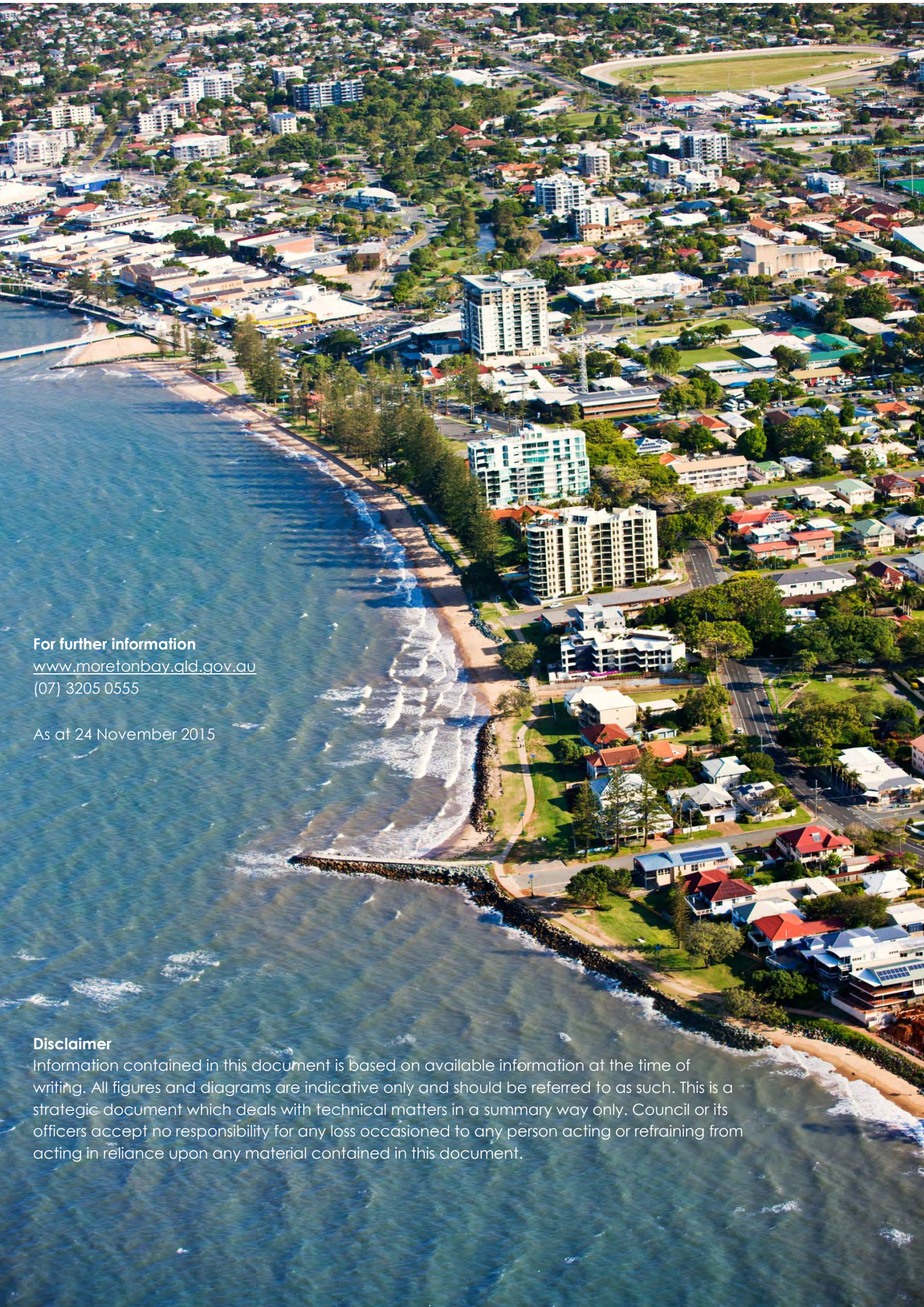




Travel Demand Management Strategy

2012-2031



An aerial photograph of a coastal town, likely Moreton Bay, Queensland, Australia. The image shows a mix of residential and commercial buildings along the shoreline. In the foreground, there's a beach with waves breaking onto the shore. A prominent feature is a tall, modern apartment building. To the right, there's a large, open green field, possibly a sports ground or park. The overall scene is a dense urban area with a mix of building styles and green spaces.

For further information

www.moretonbay.qld.gov.au
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As at 24 November 2015

Disclaimer

Information contained in this document is based on available information at the time of writing. All figures and diagrams are indicative only and should be referred to as such. This is a strategic document which deals with technical matters in a summary way only. Council or its officers accept no responsibility for any loss occasioned to any person acting or refraining from acting in reliance upon any material contained in this document.

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Executive summary

To make the most of our transport network, we need to make new and smarter choices about how, where and when we travel. Travel demand management is about providing transport choices and making land use decisions that help people reduce the impacts of their travel.

Improving transport choice such as walking, cycling and public transport can significantly reduce demand on road infrastructure and provide access to employment and services for a large part of our community.

It is estimated that over 30% of the people living in the Moreton Bay Region do not have access to a car (Moreton Bay Regional Profile).

By creating timetables and routes that encourage combination trips, and by supporting travel outside of peak times, governments can provide incentives for people to transition from private motor vehicles to other means of moving about.

By making land use decisions that support public transport services, cycling and walking, Council can reduce people's time spent in traffic and its own cost of maintaining, building and upgrading roads.

One less trip by car, per household, per week can have a positive impact on our region.



The Moreton Bay Region is projected to grow by an additional 150,000 residents by 2031. Our communities are changing - employment, education, the daily commute, an aging population and home ownership all influence our lifestyle. These changing trends will influence community needs and future requirements.

The Travel Demand Management Strategy has been created using key values identified through the Moreton Bay Regional Council's Community Plan, including:

- Healthier lifestyle choices
- Safe and resilient communities
- Well-connected places
- More sustainable travel choice and behaviour.

These key values underpin all aspects of the Strategy.

The Strategy consists of three sections:

1. The vision and strategic direction
2. Responding to user needs, which draws from the Community Plan and analyses the current and future needs
3. A framework for delivery, which provides the tools and actions necessary to deliver the Strategy.

The Travel Demand Management Strategy is a primary policy to assist Council in making informed decisions on the future transport needs of Moreton Bay residents and visitors.



Introduction



What is travel demand management (TDM)?

Travel demand management combines transport and land use planning in order to change how, when and where we travel. Its purpose is to minimise demand on existing and future transport networks.

Facilities, services, land use decisions and programs aim to reduce travel demand, reducing the number and length of trips and reducing reliance on single occupancy private vehicles.

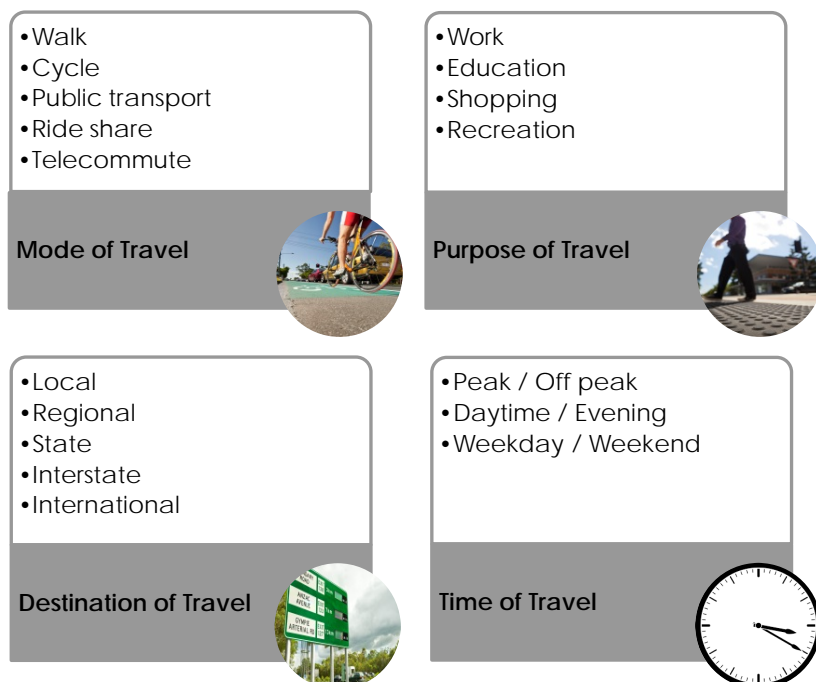
Managing travel demand is a cost-effective alternative to increasing road capacity. In combination with using public transport more efficiently, it has the potential to deliver environmental benefits, improved public health and stronger, more prosperous and more liveable communities.

Scope of this Travel Demand Management Strategy

Localities that integrate land use with transport facilities and services encourage people to make more effective use of each journey they take. In these places, walking, cycling and public transport are attractive. Travel choices are influenced by the available transport options (supply) and the travel needs of the individual (demand).

The Travel Demand Management Strategy is a companion to Council's Active Transport Strategy, Network and Corridors Strategy and Public Transport Strategy. These complementary strategies will improve travel choices across the region.

The Travel Demand Management Strategy looks at how we can make the most efficient use of these networks in order to meet specific community needs.



Why is a Travel Demand Management Strategy important?

A number of options are available to influence how, where and when people travel. Demand management addresses travel activities in relation to mode, purpose, destination and time of travel, as illustrated above.

An increase in sustainable travel will only occur in situations where alternatives to the car exist and parking supply is managed. An environment supportive of sustainable travel choices can include better coordination of public transport services, improved provision for active transport, and integration with land use planning. For example, cheaper and more convenient public transport services

increase people's opportunities to travel by this mode, while the opportunities to travel by car are not affected. Travel demand management measures primarily constitute two distinct elements; voluntary behaviour change and influential change by other methods such as fiscal e.g. car parking charges.

The Travel Demand Management Strategy identifies action programs that will meet the needs of present and future transport users wishing to walk, cycle or catch public transport voluntarily and will also focus on actions to encourage car users to consider other transport options and/or more limited car use to meet their needs.

Travel demand management in relation to travel activities

Within the Moreton Bay Region there is a strong car culture. High car usage, long distances to employment, disconnected public transport networks and dispersed centres makes choosing the car the most obvious transport option.

The aim of the Moreton Bay Travel Demand Management Strategy is to foster equally convenient transport options to reduce the degree of dependence on the private car.

The Strategy improves the travel options of walking, cycling and public transport.

The Strategy reduces the amount of money that the community needs to spend on building, maintaining and replacing the council road network.



Initiatives such as the 'Walk to Work Day' help foster an understanding of alternative travel choices

The Strategy:

- Aligns with the Moreton Bay Regional Council Planning Scheme, in which travel demand management is a key element of future planning
- Identifies plans, policies, and programs for travel demand management
- Promotes options and technologies that reduce the need to travel
- Identifies initiatives and interventions to positively influence travel behaviour
- Utilises parking management to influence travel demand
- Provides information and education on transport choices
- Identifies opportunities for collaboration with other council programs and with external stakeholders
- Ensures responsible financial planning and management of demand management initiatives

Transport policy framework

The Travel Demand Management Strategy is the primary strategic initiative for Council to deliver travel behaviour change across the region.

