPROACH AND IMPLICATIONS

Parking is an essential component of the City's transport system, as it can have major implications for the convenience, economic viability, design and layout of an area. Parking in our town centres can be broadly separated into two areas:

- on-street parking; and
- public and private off-street parking.

On-street parking is generally a finite resource, with limited scope of increasing the number of spaces. Increasing the efficiency in use of these spaces is critical.

Off-street spaces are a mixture of publicly owned and managed, privately owned but publicly managed, and privately owned and managed. These spaces can range from surface parking to basement or above ground spaces within a building. Typically, these spaces are very expensive to construct and take up space that could be utilised for other purposes.

Parking is currently managed in an ad-hoc way through recommendations of the Traffic Facilities Committee and the application of parking rates contained in Council's Development Control Plan when new development is proposed.



ON-STREET PARKING

On-street parking management in Lake Macquarie broadly consists of the following:

- unrestricted, where there are no limitations on parking;
- time restricted, with a range of time limitations and enforcement used to ensure compliance; and
- reserved parking, reserved for a certain type of user, such as mobility cardholders, taxis, motorbikes or those loading goods.

Within the core of our town centres, the most prominent type of on-street parking is time restricted, with the majority of unrestricted parking outside

of the core. This indicates that Council is attempting to place a higher emphasis on the turnover of parking within the town centre cores, pushing longer-term parkers, such as workers, to the fringe of the centres.

This approach of prioritising the use of parking in the central business areas of town centres, based on the proximity of activity nodes makes strong economic sense. Visitors and customers of town centres are the most difficult to attract, add the most value to a centre and are much more likely to go to a different destination if they have difficulty finding a park.

Longer-term users, such as

workers, have less choice on where and when they travel and are far less likely to change their destinations based on parking difficulties. Research shows that this user group is far more likely to change their travel behaviours and walk, cycle or catch public transport when parking becomes more difficult or expensive.

Currently, only small areas of on-street parking within our town centres are delineated with line markings.

PARKING TIME RESTRICTIONS

Time restrictions for parking, when matched with effective enforcement, can provide equitable access to spaces through increased turnover. They also enable access to parking by short to medium-stay users during business hours, by removing competition from all-day commuters. Such measures should help balance use and availability, which is accepted internationally to be ideal as ranging between 60-85 per cent occupancy. This means that parking is well used, but some spaces are still available for visitors and customers.

A review of parking restrictions across all town centres indicated that there are considerable pockets with ineffective or unproductive time restrictions. In some areas,

large amounts of high-value parking spaces (those ideal for visitors and customers) do not have time restrictions, enabling all-day commuters to park in these spaces. This results in a highly inefficient use of parking resources.

The frequent variation in time-restricted zones was noticeable across many town centres. These variations in time restrictions appear to be ad-hoc and not the basis of rigorous transport or strategic planning, indicating they are most likely the result of complaints from individual businesses or landowners. This can result in confusion for motorists, worsening congestion through increased stopping and starting of traffic and decreasing the use of parking spaces.

To date, time restrictions have been the favoured tool to manage parking demand in the City. However, there are some negative consequences that must be considered. Time restrictions limit the amount of time consumers and visitors can spend visiting a town centre. In turn, this limits the activities they can undertake while there. Time restriction can also result in unnecessary vehicle movements, when people want to say longer they move their vehicle in order to complete their visit. Ensuring that time restrictions are appropriately set and monitored is critical to limiting these impacts.

OFF-STREET PARKING

Off-street parking within Lake Macquarie involves both private and public facilities. These range from at-grade parking areas and parking both above and below ground within building footprints.

A range of different management techniques are used for off-street parking. These include:

- unrestricted, where there are no limitations on parking;
- time restricted, with a range of time limitations and enforcement used to ensure compliance;
- reserved parking, reserved for a certain type of user, such as residents, customers,

mobility cardholders, taxis, motorbikes or those loading goods; and

- paid parking, where users are charged a fee for parking within the facility.

Currently, off-street paid parking is only utilised in a small number of private parking facilities.

PARKING ENFORCEMENT

Parking enforcement is an essential component of parking management, the wider transportation system and economy. Enforcement encourages the equitable turnover of vehicles to ensure customers and visitors have access to parking within our town centres. Enforcement also keeps traffic and public transport flowing on key arterial roads, maintains access to private property and increases

the safety for road users, cyclists and pedestrians. Currently, parking restrictions for the whole City are enforced by a small team equivalent to two full-time equivalent (FTE) officers, which is likely to be increased to four FTE officers by mid-2019.

Due to the spatial distribution of town centres across our City, parking enforcement is often responsive, instead of

proactive. In the 2015-2016 financial year, parking officers issued 1553 enforcement notices with an infringement revenue of \$365,000.

Currently, enforcement of parking restrictions is achieved through a labour-intensive method involving chalking tyres. Infringement notices are issued in the field by officers utilising digital devices and mobile printers.

MOBILITY PARKING

Ensuring that people with disabilities have full and direct access to all public places and services is a priority for the City. The provision of accessible transport and parking are central to realising this commitment. Designated parking spaces are provided for people with disabilities, usually close to central business

areas to allow mobility parking permit holders to park near their destination. A mobility parking permit allows people with disabilities to exceed timed parking restrictions.

In 2011, there were more than 13,000 mobility parking permits in the City. Parking occupancy surveys indicate that there are significant variations in

the use of accessible parking spaces across our centres. In addition, public submissions and field checks indicated that spatial distribution of these spaces may not be ideal and an accessibility review of each town centre is warranted.



PARKING FOR DEVELOPMENT

The number of parking spaces that a development must provide is specified within the Lake Macquarie Development Control Plan (DCP) 2014. Typically, the number of spaces relates to the size and type of development. The parking rates within the DCP 2014 are exact figures, requiring justification to go either above or below the rate for each development type. These requirements are generally consistent with the Roads and Maritime Services (RMS) guide to Traffic Generating Development. These standards are separated into two main groups, parking for residential development and parking for commercial development.

Parking for residential development

The DCP 2014 specifies two separate parking standards for residential development in business-zoned areas based on the number of bedrooms per dwelling:

Number of bedrooms	Spaces per dwelling (A rate)	Spaces per dwelling (B rate)
One bedroom	0.5	0.75
Two bedrooms	0.75	1.0
Three bedrooms	1.0	1.5

The A Rate is utilised in areas zoned B2, B3 and B4, where the dwelling is less than 400 metres from a railway station, transport interchange or a major bus route. The B rate applies in B1 and B4 zones, or in B2 and B3 zones where the A rate does not apply.

The assumption between the two rates is that demand for

private cars is lower in areas that are well serviced by public transport. While this is the case in many areas, within Lake Macquarie the larger indicator on car usage is the provision of active transport infrastructure and the proximity to active nodes, such as town centres.

Commercial parking in DCP 2014

For commercial development, parking standards within DCP 2014 are based on the specific land use and the size of the development. These rates are generally consistent with the RMS guide to Traffic Generating Development, which is based on the satisfaction of peak demand. These parking standards are generally set in isolation of broader policy objectives, such as Lifestyle 2030 and the City's Vision and Values.

Generally, parking standards for new developments vary significantly depending on the use. For instance, 100m² of office floor space will require 2.5 spaces. However, the same amount of floor space for a cafe

requires four spaces.

Typically, a single parking space takes up around 35m² when circulation lanes are included. A review of our parking rates within the DCP 2014 indicates that a significant proportion of land uses will result in more space being dedicated to parking spaces, than the actual land use.

For example, a small cafe with 100m² of floor space requires four parking spaces, totalling about 140m². This imbalance between active and productive uses and car parking spaces results in a poor economic use of the land.

In addition, the parking rates within our DCP creates issues when there is a change of land

use proposed for an existing building. If, for instance, a building was approved as an office and is no longer required, difficulties can arise if another use is proposed that requires additional parking spaces. This can result in the building remaining vacant.

These costs have a negative impact on development viability and the final cost of goods and services. In addition, as the cost of land is significantly higher in our town centres, it also inadvertently encourages businesses to relocate outside of our centres.

MINIMUM PARKING REQUIREMENTS

Minimum parking requirements are regulations that require new developments to provide a minimum number of car parking spaces. The standards are identified within DCP 2014 and typically relate to the size and type of land use of the development.

For residential development, the number of car parking spaces required is based on the number of bedrooms in each dwelling. For commercial and industrial developments, the rate is based on the Gross Floor Area (GFA) or Gross Leasable Floor Area (GLFA) of the land use proposed. These requirements place the responsibility of meeting parking demand onto private developers. The intent of requiring each individual development to supply its own parking is to minimise spill over into the street network.

Minimum parking requirements are typically based on the RMS guide to Traffic Generating Development. The requirements in the RMS guide are based on historic surveys undertaken in the United States during the 1950s and '60s in areas that were perceived to not have a parking problem. The implicit assumption is that parking in the areas where these initial surveys were undertaken met, and will continue to meet, the needs of dynamic and diverse centres such as in Lake Macquarie.

Planners began to assume that people would travel everywhere by car, park at their destination, then drive to their next destination. They failed to take into consideration multi-purpose trips. Off-street parking requirements have encouraged everyone to drive wherever they go because they know they can usually park for free when they get there.

There is a growing body of research indicating that the unintended consequences of minimum parking requirements outweigh the benefits. These include:

- **Housing affordability:** requiring the provision of parking, irrespective of whether it is required, increases development costs and decreases housing affordability.
- **Economic growth:** parking takes up valuable floor space and increases development construction costs, which in turn raises the price of goods and services sold.
- **Urban design:** a great street is defined by activity, street-facing windows and interesting facades. Excessive off-street parking located between buildings can disrupt the quality of such streetscapes.

- **Traffic congestion:** an abundance of low-cost parking stimulates excessive demand for vehicle travel based on travel and lifestyle patterns.
- **Environmental sustainability:** excessive vehicle use reduces the sustainability of high-density urban areas, especially town centres.
- **Social inequality:** the indirect costs created by minimum parking requirements fall disproportionately on low-income households.
- **Urban form:** requiring the provision of parking within each individual site fragments the urban form with numerous parking areas and contributes to urban sprawl as more land is needed to provide for activities.
- **Competitive centres:** minimum parking standards encourage development to occur where land values are lowest, such as business parks and industrial areas.

COST OF PARKING



There is a considerable body of research showing that providing unpriced or low-cost parking is one of the largest transport and planning issues in growing regions. The provision of unpriced parking means that the users are not paying for it directly. Parking, however, is never free; the cost of creating one car parking space ranges from about \$25,000 for an open-air car parking space to more than \$60,000 for a basement parking space. Due to the high cost of building car parks and the current unavailability of paid parking in the City, this cost is shifted on to the goods and services purchased or to ratepayers for public parking spaces.

This cost shifting, or externalisation, is particularly unfair for people who use alternative modes of transport, such as walking, public

transport or cycling. About six per cent households in our City currently do not own a vehicle. This increases to between nine per cent and 22 per cent of households in or neighbouring our town centres. These households are footing the bill for parking that they are not using.

Where land is limited, developers find it difficult to meet parking requirements while ensuring development is economically viable. This constraint is of particular relevance to town centres that have relatively high concentration of smaller properties, such as Cardiff. In the short term, building more parking makes it easier to find a space. However, the overall cost of this approach is enormous. Because parking is so plentiful, it is free, and because it is free,

people invariably overuse it and any increase in supply is quickly taken up. One study in Washington found that the availability of ample free parking is strongly correlated with a 97 per cent chance somebody will drive to work alone. The money and land required for car parks makes life more costly for everyone, even those who do not drive.

By designing more intensive mixed use, walkable town centres, the need to travel by car is reduced, as is the demand for parking spaces. By decreasing the proportional amount of parking provided in town centres, we can enhance the amenity and walkability of the centres. The economic benefits of more walkable centres far exceeds the benefits of increasing parking supply.



ENVIRONMENTAL IMPACTS

The significant environmental costs associated with parking are not typically factored into development decisions. Only recently has this issue begun to be considered in parking requirements in other jurisdictions.

Being predominately impervious surfaces, parking areas increase stormwater runoff, water pollution and flooding. In addition, large areas of parking creates 'heat islands' or areas of artificially raised temperatures. This leads to increased evaporation rates, lower urban amenity and higher energy consumption.

Consuming land for parking also reduces the land available for open space or other, more productive development. Land developed for living, working and shopping, rather than just parking, provides a more intensive and productive use. This lowers the demand to develop other land nearby or elsewhere in the City. Intensifying uses also creates a more supportive environment for other modes of transport such as cycling, walking and public transport.

Providing more parking than demanded, and at artificially low prices, also has negative environmental consequences. First, the subsidy of car usage leads directly to excess driving. This results in increased car dependency and air pollution, accidents and congestion.

Second, it indirectly degrades the attractiveness of walking and cycling by increasing distances between activities and creating uninteresting routes. Third, it indirectly undermines the potential for transit services by decreasing the density of development possible.

All of these environmental costs tend to be greater for parking built in greenfield areas where land is cheaper. However, this land is typically more ecologically sensitive and creates a situation where development densities are lower, requiring more and longer car trips. Because these environmental costs are not realised by developers, they do not influence development decisions, which are driven primarily by the direct financial costs that are lower in greenfield areas.



COMMUNITY ENGAGEMENT

A comprehensive community engagement program underpinned the development of this Strategy. Through the promotion and advertising we:

- reached about 20,000 residents via social media;
- sent eNewsletters to 6000 email addresses;
- had more than 4500 visitors to the project webpage;
- distributed almost 3000 postcards to residents and businesses;
- placed posters across all town centres; and
- had several articles in local newspapers.

The response to the community engagement was strong, with more than 600 surveys completed and almost 800 comments and submissions identifying parking issues and sharing ideas for improving access and mobility across our City.

During the exhibition consultation phase, October-November 2017, we sent an additional 6000 eNewsletters and reached more than 4800 people through social media. There were 830 visits to the exhibition page with 440 downloads of the draft Strategy, and we received 38 submissions during this consultation.

PARKING PERCEPTIONS SURVEY

A key component of the initial community engagement was the parking perceptions survey. The objective of this survey was to identify how people travel to, and use our, town centres and their perception of parking difficulties. The survey was predominately completed online through the project website; however, paper versions were distributed to various community groups. A copy of the survey can be found in the appendices.

TRAVEL MODE SHARE

The survey results indicate that about 70 per cent of trips to our centres are by car, with 24 per cent by walking or cycling and the remaining six per cent by public transport. This data generally correlates with the Bureau of Transport Statistics Household Travel Survey for the whole City.

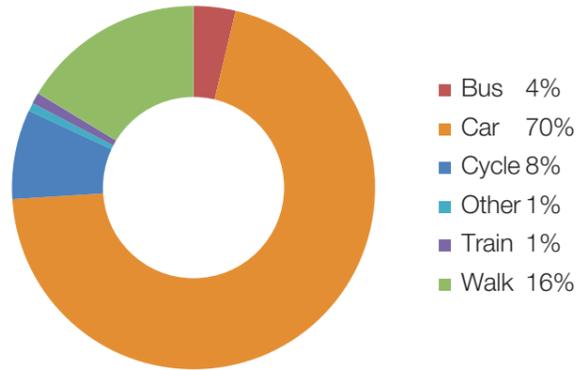


Figure 1 Travel mode share - all town centres

Typically, the uptake of walking and cycling to individual centres was dependant on the level of safe infrastructure provided. For example, Warners Bay is has a significant shared pathway linking some of the

adjoining areas. This appears to have resulted in a larger trip mode share for walking and cycling to the town centre, at 19.5 per cent and 9.1 per cent respectively.

PRIMARY TRIP PURPOSE

Across all town centres, the primary activity people undertake when visiting a centre is shopping, at 35 per cent of all trips, followed by personal business, at 22 per cent, and social and recreation, at 19 per cent. Commuting to the centres made up only 10 per cent. Similar to the travel mode share data, the trip purpose data from the survey generally correlates to the Household Travel Survey.

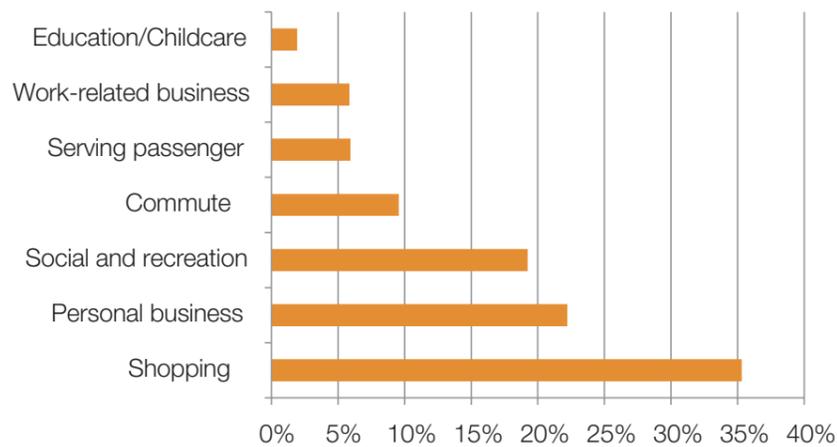


Figure 2 trip purpose - all town centres

DURATION OF VISIT

The survey respondents also indicated that more than 60 per cent of visitors to our town centres stay less than two hours, 19 per cent stay

between two and four hours, with the remaining 21 per cent staying more than four hours.

ACCEPTABLE WALKING TIME

The survey asked what people thought was an acceptable walking time between their parking space and destination. The results show that the majority of people are willing to walk five minutes or more to reach their destination.

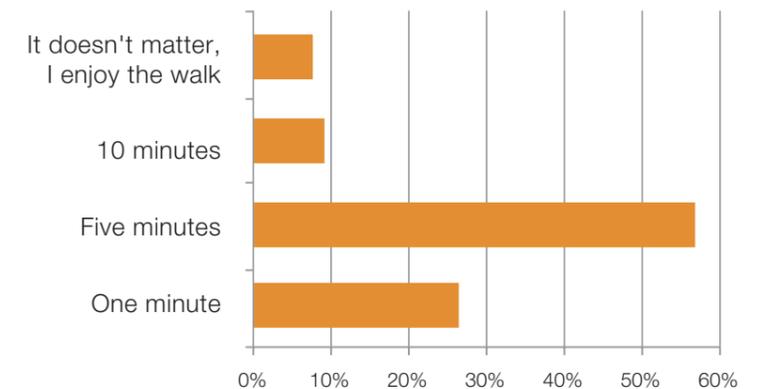


Figure 3 acceptable walking time - all town centres

MULTI-PURPOSE TRIPS

Of the respondents, a high number of people visited multiple destinations each time they visited a town centre. This is important, as it indicates that people are parking once and walking around the centre.

Typically, those who only visited a single destination had a trip duration of less than one hour. Those who commuted to a centre for work purposes generally visited two or three destinations.