Travel Demand Management sits within a broad policy framework. The Travel Demand Management Strategy is informed by a range of State and Local Government policies and legislation. The principle driver for the Strategy is the Moreton Bay Region Community Plan developed in 2011 and prepared in partnership with community groups,

businesses, state agencies and local residents. The Travel Demand Management Strategy is one way Council demonstrates its resolve to meet key outcomes identified in the Community Plan.

The Travel Demand Management Strategy is one of a suite of transport strategies for the Moreton Bay Region, illustrated below. In combination, these strategies will seek to deliver an integrated and balanced transport system that provides transport choice.

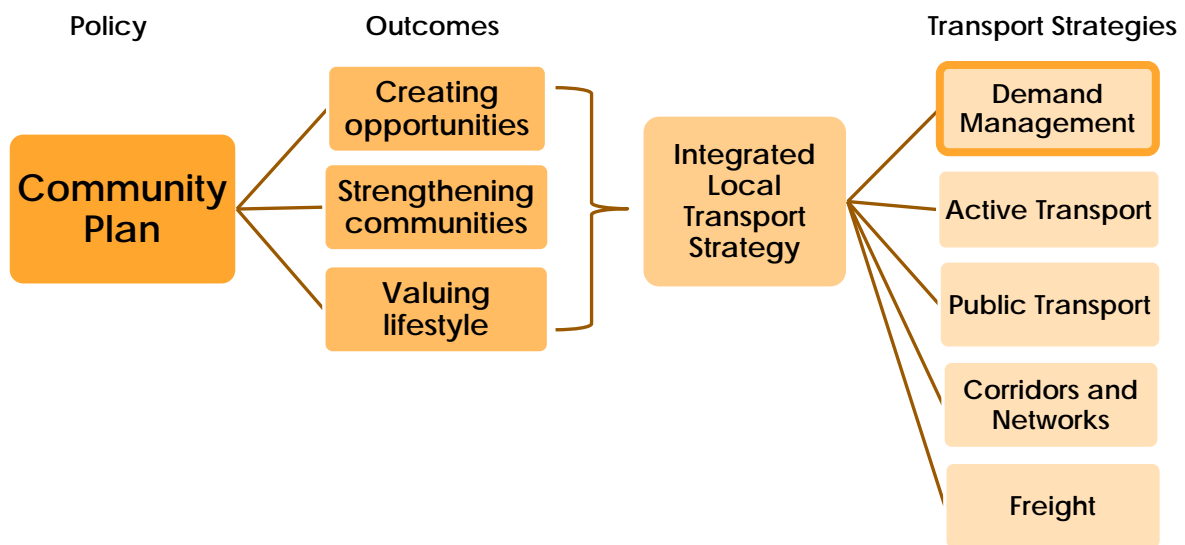


Diagram 1: Council's policy framework



Preparation of the Travel Demand Management Strategy

The Travel Demand Management Strategy has been developed in three stages.

First, council's vision and principles for travel demand management in the region were identified, based on the Community Plan.

Second, opportunities were identified for council to respond to growth and the needs of users.

Finally, a framework for delivery has been determined - identifying and prioritising facilities and programs to achieve council's vision.





Our Vision

“People in Moreton Bay have information about and access to, a range of convenient transport choices.”

Principles

Fundamental principles for the development of the Moreton Bay Region's travel demand management programs and initiatives provide a framework to guide existing and future investment. Applying these principles to travel demand management will ensure council's visions for transport is achieved throughout the region.

Relative to place

Travel demand management programs and initiatives are designed to support the various places to which they will be applied. Programs are specific and support people moving in and around our places.

Sustainable

Sustainable travel provides many economic, environmental and health benefits.

The benefits are recognised through more efficient use of the existing transport networks, lower environmental impacts and lower vehicle emissions.

Public transport and active transport options support healthier communities through more active lifestyles, greater social interaction and individual health benefits.

Safety

Travel plans in and around schools, town centres and places of employment will identify safe routes and identify infrastructure improvements to support these routes.

Information

Making well informed travel choices is easier when information about travel options is readily available.

Travel demand management guidance and advice is available to individuals, businesses, schools, organisations, clubs and other groups.

Travel demand management is offered as a toolkit to pick and choose techniques to meet a range of circumstances.

Continual improvement

This strategy recognises that questioning, evaluating and seeking improvements for demand management techniques is the best way to deliver solutions in our ever changing environment.

Travel demand management leader

Moreton Bay Regional Council will be the region's exemplar organisation in supporting and implementing travel demand management.

The Council will work collaboratively with other organisations to coordinate travel demand management initiatives to improve the affordability of, and accessibility to, transport options across the region.

Accessibility

Transport options need to be available to all users. Access by pedestrians, cyclists and public transport users is of the highest priority especially to and within activity centres, schools and employment areas.





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Snapshot of the region

Regional profile

The people of the Moreton Bay Region

The Moreton Bay Region stretches from the Hills District in the south to beyond Woodford in the north. From as far west as Mount Glorious, to the shores of Moreton Bay. The region covers over 2,000 square kilometres and has an estimated resident population of 400,000 people (2011).

The Moreton Bay Region accounts for 19% of the population of greater Brisbane and is the third largest local government area in Australia (2011) by population, and third fastest growing.

Population and jobs growth

The Moreton Bay Region has experienced rapid and sustained growth in population and jobs since the 1950's. Information on population and jobs gives us valuable insight about the residents in the region and how their lifestyle may be changing. This helps Council make informed decisions about policy and investment to influence the future direction for the region.

Until the year 2000, annual growth in both population and jobs tracked at a similar rate. Since 2000 job growth within the region has not accelerated at the same rate as population growth. 44% of all working Moreton Bay residents now commute outside our region to work. This is likely to double if the trend in jobs growth continues to 2031, a trend not encouraged by Council. Achieving a better balance is crucial to meeting the lifestyle aspirations of the region's residents and the economic outcomes sought by the business community.

Region summary

- The Moreton Bay Region covers over 2,000 square kilometres.
- The region's population is approximately 400,000 people.
- The region is expected to grow by an additional 150,000 people by 2031.

This has implications for the lifestyle of our residents and all forms of infrastructure. Those residents who spend more time travelling outside the region for work are likely to have less social time. This can lead to a cycle of highs and lows on demand for infrastructure such as roads, community facilities and parks. These types of facilities can become very busy in peak periods.



Age and households

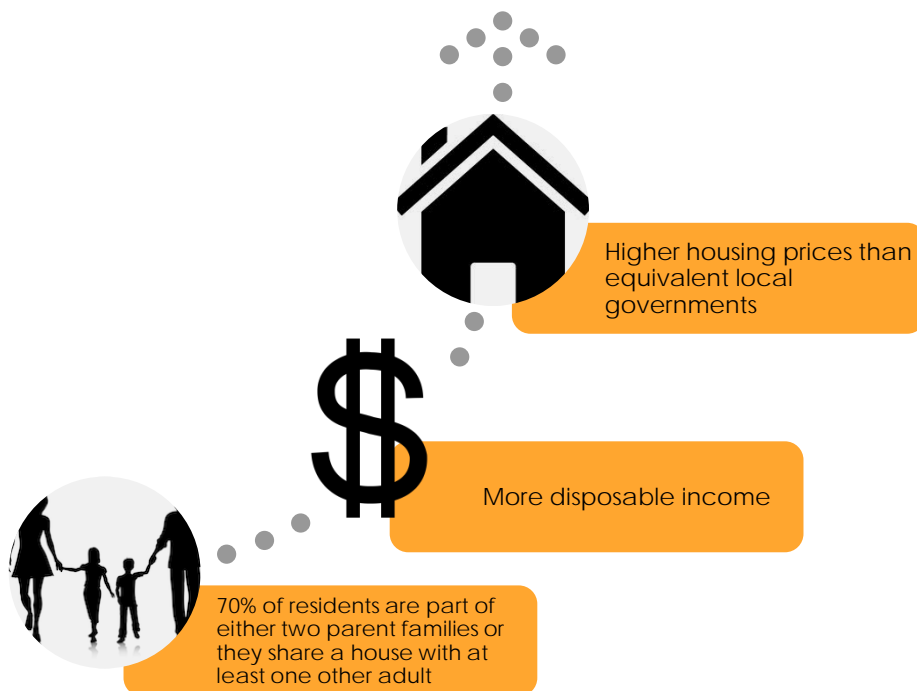
When compared to other local government areas within a similar distance to the Brisbane CBD (i.e. Logan and Ipswich), the Moreton Bay Region shows some unique trends in age distribution. The region has a very low number of people aged between 17 and 35, most likely because some young adults migrate away to take up social, educational and career opportunities elsewhere. We also see a lower proportion of infants and children below the age of five.

People from about the age 35 onwards make up a high proportion of those who tend to migrate into the region. These new residents tend to be second or third home buyers, upgrading their homes from cheaper suburbs on the urban fringe or from other local government areas like Logan and Ipswich. Many of these new residents have families with children aged from seven to 17. Consistent with trends across the greater Brisbane area many choose to live in single detached dwellings, particularly in the former Pine and Caboolture local government areas.

Although single detached dwellings make up the bulk of housing stock, the Redcliffe Peninsula provides the region with a greater proportion of higher density living options. Trends towards townhouse developments in other parts of the Region should lead to a greater diversity of housing choice than similar local government areas.

The conclusions drawn from the age profile are supported by household distribution in the region. Over 70% of our residents are part of either two parent families or they share a house with at least one other adult. Both of these groups tend to have more disposable income than singles living alone or single parent families, which is why housing prices are generally higher than equivalent local governments on the greater Brisbane fringe.

The age and household structure tells Council that providing a wide range of transport options is important and that active transport infrastructure and programs can support this need.



Responding to change

Council's intent to achieve greater levels of job self-containment, accommodate significant population growth and respond to a changing age profile is addressed in Council's Strategic Framework. The Strategic Framework is part of the new Moreton Bay Planning Scheme and states how Council intends to respond to growth and changing community trends. That document is a key consideration in the development of the Travel Demand Management Strategy.

A key component of the strategic framework is place types – the different types of location where we work, live and play. The place types are a future land use model which establishes the specific planning and design outcomes expected in a variety of locations throughout the region.

The Strategic Framework outlines the following key land use strategies to address regional trends:


- The bulk of new residential development will be accommodated within "next generation suburban neighbourhoods" each containing greater levels of services and facilities than do many existing suburban neighbourhoods.
- The development of urban places adjoining activity centres and transport nodes are intended to accommodate medium density residential development, increased urban business and employment opportunities.
- Vibrant and attractive activity centres will be designed to provide a broader range of services, facilities, business and expanded employment opportunities, centrally located within the transport network and easily accessible by residents in existing and new neighbourhoods.

- Major places for enterprise and employment will be developed where they are accessible by major transport corridors and will provide alternative employment destinations for residents of the region.

These land use strategies drive the outcomes of the Active Transport Strategy consistent with Council's investment and initiatives in developing places where business and private investment can prosper.

Council's strategy to deliver higher densities around activity centres and transport networks will change the region's profile by providing a diversity of housing choice to the market and providing opportunities for the 17-35's to remain in the region.