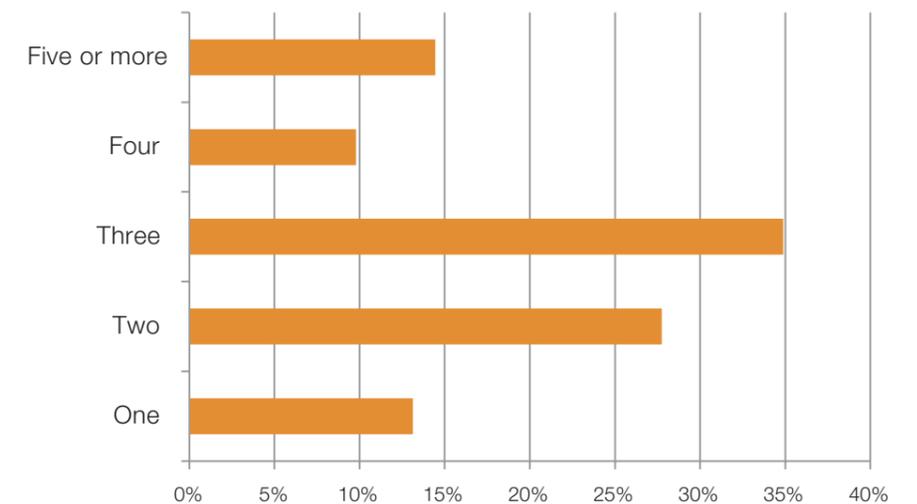


Figure 4 number of destinations per trip

PERCEPTIONS OF PARKING DIFFICULTY

The survey asked people to indicate how easy or difficult it is to find a park in each town centre. Cardiff and Warners Bay have highest perception of parking difficulties with 70 per cent and 78 per cent of respondents, respectively, finding it difficult to find a park. Mount Hutton and Glendale had the highest rates of people who found it easy to park.

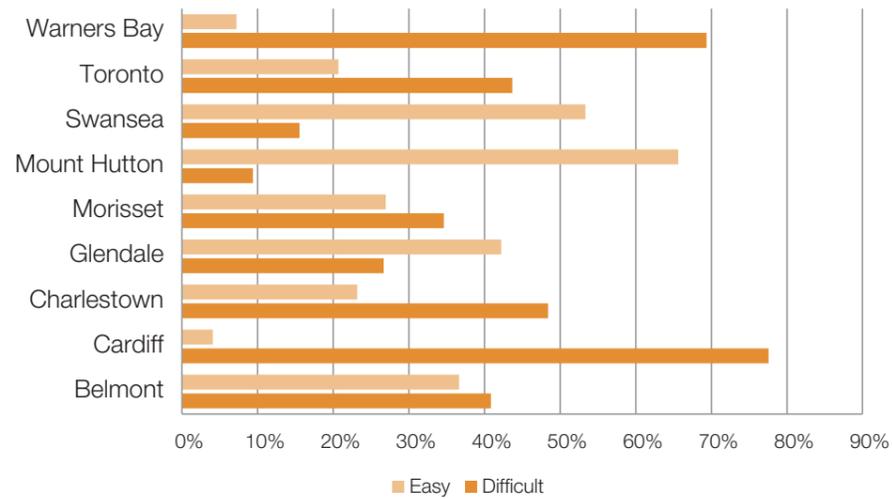


Figure 5 Perception of parking difficulty by town centre

Typically, people found it most difficult to park on Thursday, Friday and Saturday. This result was consistent across all town centres.

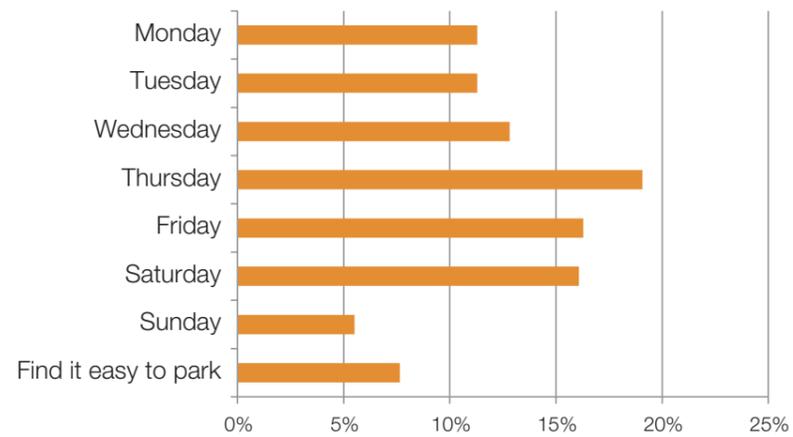


Figure 6 Difficulty parking by day



The times of day people found it most difficult to park was also consistent across most centres, with the majority of respondents finding it most difficult to park between 10am and 2pm. Charlestown and Cardiff had slightly earlier peaks, most likely due to the higher number of people who commute to these town centres for work purposes.

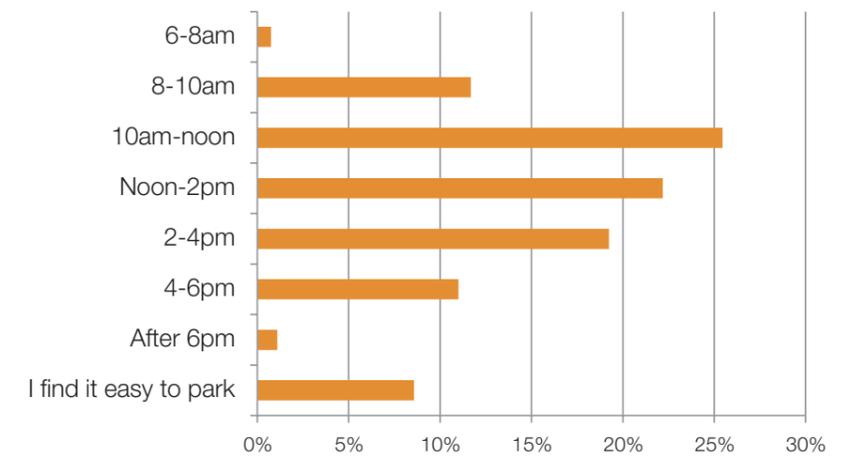


Figure 7 Difficulty parking by time

COMMENTS AND SUBMISSIONS

As part of the initial community engagement, we asked stakeholders to identify location-specific issues with parking and ways to improve transport across our City. The response was very strong, with more than 800 comments and submissions received.

The strongest theme identified within the comments and submissions related to walking, followed by town centre specific parking problems, the location of spaces and cycling ideas and issues.

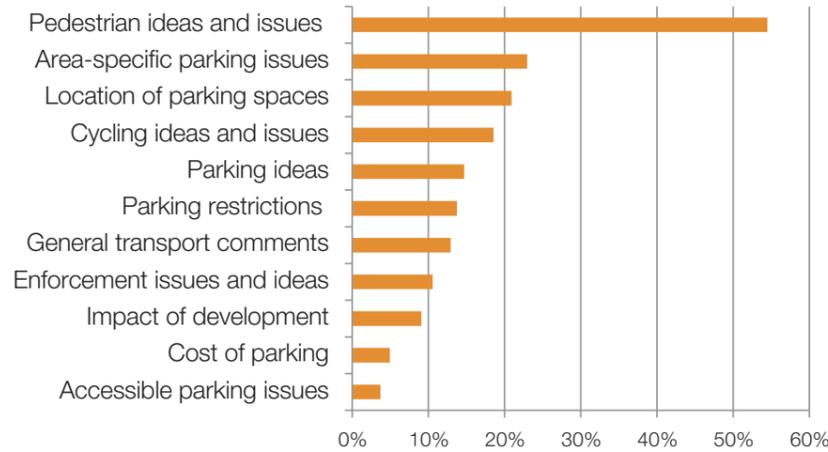


Figure 8 Submissions and comment analysis

Within the pedestrian issues and ideas theme, the most frequent comment related to the lack of adequate pedestrian infrastructure within and surrounding our town centres. Many comments indicated that this lack of safe pedestrian infrastructure was increasing demand for parking spaces, as no alternative to driving was being provided. In addition, many comments related to poor design within parking facilities with a lack of clear and safe areas for people to walk to their destinations.

Other key themes identified within the comments include:

- inconsistency or lack of timed parking restrictions, particularly in high-demand areas close to high-activity areas in centres;
- the location of public parking areas;
- the lack of safe cycling infrastructure to and within centres, increasing the demand for parking;
- the perceived lack of enforcement of timed parking restrictions and illegal parking; and
- the impact of residential development on the demand for parking.

COMMENTS FROM SURVEY PARTICIPANTS

WE HEARD WHAT YOU SAID

The open parking is ugly, hot and almost always full. It makes walking dangerous as there is no clear path through the spaces for pedestrians.

I usually park 10 minutes away but as I work mostly 7pm to 11pm, it's quite dangerous walking to my car.

This has become a major street for parking over recent years for employees. As a result the street is consistently full and clients of local businesses cannot get a park.

Sometimes you have to drive around for 10 minutes or longer just to try and jag a spot. This increases the risk of an accident and is most annoying and inconvenient. No doubt potential business is being lost.

More footpaths so people can walk!

Vehicles are often parked incorrectly and take up spaces. The roadway ought to be painted with marked spaces.

Council needs more Rangers to enforce the timed parking restrictions!

We are business owners so park on premises. We are very disgruntled with disrespectful people, other business owners and their staff parking in one hour parking spaces all day!

Parking right in the centre can be difficult. With some better footpaths, people could comfortably park a little further away.

COMMENTS AND SUGGESTIONS RECEIVED DURING EXHIBITION CONSULTATION

During October and November 2017, the draft Lake Macquarie Parking Strategy was on exhibition for community feedback. From the 38 submissions received, the main comments and suggestions

included improvements to public transport, increase in pedestrian infrastructure, greater enforcement and more sustainable travel options.

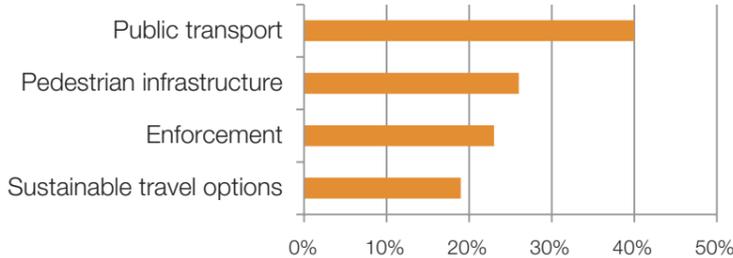
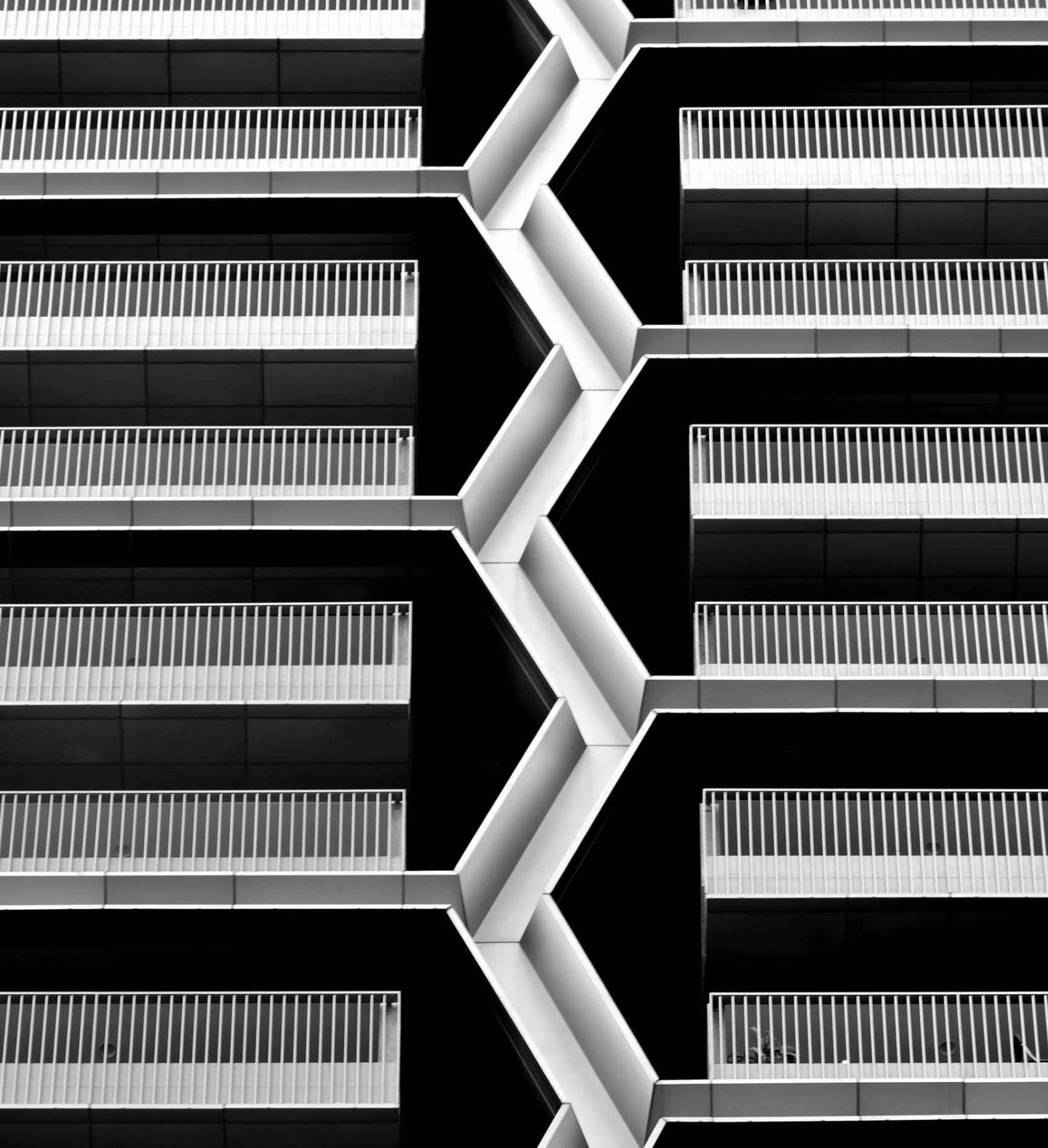


Figure 9 Exhibition submissions and comment analysis





THE NEW DIRECTION FOR PARKING

In the past, the approach to parking has been to provide as few constraints on the supply of free parking across the City as possible. Parking policy was directed towards demand satisfaction, rather than demand management. Such an approach assumed:

- an unconstrained capacity of the road network to accommodate the demand for access by private cars;
- the availability of cheap land and capital investment for the construction of more and more parking spaces;
- a lack of viable alternatives to private cars such as public or active transport; and
- parking supply should accommodate all demand for car access directly on site.

To ensure the economic vitality and liveability of our town centres, this approach is no longer viable. Without a substantial shift in parking policy, our centres will continue to struggle to compete economically with other areas within and outside of our City. As a City, we must look at opportunities to optimise and improve the efficiency of our existing parking resources.

Internationally, parking management is undergoing a fundamental change in how the problem is perceived and solutions evaluated. The old approach assumes that parking should be abundant and free at most destinations.

It strives to maximise supply of parking, irrespective of the cost. The old approach assumes that parking lots should almost never fill, that parking costs should be incorporated into the cost of building or subsidised by ratepayers and that every destination should satisfy its own parking requirements.

The new approach strives to provide optimal parking supply considering the true costs involved. It considers too much supply as harmful as too little and prices that are too low as harmful as those that are too high.

The new approach seeks to maximise the efficiency of existing parking resources. It considers full parking areas to be acceptable, providing that additional parking is available nearby, and that spill-over problems are addressed. It emphasises sharing of parking facilities between different land uses. It favours charging parking facility costs directly to users and providing financial rewards to people who reduce their parking demand.

The new approach to parking recognises that transport and land use conditions evolve, so parking management needs frequent adjustment.

MANAGING PARKING DEMAND



The construction of parking structures is expensive and they rarely pay for themselves. The design and management of parking supply affects the liveability and walkability of our centres. Building additional parking without managing the existing supply can induce driving, which in turn increases the demand for even more parking. This effect is known as 'induced demand'. Conversely, managing the existing supply can be a cost effective way of reducing demand or increasing the use of underutilised spaces. A desirable occupancy rate is 85 per cent, where one or two spaces are open on each street at all times. When parking occupancy rates approach 90 per cent, drivers spend extra

time searching for parking and this adds to congestion on our roads. The results of the parking surveys undertaken in 2016, show pockets of high occupancy in all town centres at certain times of the day and underutilised parking in other parts of the centres at different times of the day. The most effective way to shift demand from one area to another is through pricing mechanisms. However, additional policies and practices can also be highly effective, such as the use of strictly enforced parking time restrictions or in-ground parking sensors. Factors affecting the impact of parking management include residential and employment densities, access

to public transport, income levels and, critically, cycling and pedestrian infrastructure. Town centres with limited or unsafe alternatives to driving require additional resources to improve pedestrian and cycling infrastructure prior to attempting to implement parking pricing. The investment in these community assets should be directed towards increasing access to parking supply within our town centres and providing links from high-density areas back into our centres.

CASE STUDY – SF PARK

San Francisco's SF Park initiative aimed to increase parking convenience in their centres. They utilised wireless, real time parking technologies including in-ground sensors to acquire detailed parking demand data. This data was used to adjust time restrictions and the price of parking on a block-by-block basis.

The most recent evaluation report on the project found:

- As the economy, population and overall parking demand grew, parking availability improved dramatically in the pilot areas. The amount of time that the target parking occupancy (60 to 80 per cent) was achieved increased by 31 per cent in pilot areas, compared to a six per cent increase in control areas.
- The amount of time that a block was too full, making it difficult for drivers to find a park, decreased 16 per cent in the pilot area, while increasing 51 per cent in the control areas.

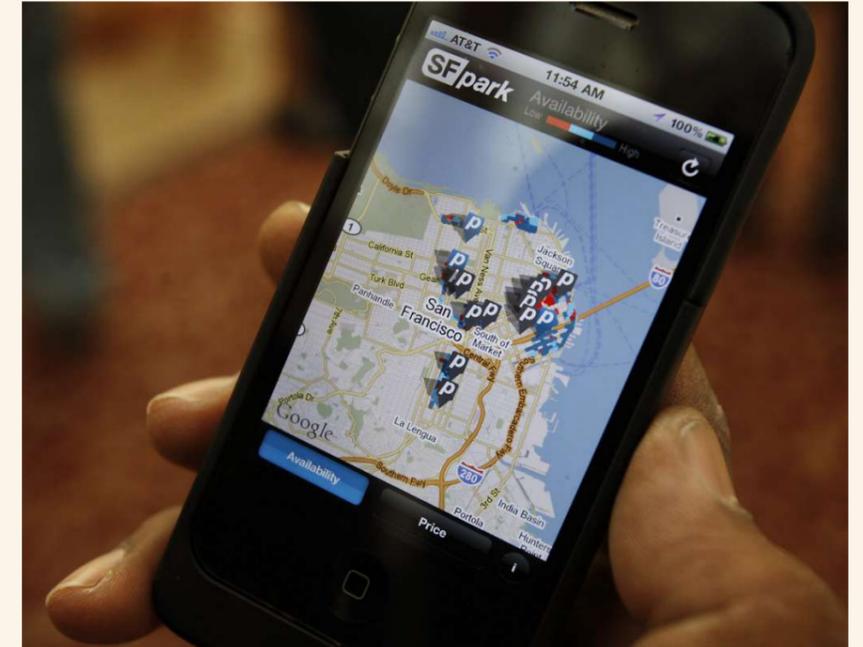


Image courtesy www.sfgate.com

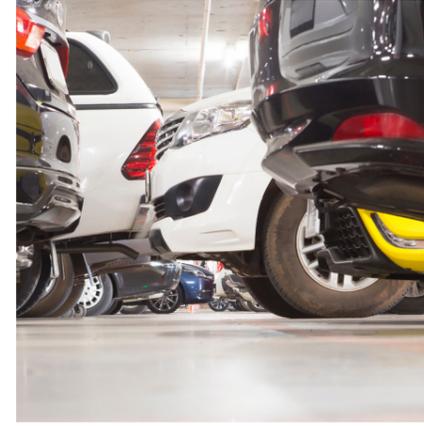
- The amount of time people took to find a park decreased by 43 per cent to just over six minutes.
- Greenhouse gas emissions per day from drivers dropped 30 per cent from 2013 levels in the pilot area, compared to a six per cent decrease in the control areas.