Higher densities will provide opportunities for our residents to activate places and to 'age in place' in locations that have good access to transport options and community facilities tailored to their needs.

A blue rectangular box containing the text "Moreton Bay Regional Council Planning Scheme" in white, bold, sans-serif font.

Moreton Bay Regional Council Planning Scheme

Key issues for the region delivering Travel Demand Management

The Moreton Bay Region faces significant population growth over the next 20 years. This will place significant pressure on existing transport infrastructure and services, particularly roads and public transport.

The existing pattern of urban development and distribution of employment favours people who travel by car. In 2010 87% of all trips in the Moreton Bay Region were made by private car.

Council cannot sustain the cost of maintaining and building new transport infrastructure to service this growth the way it has in the past. Transport infrastructure must move people and goods more cost effectively.

Mixed use developments, with people living near passenger transport and local employment opportunities, will make trip distances shorter. Shorter trips are more attractive to be undertaken by sustainable transport modes, increasing travel choice.



Region strengths

- The region has a variety of existing pathway infrastructure for walking and cycling.
- The region has a combination of both rail and road public transport services and supporting infrastructure.
- Council is committed to infrastructure improvements to support the development and enhancement of the existing active transport network and the Moreton Bay Rail Link.

Region opportunities

- Planning for growth - an integrated land use and infrastructure plan to guide future development in a coordinated and sustainable way.
- Working collaboratively – Council can work with State government, stakeholders, schools, businesses and other's to develop travel plans to support greater sustainable transport usage.
- The Moreton Bay Rail Link provides increased opportunities for more people within public transport catchments.
- Council has developed a Public Transport Strategy as a tool to advocate to State Government for enhancements to public transport to better service our communities
- Proposed Transit-Oriented Developments (TODs) provide opportunities for developing, designing and retrofitting communities that support greater use of sustainable transport modes.
- Reinforcement of Moreton Bay Region's major centres as a focus for local employment will reduce the proportion of extended trips.

Responding to user needs



Future directions

To meet the transport requirements of a growing community, Council has developed the Travel Demand Management Strategy around existing and future user needs. This approach not only recognises anticipated population growth, but also identifies and understands the varying needs and preferences of the community.

This information allows council work to better manage, and advocate to State government, the region's transport infrastructure and services to meet the needs of the community.

The 'Place Types' approach to planning

To provide a range of transport choices for the community, Council is using a planning framework known as the place type model.

The place type model is a strategic planning tool that provides a range of transport solutions and activities for the different locations where we live, work and play.

Council uses the place types to respond to the needs of particular communities for wider transport choice.

This information allows council to plan, design and deliver the variety of facilities and programs that each place requires, where they should be located, and the activities that occur there.



○ Varying needs and preferences of the community ○ Growing community ○ Travel demand management strategy ○ Transport infrastructure and services ○ Place types approach

Opportunities for meeting user needs

To achieve the vision and fundamental principles, council is responding by helping people manage their travel. Responses are developed under three themes:

A. Making fewer and shorter trips

Less travel can be achieved through shorter and fewer trips. The way our places are laid out influences the way we travel and how far. If our homes are closer to things we need, we can travel there more easily by walking, cycling and public transport.

B. Better transport options

People want to be able to make a choice as to how and when they travel. This choice depends on a variety of convenient routes and ways to travel being available. Available choices need to satisfy different journey purposes. People expect a reasonable level of transport service throughout the urban area.

C. Knowledge of transport choices

Information is necessary in changing travel behaviour. Access to information on footpath and cycle networks and on public transport services can encourage the use of more sustainable transport modes.

Responding to these opportunities will include:



A. Making fewer and shorter trips



The way we travel is influenced by the way our communities are designed. People travel to reach the places, goods and services they need. Travel provides access to work, shops, accommodation, education, health services, leisure and community facilities. People will travel less distance if these things are located closer together.

The closer activities are located to where people live and work, the less travel is required. Convenient shorter trips are able to be made by walking or cycling thereby increasing travel choice.

Connecting communities

Improvements to walking, cycling and public transport provide residents with more convenient transport options. These options are improved when residents are connected to activity centres to access employment, services and shops.

Direct and convenient linkages for walking, cycling and public transport shorten the travel distance between adjoining neighbourhoods and bring otherwise isolated communities closer together.

We will:

- 1.1 Adopt best practice integrated design guidelines and codes as the basis for transport design integration
- 1.2 Design activity centres and new communities to support active and public transport



Redcliffe Seaside Village, Redcliffe

Places with a range of activities

Compact, mixed use places provide opportunities for shorter travel distance. They are more efficient in terms of both time and energy. These places bring together a mix of goods, services and employment opportunities within a walkable location. For example a person could visit an accountant, have a dental check-up, workout at the gym, enjoy a cup of coffee and do some shopping all in the same trip.

Places with a range of activities encourage people to shop locally. This has the added benefits of creating more viable centres and increased employment opportunities, generating increased economic activity.

The range of transport choices reflects the diversity of use and scale of the centre. Conveniently located local centres serve everyday needs with the minimum of travel. These centres are most easily accessed by walking and cycling.

Larger centres provide a greater mixture of activities and services to a wider area. These centres are easy to walk around and require a higher level of access by public transport.

Living within and close to centres brings people closer to the range of activities and public transport they need. A range of dwelling styles and sizes will service the needs of a diversity of residents. Employment, services and transport opportunities will reduce their need to travel long distances.

We will:

- 1.3 Ensure activity centres and appropriate places provide for a wide range of activities



An example of a place with a mixture of different activities within easy walk of one another

Well-designed places and buildings

Good urban design integrates active travel and public transport modes into urban areas. It enables people to live closer to their jobs, shops, services, schools or where they spend leisure time. Well-designed places are connected with attractive, convenient, and safe walking, cycling and public transport networks. It makes these places easy for people to find their way around by making paths and access to public transport obvious. Structures are the building blocks that create places. These structures and how

they are arranged determine the attractiveness of walking and cycling within places. Welcoming buildings and entrances close to the street make places inviting for people meet and undertake a range of activities. Shade, shelter, seating and lighting encourage people to stay longer and do more business.

We will:

1.4 Develop, implement and review the complementary transport strategies



Availability and supply of parking

A mixture of activities in a place requires a variety of types of car parking across the day. The way different types of car parking spaces are shared and managed can reduce the need to travel. A single parking space occupied for a variety of activities within close proximity and at different times will serve many users' needs.

Every trip undertaken by car involves walking from the car park to the ultimate destination. This part of the trip needs to be attractive, safe and convenient.

Council recognises that managing parking within our centres is challenging and that balancing the needs of all users is necessary.

Less time spent traveling

Time is precious. Most people want to use their time more efficiently by reducing the amount of time spent travelling.

Users can avoid lengthy periods caught in congestion by traveling outside peak times. Flexible working arrangements allow them to start and finish work earlier or later. Travel time can be further reduced by working from locations closer to home.

Council recognises that options outside the transport network can reduce the need to travel. Telecommunication technology improvements now support a wide range of activities occurring in new, more convenient locations. Avoiding an everyday commute through teleworking can save considerable travel time and money.

We will:

- 1.5 Manage the supply and availability of parking throughout the region
- 1.6 Identify opportunities for flexible working arrangements across the region



In Redcliffe, council has established a co-working hub. The hub provides a venue for people to work independently or to collaborate with like-minded people in the same space. Hubs located close to where people live and do businesses can reduce peoples' need to travel.

B. Better transport choices



Residents are facing increased traffic congestion and increasing demand on their time and money spent on travelling. The community cannot afford ever increasing costs to expand and maintain road capacity. More opportunities are needed to reduce travel or to provide different means of travelling.

Trips are made for a variety of reasons including how and when to travel. To provide travel choice a variety of routes and ways of travel must be available. Travel choices need to satisfy different journey types and meet reasonable service expectations throughout the urban area.

A wider range of transport options can change travel behaviour. To improve transport choice, we need an environment that is friendly to pedestrians, cyclists and public transport users, including people with disabilities.

Improved active transport opportunities

Active transport trips are relatively short and mostly to local trips. They can include walking and cycling. Places can seem closer when good quality paths make the experience better.

Making walking and cycling more attractive requires better footpaths, safer crossings and pleasant shortcuts and walkways. Improved local connections need to be designed to support the various users including children and people with disabilities. Well-designed streets will help create more attractive and safe places for pedestrians.

Cyclists facilities need to cater for a variety of skills and needs. Provision for cycling on paths is different to those required on road where the space is shared with other road users. Building up a comprehensive network of safe, pleasant and direct routes will improve cycling as a choice for more users.

The Moreton Bay Regional Council - Active Transport Strategy addresses these issues in more detail.



Improved public transport services

Public transport is more space and energy efficient than traveling by cars. More people using public transport places less pressure on existing roads, relieving congestion and reducing the need for building more and bigger roads.

Making public transport a preferred choice is dependent on convenience, frequency, reliability and affordability.

Convenience means having accessible public transport providing connections to places people want and need to go. Public transport services need to be available when people want to travel.

Frequency and reliability of public transport services are critical in building confidence in using public transport. Knowing that you can get to your destination on time makes the choice to use public transport easier.

Affordability of public transport services need to be comparable to owning and running a car.

Public transport is an important choice for people unable to drive or people who cannot afford to own or run a car including the young, the aged and people with disabilities.

The Moreton Bay Regional Council - Public Transport Strategy addresses these issues in more detail.

We will:

2.1 Identify opportunities to support the concept of ride sharing.

Ride sharing

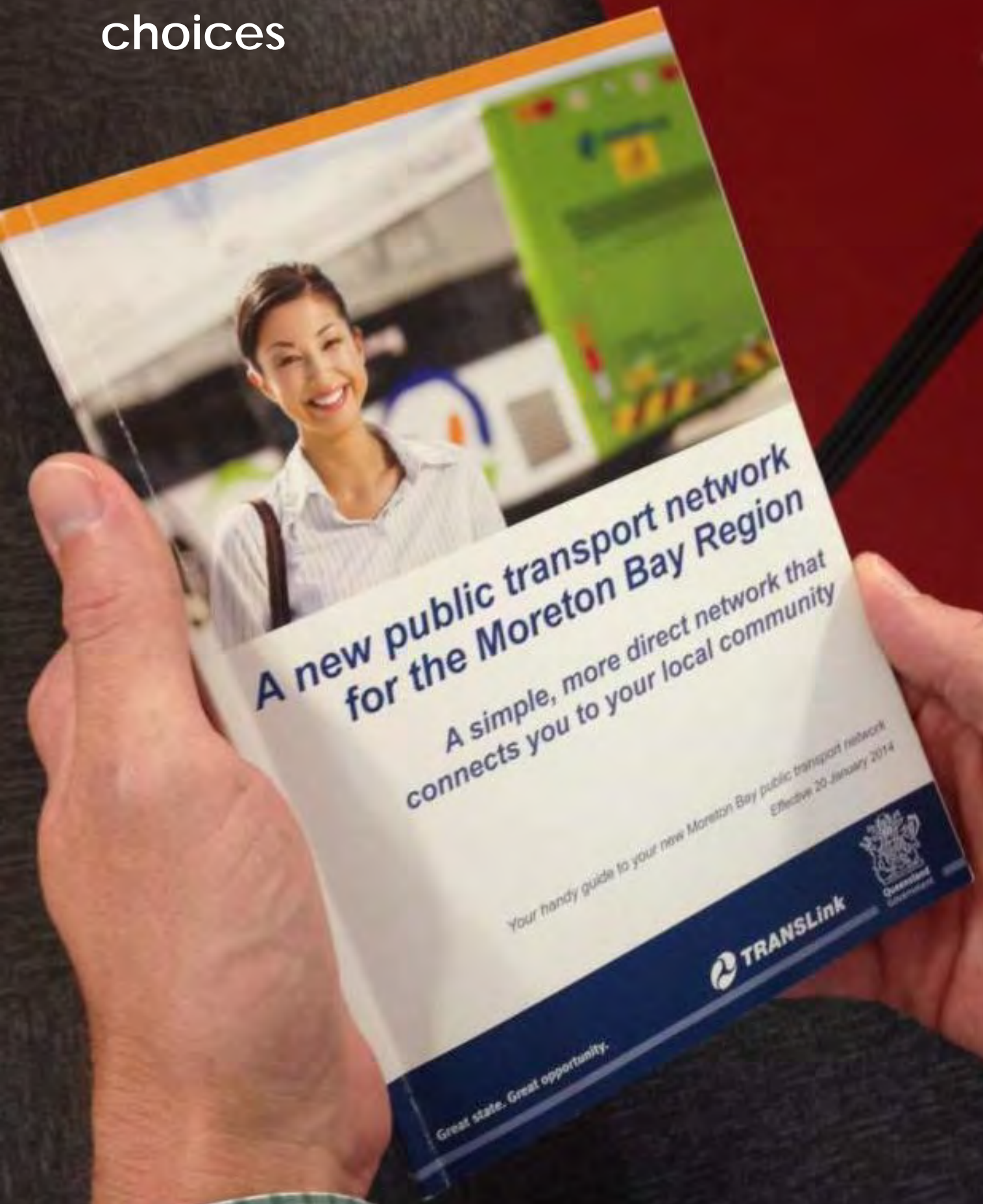
Sharing a ride with others reduces the stress and cost of a trip, and can be a pleasant social experience. Ride sharing can be an important part of more sustainable travel behaviour and reduce congestion.

Ride sharing can provide for a range of travel needs. Ride sharing can include regular commutes with co-workers or one-off trips where an extra vehicle would be an inconvenience or an additional cost (e.g. going to the airport).

Friends and colleagues can informally arrange to share rides. Websites or facilitation groups can bring people who have common travel needs together in a more formal arrangement.



C. Knowledge of transport choices



To change current travel behaviour people need to know what other travel options are available. Understanding the benefits and costs of these options will help people make well-informed decisions about their travel.

Available information

Being aware of travel choices is the first step towards changing which travel options people choose. Once travellers have knowledge, they can make more informed choices and plan trips more appropriately.

Information needs to be accessible on how, where and what options are available for any trip. This information needs to be available in many forms and through various media such as the Translink website illustrated below.

Maps, brochures and signage help residents and visitor to plan their commute, a recreational activity on the weekend or a visit to the shops.



11.22am - 11.59am
Catch train **CAIP** Caboolture via Brisbane City to Ipswich to Zillmere station, platform 1, Zillmere

[more info & times](#) [Caboolture Line status](#) [zoom to trip on map](#)

[Ipswich/Rosewood Line status](#)

11.59am - 12.03pm
Walk 232m to Handford Rd at Zillmere station, Zillmere

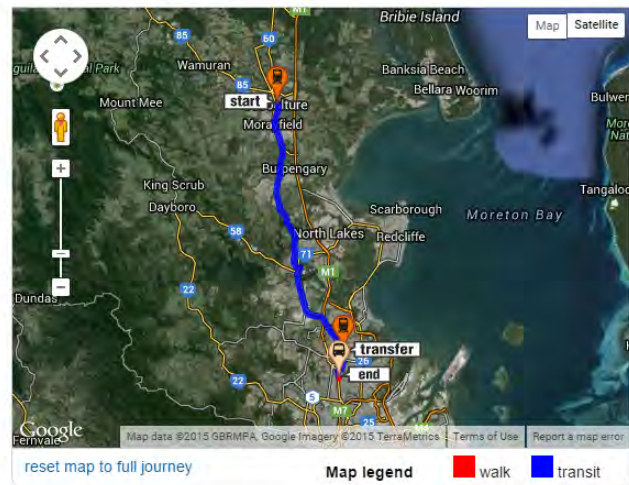
[zoom to walk on map](#)

12.12pm - 12.22pm
Catch express bus
330 Bracken Rdg, Chermshire, RBWH, Roma St, City, Cultural Centre to Gympie Rd at Chermshire, stop 37/38, Chermshire

[more info & times](#) [Route 330 status](#) [zoom to trip on map](#)

12.22pm - 12.27pm
Walk 291m to Chermshire Shopping Centre station

[zoom to walk on map](#)



Fare information

This is a 5 zone journey, travelling in zones 4 - 8.

Ticket type	Price
go card adult	\$5.96
	\$4.76 (off-peak)

Access to information such as the Translink Journey Planner aids travel choice decisions¹

¹ Journey planner | Translink. 2015. *Journey planner* | Translink. [ONLINE] Available at: <http://jp.translink.com.au/>. [Accessed 05 June 2015].

Help to make travel choices

For people to change travel behaviour they need information and tools to plan their travel. To help people change their behaviour, travel plans raise awareness, increase knowledge of travel options and encourage use of walking, cycling, ride sharing and public transport.

A travel plan can be tailored to an individual or place (e.g. work place or school). Travel plans can identify infrastructure improvements needed to support changes in travel behaviour.

A travel plan provides information and motivation to get to and from destinations by walking, cycling, ride sharing and public transport.

Implementation of travel plans can provide a variety of benefits including reducing the demand for car parking, reducing travel costs, reducing congestion, improving accessibility and promoting better health.

Employers can reap benefits from improved staff moral using travel plans that could include secure cycle parking and end-of-trip facilities, better access to public transport, teleworking, flexible working arrangements and facilities for walking.

Infrastructure providers such as Council can benefit by making better use of the existing road network and reducing the costs to the community of upgrades.

We will:

- 3.1 Continue to deliver, expand and implement the Moreton Bay Regional Council Travel Choice Program (MBRC Travel Choice Program)





Framework for delivery

Delivering the strategy

Delivery of the Strategy will be achieved through a series of programs with measurable targets and an ongoing monitoring and review schedule.

The outcomes of this Strategy and future programs will inform capital and operational works programs, the Moreton Bay Regional Council Planning Scheme and other strategies.

Partnerships

Transport facilities and services are delivered across the region by a number of parties including State and Local Government and private operators. Where facilities or services are managed by the state government or other service providers, Council will work with the State Government to ensure that community needs are addressed. This will involve partnering to develop and enhance our transport network as a seamless and coordinated transport system.



Public education and communication

Community education and awareness of transport options and choices is an important role of Council. Council will work in partnership with schools, business and communities to develop and implement better transport outcomes. This includes education and capacity building programs to promote better travel choices.

We will:

- 4.1 Partner with State Government and service providers.
- 4.2 Ensure that all transport stakeholders are considered in the transport system
- 4.3 Engage with the community to improve understanding of transport choices their impacts and full costs.



Leadership and governance

The Travel Demand Management Strategy is a primary policy of the Moreton Bay Regional Council. Council champions the vision of achieving desired behaviour change outcomes and works to achieve the goals and targets expressed within the Strategy.

Travel demand management outcomes are achieved through council projects reflecting the direction contained within this Strategy.

Council is skilled to facilitate travel demand management outcomes that reflect the vision and respond to the needs of the community.

We will:

- 4.4 Adopt as council policy the Moreton Bay Regional Council Travel Demand Management Strategy.
- 4.5 Assign responsibility for implementation of the Strategy within the organisation.
- 4.6 Establish cross departmental processes to ensure effective implementation of the Strategy.



Bounty Boulevard, North Lakes

iRIS and Council's capital works program

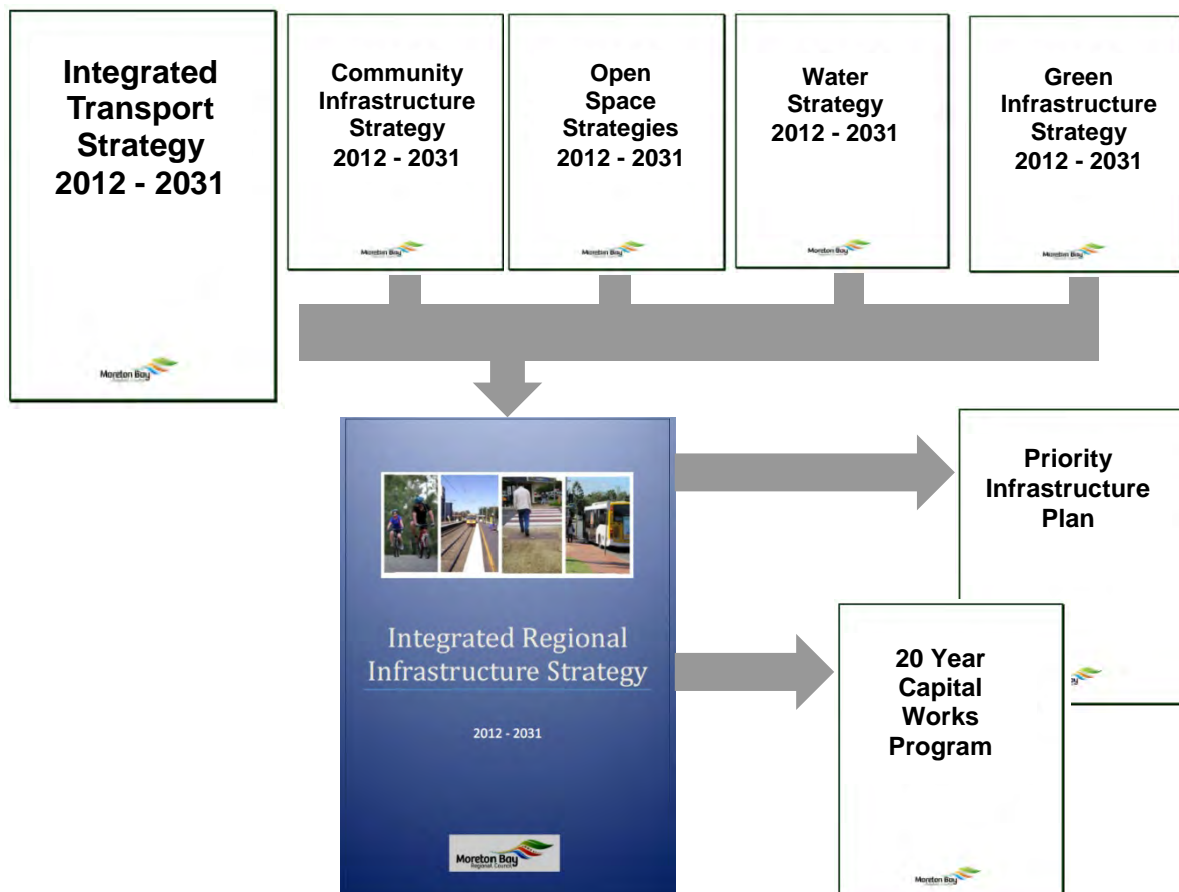
Moreton Bay Regional Council performs a leading role in coordinating the delivery of infrastructure for existing and new communities throughout the region. An integrated approach to infrastructure network planning does this more efficiently.