STRATEGIC OBJECTIVES

This Strategy's desired outcomes have been informed by key Council plans and strategies, best practice and feedback received from the community. These have been aggregated into four key objectives:

- strategic parking management;
- transport choice;
- parking efficiency; and
- cost of parking.



STRATEGIC PARKING MANAGEMENT

Objective:

To improve economic vitality, local amenity, access and mobility within our centres.

Description:

- Optimise the availability and convenience of parking by encouraging the high turnover of parking spaces in the core of centres. Low turnover, longer-term parking spaces are to be located at the edge of the centre.
- Balance the need for on-street vehicle parking with other access and mobility options, including access for services and place-making functions such as footpath dining, streetscape works, dedicated cycle lanes and wider footpaths.
- Ensure that the enforcement of parking restrictions is transparent and equitable for all users.
- Ensure new development does not detrimentally affect the availability of on-street parking.
- Actively monitor and respond to changing parking conditions.

Key tools:

1. Transport management plans
2. Parking for development

TRANSPORT CHOICE

Objective:

To improve walking, cycling and public transport options to and within our centres.

Description:

- Recognise and understand the impact parking supply has on the viability of walking, cycling and the use of public transport to and within our town centres.
- Enhance the amenity and public realm within our town centres to ensure a pedestrian-focused environment.
- Ensure that nearby residential and other activity nodes are well serviced by walking and cycling infrastructure.
- Continue to increase the number of people living in, and close to, our town centres to minimise any increase in parking demand.

Key tools:

1. Transport management plans
2. Parking for development

PARKING EFFICIENCY

Objective:

To make the best use of our parking resources.

Description:

- Provide parking space markings and simple consistent signage to improve efficiency of on street parking.
- Provide real-time information to improve customer service for users of parking and assist in the efficient management of parking.
- Employ new technologies, such as smart parking sensors, web portals and electronic signage, to improve the efficiency of parking, and to inform people of parking availability.
- Investigate emerging technologies, such as licence plate recognition systems, to encourage turnover of high-value spaces through effective enforcement.

Key tools:

1. Parking technology
2. Transport management plans

COST OF PARKING

Objective:

To understand and recognise the real cost of parking and provide choice to consumers.

Description:

- Improve the understanding of the true social, environmental and economic costs of subsidised parking.
- Investigate and implement a demand-based pricing structure for public parking spaces.
- Invest any revenue from parking into streetscape, public realm and active transport improvements to enhance local accessibility and urban amenity.
- Ensure that development in our town centres is viable and provides choice to consumers and end users.

Key tools:

1. Parking for development



TRANSPORT MANAGEMENT PLANS

Transport management plans (TMPs) are the key implementation tool for place-specific actions of the Strategy and the primary vehicle to deliver the objectives of the Lake Mac City Parking Strategy. These plans take a holistic view of how people move to, and around, our town centres and are informed by high-level Council strategies, such as Lifestyle 2030 and any successors.

From a parking context, TMPs provide guidance on how to manage parking in centres with parking demand pressure over the short, medium, and long term. These plans should be based on the recommendations within this Strategy and any recommendations from the Transport Strategy expected to be completed in late 2018.

The high-level aims for parking in the TMPs for each centre are to:

- increase parking space turnover in high-demand areas to improve parking availability;
- better distribute demand for parking across the whole centre;
- reduce congestion and the number of cars circling, looking for available parking; and
- increase the pedestrian environment and connectivity from underutilised parking areas back to the main activity nodes.

Each of our nine town centres will require a TMP to be prepared. The order for preparing TMPs is based on the following priority list:

1. Charlestown;
2. Cardiff;
3. Toronto;
4. Warners Bay;
5. Belmont;
6. Morisset;
7. Swansea;
8. Glendale; and
9. Mount Hutton.

TRIGGER APPROACH TO PARKING MANAGEMENT

The management of parking within the TMPs will be based on a trigger approach and will utilise the full range of actions identified within this Strategy. These plans can ensure off-street parking is available where it is needed, including park and ride opportunities at major transit hubs. Refer to the TMP trigger table in the appendices. As discussed in Section 7.2, the optimal efficiency for parking occupancy is 85 per cent. At this level of occupancy, parking spaces are being frequently used; however, if drivers wish to find a space, one is available.

Once 85 per cent occupancy in a block has been exceeded, negative consequences, such as congestion from circling for spaces, occur.

Actions or interventions are required to lower demand at or slightly below 85 per cent by distributing demand more evenly across the town centre.

If occupancy is significantly below 85 per cent, it indicates that demand for parking is low in the area and a review should be undertaken to ascertain why this is the case. It may be that restrictions on parking in the area may be too high and should be relaxed or removed.





PARKING MANAGEMENT TOOLS

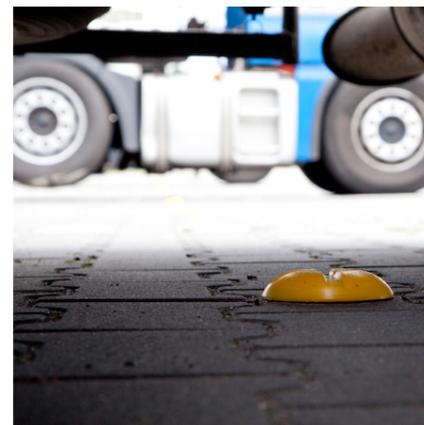
Based on best practice research and community feedback, the following tools are available to better manage parking in our centres. The TMP for a specific centre will select the most appropriate combination of tools to achieve the objectives of this Strategy and keep parking occupancy at 85 per cent. The range of tools is listed below, with additional information provided in the following sections of this document.

- line markings
- timed parking restrictions such as residential parking schemes;
- parking technology including improved enforcement, a smart parking trial and parking sensors;
- active transport;
- parking rates for development such as unbundled parking and shared facilities;
- demand-based paid parking including a Parking Pricing and Investment Policy and price variations; and
- construction of additional parking.

LINE MARKINGS

The delineation of parallel on-street parking spaces through line markings can assist in directing drivers on where to park. Where there are no lines delineating spaces, it is often observed that people are confused as to where to park. This can lead to an increase in accidents, illegal parking and blocked driveways. In areas where there are multiple barriers to parking, such as driveways, improvements in parking efficiency can be gained by simply marking spaces. The simple marking of on-street parking spaces can effectively increase the number of parking spaces available for use. It is estimated that line marking could increase parking supply in some areas of between five and 10 per cent, while lowering rates of illegal parking.

Only small areas in our town centres utilise line marking for on-street, parallel parking. The result of the lack of delineation of parking spaces results in an inefficient utilisation of this valuable on-street resource.



TIMED PARKING RESTRICTIONS

The availability of convenient, accessible, safe and well-located short-stay parking for visitors and customers is essential to the economy of individual businesses and centres and the social services provided by public institutions. Due to its economic importance, high-priority use of public parking in centres should be for short-stay parking and loading purposes.

To ensure the spaces that are the most attractive and convenient for visitors to a centre are available for their use, measures are required to limit the duration of stay. These consist of controls over the length of stay with high levels of enforcement or a dynamic, market-based approach to parking management. The latter is recognised as the most efficient management practice to ensure a high range of turnover for the spaces in most demand.

There is ample evidence that the availability and cost of long-stay parking influences decisions on the mode of transport used for the trip to work. Combining measures to improve active and public transport quality with measures to limit the available long-stay parking, encourages a change in travel behaviour and enhances the effectiveness of the public transport system. In addition, managing parking in centres, particularly on-street parking, to prioritise use by customers and visitors over commuters who park for a longer period, supports the economic vitality of businesses in the area.

RESIDENTIAL PARKING SCHEMES

Residential parking schemes can be an effective tool to manage parking spill-over from surrounding commercial areas. These schemes improve the amenity of areas and provide equitable use of on-street parking spaces.

The implementation of residential parking schemes requires the approval of RMS. Typically, residential parking schemes only apply in areas where residents have limited off-street parking and have difficulty parking near their residence. However, recent changes to the RMS guidelines indicate that more flexibility in the application of schemes will be supported.

SMART PARKING TRIAL

This strategy recommends a trial of in-ground parking sensors or other alternative parking occupancy monitoring technology in one or more of our town centres. The use of this technology may form part of the recommendations within the TMPs.

A key element of the smart parking trial is the use of sensors to register if a parking space is occupied. These provide real time parking occupancy information both to the customer and, importantly, to enforcement officers. This facilitates more effective and efficient enforcement of parking restrictions and distributes parking demand more evenly across the town centre.

The benefits of in-ground parking sensors include:

- real-time information on each and every parking space;
- the ability to guide drivers to available spaces, reducing congestion;
- instant information on parking overstays;
- enabling ticketless, barrier-free payment systems; and
- maximises the use of parking spaces.