The Integrated Regional Infrastructure Strategy, or 'iRIS', combines Council's infrastructure priorities with the priorities of other infrastructure providers in the region, such as transport, water, sewerage and energy.

The iRIS assists Council in prioritising infrastructure projects based on a quadruple bottom line assessment that stimulates economic development, is socially equitable, environmentally robust and has a governance framework based on excellence and value for money.

The Travel Demand Management Strategy will inform the preparation of the iRIS by identifying and prioritising projects that support transport choice.

The outcomes of iRIS will guide Council's capital works program over the next 20 years.



Planning scheme

Moreton Bay Regional Council is planning for the future with a new regional planning scheme. The new Planning Scheme will respond to growth and development across the region. Council has released the Strategic Framework which provides a vision and strategy for the region and will form part of the new Planning Scheme.

The Travel Demand Management Strategy will inform the development of the Planning Scheme, including setting of new standards to the way places are designed and to support walking, cycling and public transport within those places.

Increased employment and a range of uses within walking distance of places where people live helps to manage travel demand.

Priority Infrastructure Plan

The Travel Demand Management Strategy will inform the development of a Priority infrastructure Plan (PIP). The PIP seeks to integrate land use and infrastructure planning by encouraging growth in areas where infrastructure exists or can be provided efficiently. Future versions of this Strategy will inform the PIP by determining future trunk and non-trunk transport infrastructure requirements based on population growth and estimating the cost to provide this future infrastructure.



Goals and targets



Moreton Bay Regional Council is working towards improving transport choice within the region. While Council is not the only agency interested in travel demand management, it plays a significant role in provision, management and advocating for provision of facilities by the State Government, transport operators and the private sector.

To meet the goals of this Strategy, Council has set short, medium and long term targets.

Short Term to Medium Term Selective Key Targets 0 – 4 Years

- Deliver the short to medium term outcomes identified within the specific transport strategies including Networks and Corridor, Active Transport, Public Transport and Travel Demand Management
- Implement the outcomes of the transport strategies into the planning scheme.
- Inform and advocate the outcomes of the suite of transport strategies to State Government, transport operators and the private sector.
- Establish a cross departmental committee to jointly implement and monitor the Strategy and action plan with continuous liaison.
- Establish a multi-disciplinary review panel with membership across the Strategic Planning Department and the Engineering, Construction and Maintenance Division.

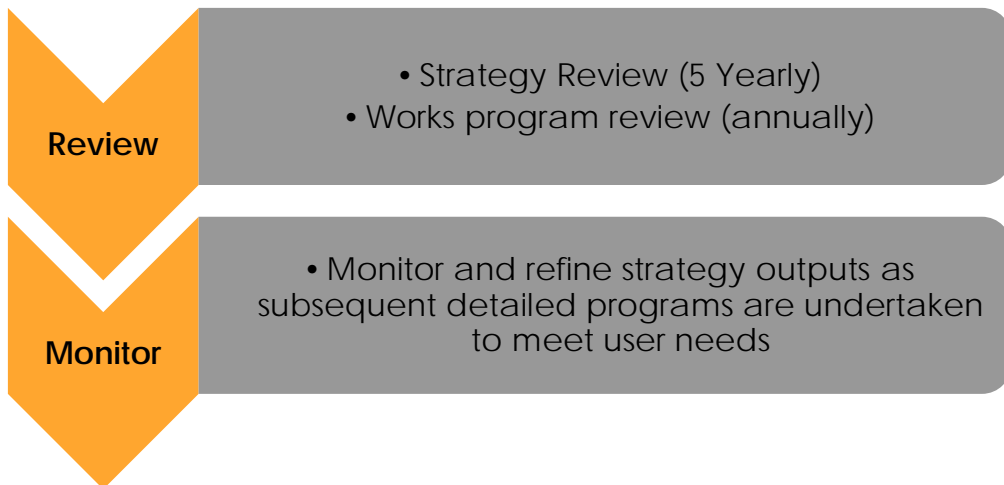
Short Term to Medium Term Selective Key Targets 0 – 4 Years

- Deliver the long term outcomes identified within the specific transport strategies including Networks and Corridor, Active Transport, Public Transport and Travel Demand Management
- Implement the outcomes of the transport strategies as part of the implementation of local plans and the planning scheme
- Monitor, evaluate and update the transport strategies at least every five years.



Monitoring and review

To ensure we continue to meet the vision and actions proposed in this Strategy, evaluation and monitoring will be undertaken. This will allow Council to continually monitor its progress, be responsive to legislative change and remain current.



Regular monitoring of the strategy will be undertaken to ensure Council remains on track to realise opportunities and to achieve set targets and goals. Council will continually improve the planning, funding and provision of active transport facilities, and follow current best practice as closely as possible.



Appendix A

Program action plan

Travel Demand Management Strategy 2012-2031

Appendix A – Program action plan

The Action Plan identifies a prioritised list of projects that Council will undertake to deliver the travel demand management vision for the region. The program action plan is Council's direct response in meeting the strategic objectives identified in the Strategy's themes for meeting user needs. This response includes defining the actions, purpose and the timing, responsibility and status of achieving those actions.

Timeframes

Short term - 1-2 year time frame

Medium term – 3-4 year time frame

Long term – 5+ year time frame

Definitions

SPD - Strategic Planning and Development Division

ECM – Engineering, Construction and Maintenance Division

EDCS – Economic Development and Commercial Services

CES – Community and Environmental Services Division

FPS – Financial and Project Services

DSS – Desired Standard of Service

INP – Open Space Infrastructure Network Plan

PIP – Priority Infrastructure Plan

N&CTS – Networks and Corridors Transport Strategy

ATS – Active Transport Strategy

OSS – Open Space Strategy

A. Making fewer and shorter trips					
Actions	Purpose	Timeframe	Responsibility	Status	
1.1	Adopt best practice integrated design guidelines and codes as the basis for transport design integration				
1.1.1	Complete the Planning Scheme Policy on integrated design of streets and roads	The Planning Scheme Policy will provide a “best-practice” reference to ensure that the planning scheme requires the right facilities to be provided appropriate to the various settings across the region. To be applied by Planning Services.	Immediate	Strategic Planning (Statutory)	Complete as scheme input, subject to review and refinement
1.2	Design activity centres and new communities to support active and public transport				
1.2.1	Apply principles of the Strategic Framework, Planning Scheme Policy, Transport Strategies and Integrated Design Guide regarding permeability, connectivity and active and public transport priority.	The more population within easy walking and cycling distance of destinations and public transport stations and stops increases opportunity to access goods, services and experiences locally, and the more vibrant and successful those destinations will be. Permeability, connectivity, and priority will combine to bring a wider area (hence a greater population) within the catchments. Greater residential density in those catchments and greater intensity and diversity of activity at those destinations will increase both the catchment population and the level of attraction of those activity destinations.	Immediate	Strategic Planning (Statutory)	Completed through the Planning Scheme Policy, subject to review and refinement

1.3	Ensure activity centres and appropriate places provided for a range of activities				
1.3.1	Apply principles of the Strategic Framework in Planning Scheme Policy and in the development of Master and Concept Plans to provide for a range of activities.	A greater mix of activities within activity centres and other appropriate places provides greater opportunities for people to serves some of their needs locally.	Immediate	Strategic Planning (Statutory & Master Planning)	Completed through the Planning Scheme Policy, subject to review and refinement. Commenced as part of Master Plan program
1.4	Develop, implement and review the complementary transport strategies				
1.4.1	Development, implement and review the Integrated Local Transport Strategy	The Integrated Local Transport Strategy and its recommendations are complimentary to the Travel Demand Management Strategy.	Short-term and on-going	Strategic Planning	Underway
1.4.2	Development, implement and review the Active Transport Strategy	The Active Transport Strategy and its recommendations are complimentary to the Travel Demand Management Strategy.	Short-term and on-going	Strategic Planning	Complete
1.4.3	Development, implement and review the Public Transport Strategy	The Public Transport Strategy and its recommendations are complimentary to the Travel Demand Management Strategy.	Short-term and on-going	Strategic Planning	Underway
1.4.4	Development, implement and review the Network and Corridors Transport Strategy	The Transport Network and Corridor Strategy and its recommendations are complimentary to the Travel Demand Management Strategy.	Short-term and on-going	Strategic Planning	Complete

1.5 Manage the supply and availability of parking across the region					
1.5.1	Develop a Regional Parking Management strategy	A Regional Parking Management strategy to manage the design, supply and utilisation of parking appropriate to our various places and users	Short-term	Strategic planning	Not yet commenced
1.5.2	Develop parking management provisions in the planning scheme	Parking management provisions in the planning scheme can be used to manage the supply and availability of private parking	Short-term	Strategic Planning	Completed through the Planning Scheme Policy, subject to review and refinement
1.5.3	Developing centre parking management plans	<p>Centre Parking management plans will:</p> <ul style="list-style-type: none"> • Integrate parking policy with land use development and transport improvements for the centre concerned. This includes the means by which the Council is responding to changes in land uses, including higher density, mixed use development where appropriate, and future transport investment and public transport service improvements. • Identify policies for the management and supply of public parking, both on-street and off-street and anticipated changes over time. This includes prioritising short stay parking where appropriate, and measures for protecting residential areas from any spill-over of commuter parking. • Set out how the Council will manage public long stay/commuter parking, both on-street and off-street to achieve the Region's strategic objectives and outcomes. 	Medium-term	ECM with support from Strategic planning	Not yet commenced

1.6	Identify opportunities for flexible working arrangements across the region				
1.6.1	Identify opportunities within the Regional Economic Development Strategy to support increased access to broadband.	Improved broadband will provide greater opportunities for people to work from home or employment hubs.	Medium term	EDCS	Not yet commenced
1.6.2	Support increased opportunities for co-working across the region	The Redcliffe co-working hive should be used as a test case to determine demand for increased opportunities within the region for co-working facilities.	Short-term and ongoing	EDCS	Not yet commenced
1.6.3	Explore opportunities across the region for greater use of flexible working arrangements	Consideration of flexible working arrangements should be included as part of the development of travel plans and initiatives.	Short-term and ongoing	ECM	Not yet commenced

B. Better transport choices					
Actions	Purpose	Timeframe	Responsibility	Status	
2.1	Identify opportunities to support the concept of ride sharing within Travel Choice plans				
2.1.1	Identify opportunities to support the concept of ride sharing within Travel Choice plans and policies.	Consideration of ride sharing should be included as part of the development of travel plans and initiatives.	Short term and on-going	ECM	Not yet commenced
2.1.2	Identify opportunities for a pilot scheme to support informal carpooling.	Council review opportunities to improve and/or provide parking facilities to support informal carpooling that is occurring within the region in places such as Boundary Road, Narangba.	Medium term	ECM	Not yet commenced