This Strategy recommends that a business case be developed for a smart parking trial in at least one town centre. Line marking is a prerequisite to this trial. The trial would form part of the implementation of the TMP.

IMPROVED ENFORCEMENT

One of the most important aspects of parking management is having effective and transparent enforcement of parking restrictions. Currently, our enforcement team are operating at high levels of efficiency; however, with nine town centres scattered around the Lake, additional resources and tools are required.

Vehicle-mounted licence plate recognition systems allow the enforcement of parking restrictions to be undertaken much faster than traditional methods. These systems utilise multiple cameras mounted in a pod on top of the car to detect how long a vehicle has been parked and whether it is compliant with any parking restrictions. If a vehicle is found to be non-compliant, evidence is then gathered by the systems and distributed back to Council for assessment purposes. The system also collects high volumes of accurate parking occupancy data, which is an essential element to multiple recommendations within this Strategy.

It is recommended that a business case be developed for the use of vehicle-mounted licence plate recognition systems. Other technologies that improve the operational aspects of enforcement should also be investigated as new products and technologies emerge.



DEMAND-BASED PAID PARKING

Paid parking is a technique used to manage parking demand and supports the principles of consumer choice and prioritisation. By placing a monetary value on parking, we remove a substantial subsidy that encourages people to drive more and contributes to higher turnover without the inconvenience of time restrictions. However, the public perception is that parking is a common good and any price placed on its use is merely revenue raising.

Paid parking ensures that the user pays for parking and it is not subsidised by other groups, such as those who do not own vehicles or those who drive less. It is key to improving the efficiency of the parking system as the parking supply is prioritised for the high-value customer, while discouraging the long-stay users, such as commuters.

Setting the correct price for parking is essential. If car parks are overpriced then the spaces will not be used. However, if the spaces are under-priced they are likely to become saturated and other potential users will not be able to park. This is what is being experienced across all town centres in Lake Macquarie.

Paid parking is suited to areas experiencing consistently more than 70 per cent peak occupancy. For example, the data collected from areas in Charlestown, Cardiff, Warners Bay and Toronto are some areas where pricing parking would create natural turnover, instead of forcing people out of the centre through the use of time restrictions.

Research has shown that the demand for parking

is elastic and can be reduced by up to 30 per cent when pricing is introduced. Long-stay parking is usually more elastic than short-stay parking. This means that long-stay parking users, like commuters, are more likely to park in the lowest priced areas or make other travel choices where an acceptable substitute exists. This frees up parking for high-priority consumers and visitors to town centres.

One of the key aims of parking management is to allow transport users to make more informed choices about transport options. To achieve this, the true cost of transport modes should be paid directly, not externalised. Using this approach, the value of resources will become better understood, allowing people to make informed choices about how they travel. This will lead to alternative transport options becoming more attractive and viable.

The best practice approach in parking management dictates that the highest value parking, on-street spaces close to activity nodes, should be regulated to ensure the highest turnover and efficiency of use. When paid parking is introduced in off-street areas, leaving the highest value on-street spaces unpriced, the demand for these spaces will increase, resulting in increased congestion and non-compliance with time restrictions.

Pricing high-demand on-street parking helps to ensure that long-term parking, such as commuters, will shift to off-street parking and free up on-street parking for consumers and

visitors. Thus, paid parking is most appropriate in areas with high occupancy. Paid parking is about managing the demand for parking, not about revenue collection. If parking is priced correctly, the effect will be that on-street parking has a higher turnover and the long-term parking shifts users to off-street facilities. When considering paid parking, best practice states that any revenue collected needs to be reinvested back into the town centre.

The practice of managing and pricing on-street parking according to actual demand is known as 'demand-based paid parking'. This utilises place-specific demand data from new technologies, such as in-ground parking sensors, to determine the price of parking based on the actual demand. Where the demand for parking is high, the price increases incrementally. Where demand is low, the price is lowered. This differs significantly from traditional paid parking systems, which typically adopts a 'set and forget' approach. The result is that demand for parking can exceed the supply if prices are set too low or spaces are unused if the price is set too high. This renders traditional paid parking ineffective as a tool to manage demand.

Demand-based paid parking allows Council to gradually and periodically adjust parking rates up or down. The goal is to achieve a minimum level of price, to ensure it is easy to find a parking space most of the time. Furthermore, meeting the occupancy target of 85 per cent means improving the utilisation of parking so that spaces, on-street and off, would not sit unused. Under this scheme, Council is obligated to find the lowest price for parking possible to achieve the goals.



PARKING PRICING AND INVESTMENT POLICY

Research indicates that where a price on parking is introduced, communities tend to support the use of any parking revenue to fund local improvements in an open and transparent way.

Prior to the implementation of any paid-parking scheme within the City, a Parking Pricing and Investment Policy must be adopted by Council. This Policy must clearly identify:

- how any parking funds are to be reinvested back in the community where they were collected;
- the type of projects that are suitable for funding;
- how projects subject to funding are to be identified and the role the local community plays in identifying and prioritising projects; and
- how the funds will be managed, including any recoupment of operational and administrative costs.



SHARED PARKING

Shared parking is the use of a parking space to serve two or more individual land uses. The practice is often found where parking is not tied to a particular building and its uses, but can be used by anyone visiting any of the nearby buildings or activity nodes. It is a vital component in a good mixed-use or transit-oriented development, or anywhere that improved liveability is a goal. The pedestrian environment and local economy also benefits significantly from shared parking.

The key to shared parking is that a mix of uses require parking at different times of the day or different days of the week. For example, an office building in the same development as a restaurant would be a good candidate for shared parking. The peak parking demand for office workers will be from 8am to 5pm, Monday through Friday, where the peak demand for a restaurant is typically outside of these hours, when office workers are not using the parking.

Instead of providing parking for both uses, it is much more efficient to share the spaces, opening up the land or part of the building for other types of development or improved public space. Shared parking also encourages people to park once and walk between destinations served by the same parking facility, instead of driving between uses that would otherwise each have their own parking.

The construction of additional public shared parking should only be considered once all other actions to improve the use of the existing resources have been exhausted. Where a proposal for additional parking is being considered, it should be located on the edge of the centre where it can serve the most number of users, with strong pedestrian links back through to the main central business area.



ACTIVE TRANSPORT

One of the keys to effectively managing the demand for parking is having a safe and inviting pedestrian environment in our town centres. This was a strong message we received from the community during the initial engagement period.

By providing critical pedestrian and cycle links both to and within our centres, walking and cycling becomes more appealing and convenient. These links are also critical to improving the use of public transport.

Council must realign our delivery programs within our Cycling and Footpath Strategies to focus on providing effective and safe pedestrian and cycling infrastructure to and within our town centres. This will facilitate the movement of people within our centres, allowing people, such as employees, to safely park slightly further away from key activity nodes, freeing up spaces for visitors and customers.



PARKING FOR DEVELOPMENT

Parking adds a significant cost to development. These costs have a negative impact on housing affordability, development viability and, importantly, the cost of goods and services. It also encourages businesses to establish out of a centre, where land (and therefore the provision of parking) is cheaper. This is inconsistent with Council's adopted Vision and Values.

PARKING STANDARDS FOR RESIDENTIAL DEVELOPMENT

As outlined in section 5.6.1 of this Strategy, Council's DCP 2014 has two separate parking standards for residential development in business zoned areas, based on the number of bedrooms per dwelling:

Number of bedrooms	Spaces per dwelling (A rate)	Spaces per dwelling (B rate)
One bedroom	0.5	0.75
Two bedrooms	0.75	1.0
Three bedrooms	1.0	1.5

The A Rate is utilised in areas zoned B2, B3, and B4, where the dwelling is less than 400 metres from a railway station, transport interchange, or a major bus route. The B Rate applies in B1 and B4 zones, or in B2 and B3 zones where the A rate does not apply.

It is recommended that DCP 2014 be amended to remove the B rate within our town centres and provide guidance on proposals that seek to provide less parking.

PARKING STANDARDS FOR COMMERCIAL DEVELOPMENT

Currently in DCP 2014, parking standards for commercial development vary depending on the type of land use proposed. This is inefficient and results in difficulties changing existing floor space to alternative uses. A single, flat rate for commercial development (offices, retail, restaurants and cafes) should be adopted.

A recent amendment to DCP 2014 also increased the flexibility in the application of the parking standards, particularly for those seeking to go below the current rate. This approach should be reinforced. Furthermore, the urban design and economic implications of exceeding the rates should also be highlighted and reinforced.

Over time, Council should switch the parking standards for commercial development to a maximum rate only. Maximum standards are a market driven approach as they permit developers to determine how much parking is required for a development based on market

conditions. Maximum standards also encourage innovation and greater responsiveness to travel demand management measures such as carpooling, car sharing, active transport and public transport service improvements.

The introduction of maximum standards can result in increased pressure on on-street parking in the vicinity, as the development may no longer cater for all potential parking demands on site. There may also be a need to protect residential areas in, or neighbouring, town centres from spill-over parking. To deal with these potential issues and to provide more certainty for developers, existing businesses and residents, the introduction of maximum parking standards should be accompanied by a TMP for the centre or area concerned.

To simplify the introduction of parking maximums, while providing a degree of consistency throughout the City, the maximum standards

should be set at a level no higher than the current applicable parking standard in Council's DCP 2014. As the minimum standards are generally set at a relatively conservative level, this should be satisfactory in most instances. Indeed, surveys of existing parking supply and demand in centres may well justify setting some or all of the maximum standards at levels lower than the current minimums.

Due to the potential negative impacts on the street network, these changes should only occur once a Transport Management Plan has been adopted for the centre.

UNBUNDLING PARKING

The cost of parking for residential dwellings is conventionally passed on to the owners or tenants indirectly through the purchase price or rental payment. For commercial and retail uses, this cost is shifted beyond the landowners to consumers through the higher cost of goods and services bought and sold in the development.

Currently, owners or tenants are not given the opportunity to purchase only as much parking as they need, forcing them to pay a premium for a potentially unrequired asset.

The alternative is to permit the unbundling of parking spaces from floor space. This allows perspective dwelling owners or commercial tenants to acquire the amount of car parking to suit their specific needs. This provides choice, can improve the affordability of housing, and lower the cost of goods and services to the consumer.

To facilitate the unbundling of parking spaces, it is essential to ensure that on-street parking in adjacent areas is protected from any displaced parking. It is proposed that this will be facilitated through tighter enforcement of parking regulations, ensuring that the high-value on-street short-stay parking is primarily for visitors and customers to the area.

It is recommended that DCP 2014 be amended to encourage developers to unbundle parking spaces from the primary land use.



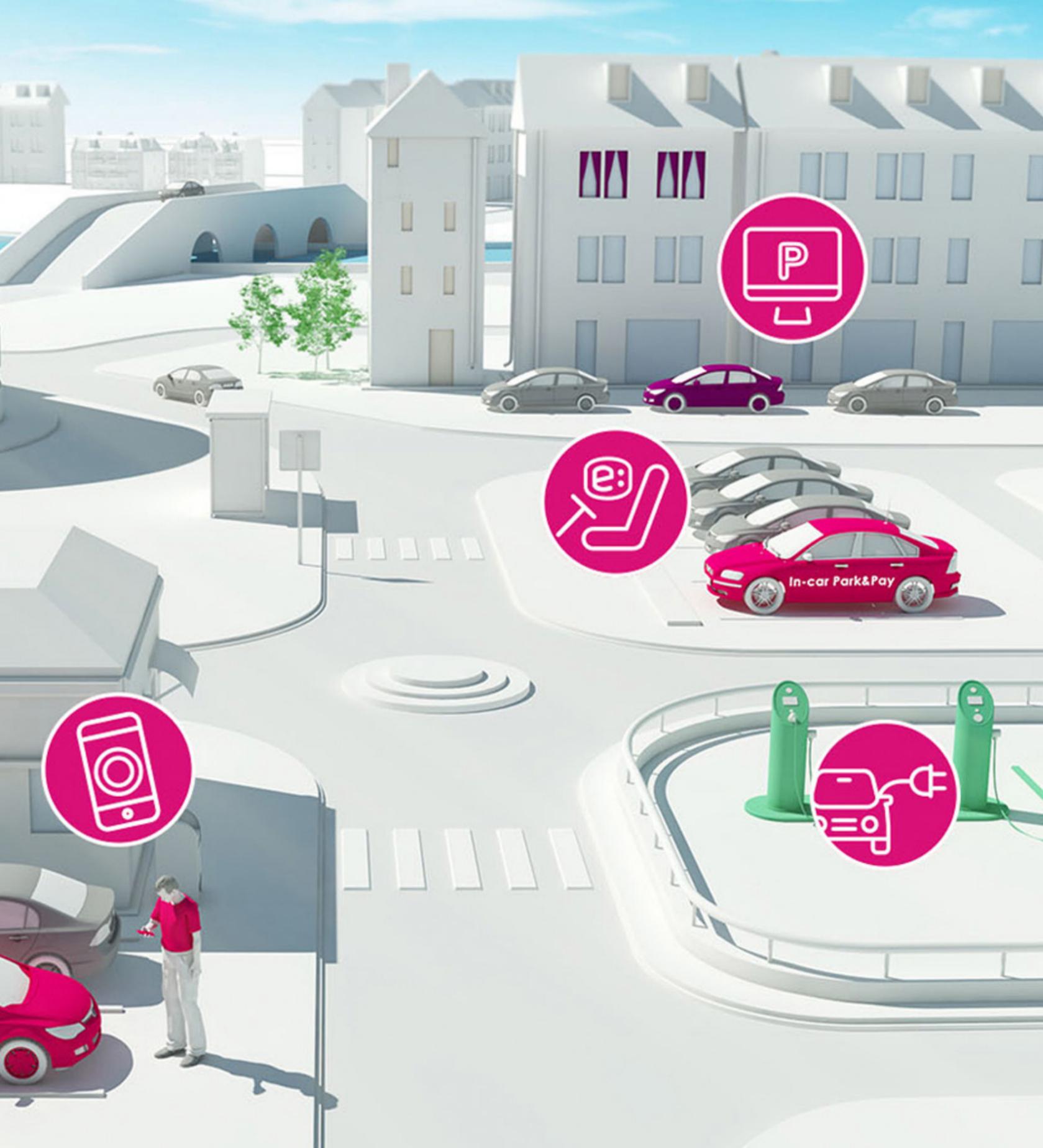


Image courtesy www.aurosysolutions.com

PARKING INFORMATION AND MONITORING

PARKING INFORMATION

As technology has developed, the ability to provide accurate and useful information for parking has increased significantly. Information on parking availability can direct users to an underutilised parking resource, reducing the need to circle for an available space. Ultimately, this information should be provided via in-car guidance applications; however, simple information on a website can have a positive impact. Other options include the use of real-time guidance signs.

In the first instance, it is recommended that information dedicated to parking is provided on Council's website. While this information will be static in the short term, the roll-out of in-ground sensors will facilitate the ability to provide real-time data.

In addition, consideration should be given in the short term to improving the consistency of signage and reducing the frequency of changes to parking restrictions. In some areas, parking time restrictions can vary up to five times in 100m. This reduces predictability for those seeking a parking space and often results in underutilised parking supply.

MONITORING OF PARKING USAGE AND DEMAND

Monitoring of parking occupancy is a key element of this Strategy. Traditional occupancy tracking methods are labour intensive and are therefore undertaken infrequently and with narrow timeframes. This results in unreliable or only partial data, often resulting in poorly informed decisions.

A program of continuous monitoring of parking information is vital to the success of this Strategy. Parking occupancy data must be collected across all town centres and at various times of the day. Ideally, occupancy data would be in real-time, such as through the use of parking sensors. However, other methods, such as the use of licence plate recognition systems are a cost-effective way of monitoring demand.

Monitoring should also occur in residential areas, close to town centres, to quickly identify any spill-over issues caused by intervention in centres. If this problem arises, it can become very frustrating for residents of these areas, as traffic is increased and often access to properties can be blocked along the road network. If this occurs, interventions such as residential parking schemes and time restrictions may be required.

APPENDICES

ACTION PLAN AND RECOMMENDATIONS

This action plan sets out the key actions and initiatives Lake Macquarie City Council will undertake over the short, medium and long term to manage parking demand, improve parking efficiency and monitor the consequences of this Strategy.

Actions	Responsibility	Short	Medium	Long
1 Transport management plans				
1.1 Incorporate the management of parking within a comprehensive Transport Strategy for the City	Integrated Planning		X	
1.2 Undertake transport management plans for each town centre in accordance with priority list	Integrated Planning Asset Management	X		
1.3 Undertake a continuous review of parking restrictions within centres, in line with the objectives of this Strategy	Integrated Planning Asset Management	X		
2 Parking technology				
2.1 Develop a business case, including suitable funding mechanisms, for a smart parking trial in one or more of our centres, utilising in-ground sensors or other alternative technology	Integrated Planning Asset Management		X	
2.2 Develop a business case for the use of technology-based enforcement activities such as licence plate recognition systems	Integrated Planning Waste Environment and Rangers	X		

Actions	Responsibility	Short	Medium	Long
3 Parking for development				
3.1 Amend DCP 2014 to apply the A rate for residential development within all land zoned B2, B3, and B4, and the adjacent R3 zoned areas within walking distance of centres	Integrated Planning	X		
3.2 Review visitor parking standards within DCP 2014 for residential developments	Integrated Planning	X		
3.3 Determine and implement a flat parking standard for commercial development within DCP 2014	Integrated Planning	X		
3.4 Investigate the use of a maximum parking standard	Integrated Planning		X	
3.5 Amend DCP 2014 to facilitate and encourage the unbundling of parking from the primary land use on the property title	Integrated Planning	X		
4 Parking Pricing and Investment Policy				
4.1 Develop a Policy on the pricing of parking including mechanisms for the expenditure of any revenue collected	Integrated Planning Asset Management Finance		X	

	Actions	Responsibility	Short	Medium	Long
5	Parking information and monitoring				
5.1	Provide parking information for each town centre on Council's website to assist in travel planning	Integrated Planning Customer Service and Communications	X		
5.2	Provide consistent and predictable parking signage and reduce the number of variations in parking time restrictions across each centre	Asset Management		X	
5.3	Review the location of existing parking directional signage and identify opportunities for additional signage with a focus on directing motorists to underutilised parking areas	Asset Management		X	
5.4	Undertake an education campaign on the broader impacts of parking, its environmental, social and economic costs, and the benefits of sustainable transport policies as part of the Integrated Transport Strategy	Integrated Planning Customer Service and Communications	X		
5.5	Develop a parking occupancy and turnover monitoring system to assess and inform changes proposed within this Strategy	Integrated Planning Asset Management Waste Environment and Rangers	X		
5.6	Investigate tools to evaluate the economic impacts of changes to parking	Integrated Planning	X		