C. Knowledge of Transport Choices					
Actions	Purpose	Timeframe	Responsibility	Status	
3.1	Continue to deliver, expand and implement the Moreton Bay Regional Council Travel Choice Program				
3.1.1	Continue to deliver, expand and implement the Moreton Bay Regional Council Travel Choice Program (MBRC Travel Choice School Program) to schools throughout the region	Increase the number of schools involved within the Travel Choice School Program	Short-term and on-going	ECM	Underway
3.1.2	Expand the MBRC Travel Choice Program to including business and community travel plans	Expand and review the opportunities to expand travel choice planning to business, sporting facilities and community facilities.	Medium-term	ECM	Not yet commenced
3.1.3	Develop and implement the Moreton Bay Regional Council Sustainable Travel Plan	Moreton Bay Regional Council will develop a Travel Choice Plan to support staff to move towards more sustainable transport choices.	Short-term and on-going	ECM	Underway
3.1.4	Develop the Moreton Bay Regional Council Travel Choice Plan Toolkit	A document to provide guidance, tools and materials for organisations to develop their own travel plans	Short-term and on-going	ECM	Not yet commenced
3.1.5	Identify any infrastructure and safety works required to support travel plan implementation	Development of travel plans, monitoring and review may identify infrastructure and safety improvements needed to support ongoing transport choice changes.	Short-term and on-going	ECM	Underway
3.1.6	Develop the MBRC Travel Choice Strategic Implementation Plan	The Plan will assist community facilities and groups, sports grounds, local businesses and other external stakeholders to understand what the Travel Choice Program entails how the program will benefit the region and the direction the program will take to ensure sustainable changes cross the region.	Short-term and on-going	ECM	Underway

3.1.7	Develop a MBRC Travel Choice communication plan	MBRC Travel Choice communication plan will identify different media and methods to communicate the travel choice program.	Short-term and on-going	ECM	Not yet commenced
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Framework for delivery					
Actions		Purpose	Timeframe	Responsibility	Status
4.1	Adopt MBRC Travel Demand Management Strategy as Council policy				
4.1.1	Adopt the strategy as Council Policy and implement actions through Council programs	The formal adoption of the Strategy will give currency to its Action Plan and provide a strategic direction for its projects and programs.	Short term	Strategic planning	Underway
4.1.2	Develop a monitoring and review program for the strategy and program of actions	Monitoring and review of the strategy and program of action will identify where improvements can be made and benefits of the program	Short term	ECM	Not yet commenced
4.1.3	Develop and implement the MBRC Integrated Design Manual across council	The Design Manual is based on the integration of various elements of streets and public spaces using current best design practices.	Short term	Strategic Planning, ECM and DS	Underway
4.1.4	Establish benchmarks to ensure innovation is part of the design new travel demand management initiatives	Travel demand management is a rapidly-evolving field. It is important to keep abreast of advances and experience in this area to add value to the MBRC program.	On-going	Strategic Planning and ECM	Underway
4.1.5	Develop and apply a process to include design and access statements with all relevant development and works projects.	Designs meet our policy direction as embraced in the Strategic Framework and the principles contained within our land use and infrastructure strategy. Designs must be integrated with the surrounding urban form and context to support sustainable transport choices.	Short term	Strategic planning, ECM and DS	Underway

4.1.6	Further develop and scope the suite of programs contained within this Action Plan to implement the strategy	The programs required by this Action Plan will guide implementation of the projects and investments necessary to realise the vision. These programs are necessary to inform capital works and resourcing allocations, Priority Infrastructure Plans, and operational budgets.	Short-term and on-going	Strategic planning, ECM and CES	Underway
4.1.7	Establish budget allocations to fund actions and relevant programs	The adoption of the Strategy and Action Plan provides direction for implementation. A budget allocation to fund actions and relevant programs is necessary to meet that commitment.	Short-term and on-going	Strategic planning with ECM	Underway
4.2	Assign responsibility for the implementation of the Strategy within the organisation				
4.2.1	Establish a streamlined process where travel demand management projects and programs are scoped and authorised through a single point of authority in the organisation	A single point of contact to ensure coordination of projects and programs across Council, and to ensure consistent application of the Design Manual and relevant planning codes. A single point of contact will provide transparent accountability.	Short-term	ECM	Underway
4.3	Establish cross-departmental processes to ensure effective implementation of the Strategy				
4.3.1	Establish a multi-disciplinary design review panel	Transport facilities are influenced by a wide range of disciplines including engineering, urban design, land use planning and social and community interests. A multi-disciplinary review panel will ensure that outcomes are appropriate to the whole range of user needs, rather than simply complying with rigid standards.	Short-term	Strategic planning, ECM, CES and DS	Not yet commenced
4.3.2	Establish regular planning and design meetings across departments	Regular planning and design meeting will ensure the strategic intent is being delivered at the design and implementation stages.	Short-term and ongoing	Strategic planning, ECM, CES and DS	Underway

4.4	Work with State Government to deliver outcomes to meet Council's vision				
4.4.1	Establish regular planning and design collaborative reviews with State Government and MBRC	Regular collaborative meeting will ensure the strategic intent is being delivered at the design and implementation stages to ensure consistency of outcomes across agencies.	Short-term and on-going	Strategic planning and TMR	Underway
4.5	Investigate alternative funding sources				
4.5.1	Review and monitor funding sources and consider innovative methods for delivering of travel demand management program.	Funding of infrastructure and programs should not be limited to conventional methods. Maintaining corporate knowledge of new ideas and contemporary research may provide opportunities to deliver programs earlier than planned.	Short-term and on-going	Strategic planning and ECM	Not yet commenced

Appendix B

**Moreton Bay Regional Council Modified Parking Rates Report
Travel Demand Management Strategy 2012-2031**



FINAL REPORT

Moreton Bay Regional Council Modified Parking Rates Report

Moreton Bay Regional Council

Prepared by:

MRCagney Pty Ltd

11 October 2013



Document Information

Client	Moreton Bay Regional Council
Job Number	5087
Title	Modified Parking Rates
Prepared by	MRCagney Pty Ltd Brisbane
Date	11/10/2013

Quality Assurance Register

Issue	Description	Prepared by	Reviewed by	Authorised by	Date
a	Draft Report	TC	SB	SB	
b	Final Draft for Councillors	TC	SB	SB	22/5/2013
1	Final Report	TC	MW	SB	11/10/2013

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1. Introduction

MRCagney have been appointed by Moreton Bay Regional Council to assist with the preparation of a new parking code as part of the new planning scheme.

MBRC has prepared a technical paper to support the revision of current parking rates. Amongst other inputs, this paper has drawn upon:

- The vision and strategy for the regions' growth and development to 2031 (Moreton Bay Region Draft Strategic Framework);
- 4 parking principles devised from internal consultation in 2012;
- Comparisons of the parking rates of other planning schemes in SE Queensland; and
- Other literature informing contemporary policies to parking regulation (e.g. Next Generation Planning Handbook, TOD Guide, Complete Streets Guide).

The key preliminary recommendation of the technical paper is to propose a combination of parking minimums and maximums, applying geographically to groupings of precincts that are based on a future land use model that establishes the specific planning and design outcomes expected in a variety of locations throughout the region.

This report suggests changes that might be made to this technical report to achieve the most appropriate outcomes for MBRC and support the strategies in place for the key activity centres in particular.

This report also provides an overview of the research that has been undertaken by MRCagney to assist in the development of the parking code and supporting schedules. This research has been based on information and outcomes from other towns and cities both within Australia and abroad. Many have similar issues and desires as the Moreton Bay key centres and are worth examining.

2. Moreton Bay Parking – Current Situation and Issues

Research has demonstrated that current common parking management practices of supplying to meet perceived demand directly result in inflated land costs, reduced urban density, high rates of vehicle ownership and use, and more expensive goods and services. Moreover, by encouraging high rates of vehicle use, it indirectly results in further negative externalities, such as congestion, air pollution, storm-water contamination, and noise. In short, current parking management contributes towards a host of expensive and undesirable consequences (Shoup, 2005; Litman, 2006). These are contrary to strategic economic, social and environmental goals, and also undermine State and Federal sustainable growth objectives.

The current parking management paradigm assumes that all human activities will result in a need to park vehicles, and that this need should be predicted and provided for by new developments. In Moreton Bay, minimum parking requirements are implemented through the Planning Scheme. The compliance costs associated with meeting these minimum parking requirements particularly in the key urban centres has been recognised by Council. The current issues surrounding minimum parking requirements in such locations will continue to escalate and impede efficient land use development without necessary changes to the current approach to parking. Furthermore, as the cost of parking is bundled with development, motor vehicle users do not perceive the full cost of their trip. This subsidises driving relative to other modes. In this way, current parking management adversely affects both land use development and the land transport system.

The oversupply of car parks in town centres, growth corridors and catchments surrounding current or future transit infrastructure, resulting from the historical application of minimum requirements, has suppressed the market value of car parks such that the perceived value of a car park is next to nothing. The current regulatory framework in the Planning Scheme is likely to continue exacerbating the oversupply of parking surrounding key activity centres. The economic, social and environment costs of maintaining the status quo are far too high for the community to sustain and will impact on the vitality of key centres.

Current minimum parking requirements (minimums) attempt to predict demands for parking generated by individual developments based on the type (residential, commercial, etc) and scale of the activity. Scale may be based on the number of people the activity is designed to provide for (e.g. a church), measured by area (gross or leasable), or (in residential development) the number of bedrooms. Minimum parking requirements have developed in response to rapid growth in car ownership and growing concerns about excessive demand for public parking. At this time there were limited technological options for managing public parking, such that most places in Australia followed the lead of those in the U.S. (notably Los Angeles) and required private developments to provide their own off-street parking. However, during the last 25 years an extensive body of research and professional experience has highlighted the negative impacts of minimum parking requirements, including:

- Economic development – Minimum parking requirements increase the cost of development, particularly in medium to high density developments (Donovan and Genter, 2008);
- Travel and lifestyle – low-cost parking has stimulated demand for vehicle based travel and lifestyle patterns (Seibert, 2008);
- Environmental sustainability – low-cost parking undermines more environmentally efficient travel and lifestyle options (Shoup, 2005);

- Social equity – compliance costs of minimum parking requirements disproportionately fall on low income households (Litman, 2009); and
- Urban form – minimum parking requirements fragment the urban form and contribute to sprawl (Donovan, 2009, Donovan et al., 2009, Genter et al., 2008).

One of the key issues with minimum parking requirements is that they bundle the costs of parking into development, which are subsequently subsumed within the cost of goods and services. People who drive do not face the costs of providing parking, whereas people who do not drive are not rewarded for not using parking spaces. For example, businesses pay for parking through higher rents for premises and subsequently include these overheads in the cost of the goods and services they provide.