	Actions	Responsibility	Short	Medium	Long
6	Active transport				
6.1	Review the delivery program for Footpath Strategy 2013-2023 to provide pedestrian infrastructure to improve the pedestrian experience when moving between activity nodes in and around our town centres	Integrated Planning Asset Management		X	
6.2	Review the delivery program of the Cycling Strategy 2021 to provide cycling infrastructure focused on moving people to and between town centres	Integrated Planning Asset Management		X	
6.3	Investigate funding sources to increase the delivery of sustainable transport infrastructure in line with existing Council strategies	Integrated Planning Asset Management Finance		X	
7	Operations and governance				
7.1	Investigate the viability of providing 'park and ride' facilities at key junction points along main transport corridors	Integrated Planning Asset Management Property and Business Development			X
7.2	Delegate authority to the CEO for changes and introduction of parking restrictions where it is consistent with this Strategy and any adopted Transport Management Plans	Asset Management CEO's Office	X		
7.3	Review items referred to Traffic Facilities Committee in areas where this Strategy applies	Asset Management Council	X		
7.4	Investigate the creation of a Parking Coordinator position, dedicated to the implementation and ongoing review of this Strategy	Integrated Planning Asset Management		X	
7.5	Increase parking enforcement resources by two FTE, with a focus on encouraging effective turnover of high-value parking spaces in town centres	Waste Environment and Rangers	X		

TRANSPORT MANAGEMENT PLAN TRIGGER TABLE

Issue	Trigger point	Response
Demand pressure in currently unrestricted areas	Demand for parking regularly exceeds 85 per cent at peak times	Introduce time restrictions suitable to local demand
Demand pressure in residential areas	Parking demand regularly exceeds 85 per cent of available supply in residential areas at peak times	Identify primary user groups (residential and commercial overflow) Introduce or alter time restrictions suited to local demand to encourage turnover of spaces Establish new residential parking schemes
Demand pressure in areas with time restrictions	Occupancy levels for time-restricted spaces regularly exceed 85 per cent at peak times	Investigate opportunities to reduce the time restrictions or introduce additional time restrictions on adjacent streets Introduce demand-based paid parking
Demand pressure in areas with demand based paid parking	Occupancy rates for paid parking in on-street spaces regularly exceed 85 per cent at peak times	Increase dynamic, responsive paid parking charges
Demand pressure in areas with paid parking where charges have reach identified maximum value	Occupancy rates in spaces regularly exceed 85 per cent at peak times	Consider provision of additional off-street paid parking consistent with Parking Pricing and Investment Policy

PARKING PERCEPTIONS SURVEY

Have Your Say
**Lake Mac
Parking
Strategy**



Lake Macquarie City Council would like your help to prepare a Parking Strategy that will provide a long-term plan for the management and provision of parking within our City.

Please complete one survey per town centre you could like to comment on:

<input type="radio"/> Belmont	<input type="radio"/> Cardiff	<input type="radio"/> Charlestown
<input type="radio"/> Glendale	<input type="radio"/> Mount Hutton	<input type="radio"/> Morisset
<input type="radio"/> Toronto	<input type="radio"/> Swansea	<input type="radio"/> Warners Bay

1. What street do you live in?	
2. What suburb do you live in?	
3. What is your sex?	<input type="radio"/> Female <input type="radio"/> Male
4. What is your age?	
5. Do you work in this town centre?	<input type="radio"/> Yes <input type="radio"/> No
6. What method(s) of transport do you frequently use to get to this town centre?	<input type="radio"/> Walk <input type="radio"/> Cycle <input type="radio"/> Car <input type="radio"/> Bus <input type="radio"/> Train <input type="radio"/> Other _____
7. How often do you travel by car to this town centre?	<input type="radio"/> Never <input type="radio"/> Less than once per week <input type="radio"/> Once or twice per week <input type="radio"/> Three or four times per week <input type="radio"/> Five times per week or more

8. What day(s) do you usually travel by car to this town centre?	<input type="radio"/> Monday <input type="radio"/> Tuesday <input type="radio"/> Wednesday <input type="radio"/> Thursday <input type="radio"/> Friday <input type="radio"/> Saturday <input type="radio"/> Sunday <input type="radio"/> I don't travel by car to this centre
9. What are the main reasons for travelling by car to this town centre?	<input type="radio"/> Drive to work <input type="radio"/> Work related business <input type="radio"/> Education / child care <input type="radio"/> Shopping <input type="radio"/> Personal business (bank etc) <input type="radio"/> Meeting friends / entertainment <input type="radio"/> Picking up / dropping off passenger <input type="radio"/> I don't travel by car to this centre
10. Including yourself, how many people are usually in your car when visiting this town centre?	<input type="radio"/> One <input type="radio"/> Two <input type="radio"/> Three <input type="radio"/> Four <input type="radio"/> Five or more <input type="radio"/> I don't travel to this centre by car
11. How long do you usually stay in this town centre when you travel by car (on average)?	<input type="radio"/> Less than 1 hour <input type="radio"/> 1 – 2 hours <input type="radio"/> 2 – 4 hours <input type="radio"/> 4 – 7 hours <input type="radio"/> More than 7 hours <input type="radio"/> I don't travel to this centre by car
12. How many different places (shops, businesses, facilities etc.) do you usually visit when in this town centre?	<input type="radio"/> One <input type="radio"/> Two <input type="radio"/> Three <input type="radio"/> Four <input type="radio"/> Five or more
13. How difficult is it for you to find a car park in this town centre?	<input type="radio"/> Very difficult <input type="radio"/> Somewhat difficult <input type="radio"/> Moderate <input type="radio"/> Easy <input type="radio"/> Very easy <input type="radio"/> I don't travel to this centre by car

14. What day(s) do you find it most difficult to find a car park in this town centre?	<input type="radio"/> Monday <input type="radio"/> Tuesday <input type="radio"/> Wednesday <input type="radio"/> Thursday <input type="radio"/> Friday <input type="radio"/> Saturday <input type="radio"/> Sunday <input type="radio"/> I find it easy to find a park <input type="radio"/> I don't travel by car to this centre
15. During which times do you find it most difficult to find a park in this town centre?	<input type="radio"/> 6am – 8am <input type="radio"/> 8am – 10am <input type="radio"/> 10am – 12pm <input type="radio"/> 12pm – 2pm <input type="radio"/> 2pm – 4pm <input type="radio"/> 4pm – 6pm <input type="radio"/> After 6pm <input type="radio"/> I find it easy to find a park <input type="radio"/> I don't travel by car to this centre
16. What do you consider an acceptable walking time between where you park and your destination?	<input type="radio"/> One minute <input type="radio"/> Five minutes <input type="radio"/> 10 minutes <input type="radio"/> It doesn't matter, I enjoy the walk
17. Do you have any comments on parking in this town centre?	<hr/> <hr/> <hr/> <hr/>
18. Would you be interested in being part of a Community Reference Group look at parking issues across our City?	<input type="radio"/> Yes, my phone No. is: _____ <input type="radio"/> No

For more information visit haveyoursaylakemac.com.au/lake-mac-parking or call 4921 0623. Please return to completed survey to any Lake Macquarie Library or the Customer Service Centre at 126 – 138 Main Road Speers Point, NSW 2284

BIBLIOGRAPHY AND FURTHER READING

Access Hamilton, 2010, *Parking Management Action Plan*, <http://www.hamilton.govt.nz/our-services/transport/accesshamiltonstrategy/Documents/access%20hamilton%20strategy.pdf> accessed 15 March, 2017

Auckland Transport, 2015. *Auckland Parking Strategy*, <https://at.govt.nz/media/1119147/Auckland-Transport-Parking-Strategy-May-2015.pdf> accessed 9 March, 2017

Gabbe, C and Pierce, I. 2017, *The Hidden Costs of Bundled Parking*, <http://www.accessmagazine.org/spring-2017/the-hidden-cost-of-bundled-parking/> accessed 6 April, 2017.

Gold Coast City Council, 2015. *City Parking Plan 2015*, http://www.goldcoast.qld.gov.au/documents/bf/City_Parking_Plan_book_WEB.pdf accessed 14 November, 2016

Litman, T, 2015. *Generated Traffic and Induced Travel; Implications for Transport Planning*, Victoria Transport Policy Institute

Litman, T. 2006. *Parking Management Best Practices*, Planners Press

Litman, T, 2016. *Parking Management – Strategies, Evaluation and Planning*, Victoria Transport Policy Institute

Longo, Hutchinson, Hunter, Tully, Kee, 2015. *Demand Response to Improved Walking Infrastructure: A Study into the Economics of Walking and Health Behaviour Change*, Social Science and Medicine

MR Cagney, 2013. *The Economic Impacts of Parking Requirements in Auckland*, Auckland Council

SFMTA, 2014. *SF park - Pilot Project Evaluation Summary*, http://sfpark.org/resources/docs_evalsummary/ accessed 18 September, 2017

SFMTA, 2014, *SF park – Putting Theory Into Practice*, http://sfpark.org/wp-content/uploads/2014/06/SFpark_Pilot_Overview.pdf accessed 1 November, 2016

Shoup, D. 2014. *The High Cost of Minimum Parking Requirements in Parking Issues and Policies*, Bingley, UK: Emerald Group Publishing

Shoup, D. 2011. *The High Cost of Free Parking*. Revised edition. Chicago: Planners Press

Victoria Transport Policy Institute, 2016. *Transport Cost and Benefit Analysis – Parking Costs* <http://www.vtpi.org/tca/tca0504.pdf> accessed 14 November, 2016



LAKE MACQUARIE CITY

LAKE MAC PARKING STRATEGY 2018

Lake Macquarie City Council

126-138 Main Road Speers Point NSW 2284
Box 1906 Hunter Region Mail Centre NSW 2310

- ☎ (02) 4921 0333
- @ council@lakemac.nsw.gov.au
- 🌐 lakemac.com.au
- 📘 facebook.com/lakemaccity
- 🐦 twitter.com/lakemac
- 📷 instagram.com/ourlakemac

© Lake Macquarie City Council

M&C 22408