Minimum parking requirements also impact on the affordability of housing, by including the cost of parking construction into the cost of housing. This cost is passed on to people buying or renting housing who, as a result, have little choice in whether or not they pay for parking, even if they may not need it.

Housing affordability is an issue in Queensland, particularly in those cities with high growth rates. Where minimums apply, developers are required to provide a certain amount of parking even if it is not required by the market (i.e. tenants that do not expect or need so much parking). In key centres and in transit catchments where the cost of land is higher, the land and compliance costs associated with parking requirements can act as a deterrent to development – driving development to lower density areas where land costs make it easier to comply with minimum parking requirements. In medium to high density areas the impacts of parking minimums are particularly pronounced where structured or underground parking often becomes the only way of complying with the required amount. Providing structured or underground parking can add \$20,000 - \$40,000 per car park to the cost of development. Land required to meet minimum parking requirements could be used for more valuable activities such as retail and commercial activities and open space. Less land required per development contributes to a more compact urban form and creation of cohesive centres that in turn support transit networks and greater prevalence of walking and cycling. If we consider that one parking space can take up to 30m² (once room for vehicle access and manoeuvring is included) developments requiring any more than 1 space per 30m² of floor area (and there are quite a few of those) actually have more area devoted to parking than for the actual proposed land use.

Minimum parking requirements require parking to be provided on a site-by-site basis and undermine opportunities for sharing, which is possible where different activities generate peak parking demands at different times. Shared parking is an efficient way of providing for parking (even if the parking is still provided free) as it reduces the total number of parks needed to support a given level of development, by exploiting synergies between the parking demands of different activities. Many opportunities for shared parking exist in centres and transit catchments, where often many diverse activities exist in close proximity. While shared parking may already occur informally in some areas, the uptake of shared parking arrangements is seriously dented by minimum parking requirements because they ensure that every individual development provides for its own parking demands, irrespective and independent of the parking that is available in surrounding developments for the right price. Because minimums are generally linked to the demand for free parking, parking is over-supplied and under-priced (relative to its resource costs), which in turn dilutes the price signals which would otherwise encourage activities to share parking resources. Moreton Bay's current parking policies essentially distort market-based price signals and contribute to a host of negative (albeit unintended) consequences.

Essentially, developments are required to provide more parking than unconstrained demand. This leads to a disincentive for developers to invest in transit rich locations such as Caboolture, Strathpine and Redcliffe/Kippa Ring.

3. Best Practice Review

The Moreton Bay Regional Council is not alone in the issues they face with excessive minimum parking requirements in locations well served by public transport. Throughout Australia and abroad a number of cities have grappled with the same issues and implemented revised parking policies and rates with successful results. To support the development of an appropriate parking policy and parking rates in activity centres and areas of more intensive activities a best practice review has been undertaken.

3.1 Existing Queensland Based Best Practice Guidelines

3.1.1 QLD TOD Guidelines

The Transit Oriented Development: Guide for Practitioners in Queensland, or more commonly referred to as the QLD TOD Guidelines, is designed to build understanding of the transit oriented development (TOD) concept and best practice in Queensland. These guidelines provided information on urban density and community diversity and various technical standards and specifications, including parking rates.

The TOD Guidelines support the adoption of maximum parking standards, the adoption demand reduction measures, and the application of best practice urban design principles. Examples of travel demand strategies suggested include unbundling parking, consolidation and sharing of parking between different developments and land uses, introduction of car share schemes, and priced parking. Table 3.1 outlines the suggested maximum parking rates for different TOD precinct types. The varying rates for different precincts recognise the varying functions, demand for parking, density and supply of transit in the different precincts. It is suggested that parking should not exceed the base maximums and adoption of the preferred maximums is encouraged.

An additional key noteworthy feature of the TOD Guidelines is the simplification of land uses to residential and retail and office, preventing the transition to different uses being stifled by onerous and complex parking requirements.

Table 3.1: TOD Guidelines - Indicative Parking Rates

Precinct Types	Residential (car spaces per unit)		Retail and Office (square metres per car space)	
	Base Maximum	Preferred Maximum	Base Maximum	Preferred Maximum
City Centre	0.75	0.5	400	600
Activity Centre	1	0.75	100	200
Specialist Activity Centre	1.25	0.75	100	150
Urban	1	0.75	200	300
Suburban	1.25	1	75	100
Neighbourhood	1.25	1	50	100

3.1.2 Complete Streets

Complete Streets is intended to provide a uniform approach to designing streets in Queensland. Both on-street and off-street parking plays an extremely important role in the design of streets. It acknowledges the challenging aspects of parking in developments and the role that parking can play in travel demand.

Maximum rates have been suggested particularly in areas where alternative transport options such as public transport, walking and cycling exist. The rates have been derived from a review of parking rates from planning schemes throughout Queensland and proposed rates from research on urban mixed-use areas.

Table 3.2 provides an overview of the suggested maximum parking rates contained within Complete Streets. The TOD Guidelines and Complete Streets provide an indicative guide as to the parking rates that the Moreton Bay Regional Council should aspire to adopting in the future.

Table 3.2: Complete Streets Indicative Parking Rates

Location	Commercial (in locations with quality PT access)	Commercial	Residential (in locations with quality PT access)	Residential
Capital CBD	1 space per 500m ²	1 space per 200m ²	0.5 space per unit/house	1 space per unit/house
Regional CBD	1 space per 150m ²	1 space per 100m ²	1.00 space per unit/house	1.25 spaces per unit/house
Capital Suburb	1 space per 100m ²	1 space per 75m ²	0.75 space per unit/house	1.00 spaces per unit/house
Regional Suburb	1 space per 75m ²	1 space per 50m ²	1.00 space per unit/house	1.25 spaces per unit/house

3.2 Case Studies

The following case studies present the response that different cities and towns have taken towards the management of parking, particularly in areas well served by public transport.

3.2.1 Gladstone, Queensland

Gladstone currently has high minimum parking rates which are perceived to impact on the vitality and general appeal of the CBD. Issues include but are not limited to:

- A general lack of pedestrian activity caused by a number of factors, including parking oversupply due to minimum parking rates;
- A perceived undersupply and an actual oversupply of car parking;
- A perception that some types of development are not viable in Gladstone due to high minimum parking rates; and
- A perception that parking undersupply is negatively impacting on CBD retail trade.

Consequently, Gladstone Regional Council is reviewing their rates and the use of minimums. Maximum parking rates and the simplification of land uses is being considered. Rates being considered are provided in Table 3.3. These rates are in line with, but slightly more generous than the parking guidelines in “Complete Streets”.

Table 3.3: Gladstone Maximum Parking Rates - Under Investigation

Land Use	Parking Requirement
Non residential	Max 1 space per 50m ² GFA
Residential – permanent	Max 1 space per dwelling (site average)
Residential - serviced/short term	Max 1 space per 3 units

3.2.2 City of Cockburn, Western Australia

Cockburn Central, a mixed-use TOD located in Perth's growing south-western corridor, undertook a review of their parking rates in 2007 that reflected the transit oriented nature of the area. The review suggested parking rates be adopted as outlined Table 3.4. The rates suggested are significantly lower than the previously required provision.

Table 3.4: City of Cockburn Parking Rates

Land Use	Parking Requirement (minimum)
Residential	a) 1 car bay for one or two bedroom dwellings; and b) 2 car bays for three (or more) bedroom dwellings
Retail (where the built form does not facilitate an easy transition to Office uses)	4 bays/100m ² GFA
Office (where the built form does not facilitate an easy transition to Retail uses)	2.5 bays/100m ²
Mixed Use (where the built form facilitates alternative opportunities for Office and Retail uses)	3 bays/100m ² GFA

3.2.3 Melbourne, Victoria

In 2010, Melbourne introduced a maximum parking requirement of 1 space/dwelling for residential developments over four storeys in inner city areas that are well served with public transport. Previously, onerous minimum requirements required 2 spaces per dwelling.

The maximum rate still applies to developments below four storeys, however reductions may be granted. For residential developments below four storeys and other land uses which stipulate minimums, reductions may be granted (including to zero) when consideration is given to the following:

- The car parking demand likely to be generated by the use; and
- Whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the use.

An assessment is generally required to be undertaken to estimate parking requirements when reductions are sought. These assessments consider the following:

- Multi-purpose trips within an area;
- The variation of car parking demand over time;
- The short-stay and long-stay car parking demand;
- The availability of public transport in the locality;
- The convenience of pedestrian and cyclist access to the site;
- The provision of bicycle parking and end of trip facilities for cyclists; and

- The anticipated car ownership rates of likely or proposed occupants (residents or employees).

3.2.4 Sydney, New South Wales

The City of Sydney was on the front foot in Australia with the adoption of maximum parking rates in 1996 in the Central Sydney Local Environmental Plan (LEP). The maximum rates expressed in the LEP predominantly related to residential uses and are outlined in Table 3.5.

Table 3.5: Central Sydney LEP 1996 Maximum Parking Rates

Land Use	Maximum Parking
Dwelling House	2 spaces/dwelling
Studio	0.25 spaces/dwelling
1 bedroom apartment	0.5 spaces/dwelling
2 bedroom apartment	1 space/dwelling
3 or more bedroom apartment	2 spaces/dwelling
Hotels	0.2 spaces/room

The City of Sydney Development Control Plan (DCP) and LEP were updated in 2012 with maximum parking rates further reduced and refined from 1996 levels. The LEP outlines maximum car parking requirements for residential, retail and commercial uses and is based on a sites proximity to public transport and general services and facilities. Areas are classified as either zone A, B or C depending on the proximity to public transport. Table 3.6 outlines the maximum parking requirements outlined within The Central Sydney LEP 2012.

Table 3.6: Central Sydney LEP 2012 Maximum Parking Rates

Land Use	Maximum Parking
Residential (dwelling houses, attached dwellings and semi-detached dwellings)	1 – 2 spaces/dwelling
Residential (flat and multi dwelling housing)	0.4 spaces/studio 0.5 spaces/1 bedroom dwelling 0.7 -1 spaces/2 bedroom dwelling 1 - 1.2 spaces/3 bedroom dwelling
Office	1 space/75 – 175m ² of GFA
Retail	1 space/50 – 90m ² of GFA

A key feature of the City of Sydney DCP 2012 is the provision made for managing transport and parking requirements. For example, commercial developments that are likely to generate a significant demand for transport are to include initiatives to promote walking, cycling and the use of public transport through a green travel plan. The requirement to provide a green travel plan in Sydney generally involves the ongoing monitoring of travel behaviour for 5 years, in order to measure the effectiveness of measures put forward in the plan

Car share schemes are also covered, and it is a requirement that car spaces are made available in developments for car share schemes. For every 50-90 car spaces provided (dependent upon location) in a residential development, one car space must be dedicated to car share scheme vehicles. For commercial and retail developments, the dedication of one space for every 30 to 50 car spaces is specified. There is also provision for mechanical parking mechanisms such as car stackers and

turntables. However, these cannot be used for car spaces designated for car share schemes or visitor parking. The parking provided by such devices is also included in the parking provision.

3.2.5 North America overview

A number of cities throughout North America have recognised that parking supply in locations well served by public transport often exceeds demand, which is the direct result of historical excessive parking minimums. As a result, different towns and cities in North America have either reduced minimum requirements or implemented maximum parking rates, and vary their rates based on proximity to public transport.

Table 3.7 provides a summary of various North American cities, their parking rates, and other noteworthy features of their parking policies.

Table 3.7: North American Parking Rates

City	Minimum or Maximum	Parking Rate Example	Comments and other Features
Calgary, Alberta	Maximum and Minimums	<i>Residential</i> 1.25 – 1.5 spaces/dwelling (max) Parking rates sited specifically for area within 600m of existing or planned LRT station (rates vary depending on area –CBD, inner city or suburbs). <i>Retail and Commercial</i> Minimum rates	10% reduction of parking requirements from minimums for all other uses within 400m of LRT station. For every 6 bicycle spaces provided in excess of minimum bicycle parking standards reduces parking requirements by 1 space. Reduction of parking requirements where transport demand measures are proposed that are approved by the development authority and attached to conditions of approval.
Toronto, Ontario	Maximum	<i>Residential</i> 0.2 – 1.65 spaces per dwelling dependent upon the number of bedrooms and location.	Parking requirements are based on geographic location and frequency of public transport services irrespective of mode.
Ottawa, Ontario	Maximum	<i>Residential</i> 1.5 – 1.75 spaces/dwelling <i>Retail</i> 1 – 2.7/100m ² of GFA <i>Commercial</i> 1 – 2.7/100m ² of GFA	Parking rates sited specifically for sites within 600m of rapid transit stations. Variations dependent upon area (divided into central area, inner city and suburban). Elsewhere in city minimum rates apply.
Los Angeles, California	Minimum	<i>Residential</i> 2 spaces/2 bed unit 1.5 spaces/1 bed unit <i>Office</i> 1 space/45m ² <i>Retail</i> 1 space/25m ²	Reductions in parking rates allowed in areas well served by public transport: 40% for residential 60% for retail and commercial Los Angeles is currently introducing more flexible parking standards to reflect the unique nature of different locations including possibility for maximum rates.
City of Vancouver,	Minimum and maximum	<i>Residential Permanent</i> Max 0.7/dwelling	In the CBD parking maximums are <u>not</u> to be exceeded.

City	Minimum or Maximum	Parking Rate Example	Comments and other Features
British Columbia		<i>Residential Short Term</i> Min 0.3 spaces/room Max 0.5 spaces/room <i>Office</i> Min 1 space/70m ² Max 1 space/45m ²	Outside of downtown areas a number of locations where only minimums are specified, 20% reductions allowed for locations within close proximity of public transport.
Mountain View, California	Minimum	<i>Residential</i> 1 to 2 spaces/dwelling dependant on number of bedrooms <i>Office</i> 1 space/30m ² of GFA	Sites located in the "T" zone which are those located within 650m of transit have reduced parking requirements of 20% below specified minimums. Further reductions allowed were shared parking arrangements are established.

Although not included in the above table, San Diego, California has recently undertaken a parking study specifically investigating parking rates for developments well serviced by public transport. The study involved the review of parking utilisation in existing developments well served by public transport. The study suggested revised parking rates and parking management strategies that should be applied in conjunction with lower parking standards.

Table 3.8 outlines the rates suggested in San Diego and the percentage reduction from standard rates. Note that rates are minimum rates and the rates for office and retail are based on Gross Leasable Floor Area (GLFA).

Table 3.8: San Diego – Suggested Parking Rates for Locations Well Served by Public Transport

Land Use	Suggested Parking Rate	Reduction from Standard Rates
Residential	1.25 spaces/dwelling	0-50% dependant on location
Office	2.9 spaces/100m ² of GLFA	12-20% dependant on location
Retail	3.6 spaces/100m ² of GLFA	0-10% dependant on location

The study has also suggested further parking reductions be allowed where demand reduction measures have been implemented. Table 3.9 outlines the demand reduction measures suggested and the corresponding reduction in parking rates.

Table 3.9: Parking Requirement Reduction for the Adoption of TDM in San Diego

Travel Demand Measure	Further Parking Reduction
Shared Parking	10 – 20%
Public Transport Pass Program for Employees	5 – 20%
Priced Parking	5 – 20%
Unbundled Parking	5 – 10%
Car Sharing	2 – 5%

3.2.6 Edinburgh, Scotland

In 2009 the City of Edinburgh adopted new standards for the levels of parking permitted in new developments. Maximum parking standards were set, based on a zone system with differing rates that reflect the accessibility of the zone to public transport and the light rail system which is currently under

construction. Some zones specify minimum standards to effectively provide an appropriate range for the supply of parking. A key feature of Edinburgh's parking standards is the flexibility in rates allowing reductions from minimum rates. Parking provision below minimum rates may be permitted for the following reasons:

- Parking provision is impossible on the site but the development is desirable for other reasons;
- Lower parking provision is required for reasons of townscape, air quality or transport impact; and
- The developer can justify lower provision through demand management measures while not causing unacceptable parking overspill.

An example of parking rates in Edinburgh is provided in Table 3.10. Rates for zones 1 and 2 as well as zone 5 have been provided to illustrate the range of rates for different locations (zone 1 is located in the CBD within close proximity to public transport and zone 5 is located on the periphery of the city with a lower level of access to public transport).

Table 3.10: Edinburgh Parking Standards

Land Use		Zone 1 and 2	Zone 5
Residential (3 bedroom apartment or house)	Min	0 spaces/dwelling	0.75 spaces/dwelling
	Max	1 space/dwelling	1.5 spaces/dwelling
Office	Min	0	1/250m ² of GFA
	Max	1/500m ² of GFA	1/120m ² of GFA
Retail under 500m ²	Min	0	1/250m ² of GFA
	Max	1/100m ² of GFA	1/100m ² of GFA
Retail over 500m ²	Min	0	1/120m ² of GFA
	Max	1/70m ² of GFA	0/70m ² of GFA

3.3 Demand Management

A requirement for reduced parking in development proposals in a number of cities and towns is that they are accompanied by demand reduction measures. Specific reductions are often not cited for individual demand reduction measures. Reduction rates expressed range from 5% to 30%. To gain a greater understanding of the potential impact different demand reduction measures have on parking demand research undertaken by Todd Litman from the Victorian Transport Policy Institute has been reviewed. The typical reduction in car parking requirements for different demand reduction measures is provided in Table 3.11.

Table 3.11: Demand Reduction Measures - Impact on Parking Demand

Demand Reduction Measure	Parking Reduction
Shared Parking	10% - 30%
Priced Parking	10% - 30%
Unbundled Parking	10% - 30%
Provision of bicycle facilities	5% - 15%
Improved User Information	5% - 15%
Financial Incentives	5% - 15%

The following provides an explanation of various travel demand management tools:

↳ Shared Parking

- In mixed use town centres there are considerable opportunities to share parking between uses with complementary peak hours (Smith, 2005). The great advantage of shared parking facilities is that they are more efficient. Each space can be used more hours during the day, week or month. There are no significant operating and management constraints to preclude the development of a shared parking facility. However, a number of factors must be considered to ensure the efficient design, operation and management of shared parking facilities (Smith, 2005). These include local peak times of demand, availability of access by a number of different users, clear information about appropriate use and availability, and a good pedestrian (and/or public transport) access between the facility and the destinations it serves.
- Communities and authorities are sometimes concerned about the ramifications of significant land use changes that might be relied upon in a shared parking regime. In centres it is imperative for reasons other than parking that the land uses are diverse and can change with little impediment. In this environment it is considered that shared parking arrangements will be extremely beneficial and robust enough to withstand the anticipated changes in land use.

↳ Unbundled Parking

- Unbundled parking refers to the strategy of separating the costs of purchasing or leasing residential and commercial property from parking resources. For example, in a medium density residential development, dwellings may be purchased separately from the car parks. This “unbundles” the cost of parking from the cost of living and supports the principle of consumer choice. For example, unbundled car parks associated with residential development in town centres can cost an additional 20-25% of the total purchase price of smaller dwellings (Litman, 2006).

↳ Priced Parking

- Priced parking has been shown to be an extremely effective demand management tool (Booz Allen Hamilton, 2001; Shoup, 2005). The advantage of pricing is that it provides for high priority customers while discouraging the inefficient use of convenient parking resources by long stay users such as commuters. Priced parking is most appropriately implemented in areas experiencing more than 85% maximum occupancy, in that pricing is first and foremost about managing demand, rather than a mechanism for gathering revenue (Litman, 2006). The price level set will thus aim to keep occupancy levels high, but not saturated, resulting in a situation where a few car parks are almost always available for those who are willing to pay for them.

↳ Car Share Schemes

- Car-share schemes are based around the management of a pool of vehicles parked at numerous locations around a community. Members of the organisation are able to book vehicles online and then gain access to the vehicles via electronic swipe cards. One car-share vehicle is typically utilised by a large number of people, thereby distributing the costs of car-ownership, such as maintenance and parking, across a larger number of people. Membership to a car-share organisation is considered most attractive to households that do not rely on vehicles for home-to-work commuting, or small to medium sized companies that do not need to manage their own fleet. In this way, car-share vehicles are frequently used for commercial purposes during the day and residential needs during off-peak hours.

↳ Green Travel Plans

- Green travel plans are a management tool designed to assist all types of developments (particularly commercial and residential) reduce travel demands associated with various types of everyday trips, such as the journey to work. Travel plans help to address issues affecting how people choose to travel, such as company cars and free parking in commercial environments. In many situations some changes may catalyse large reductions in vehicle use, including: parking cash-out – provides commuters who normally receive free parking the option of receiving cash instead; company car cash-out – as per parking cash-out except for company cars; or PT passes - involves providing employees or new residents with a subsidised PT pass in place of car park, provision of transport information and personalised travel planning services for new residents or employees, and end of trip facilities for cyclists, including showers and lockers. Travel plans thus support other parking strategies by undertaking a detailed assessment of the barriers to shifting mode. It is important to realise, however, that the motivation to conduct travel plans is best provided by the accurate realisation of the costs associated with vehicle travel. For this reason, the use of travel plans is expected to increase when the perceived value of parking reflects its underlying costs.

3.4 Cash in Lieu

A common way for applicants to reduce the minimum parking requirement is to offer, or be asked, to pay cash in lieu of parking provision. Traditionally these schemes would be for Council to accept cash in lieu of parking provision so that Council itself could build some consolidated parking nearby to compensate for the apparent shortfall. These schemes have been plagued with problems and replacement parking has rarely been build. The impact of this has been to show that perhaps the spaces were never required, and also that the schemes may not provide contributors credible value from their contributions. Despite this, it is still our opinion that, when properly administered, these schemes can still be effective tools.

In this instance we would recommend that cash in lieu schemes be available. However, given that one of the main issues we have at the Moreton Bay may well be parking oversupply, using the money for more parking would be quite counterproductive. We propose that the money be linked to specific alternative mode programs, which may be the bikeway program, any pedestrian programs, etc, and should not necessarily be geographically limited.

4. Removing Minimum Parking Requirements

Section 2 of this report has illustrated some of the unintended consequences that minimum parking requirements have had for urban areas. These consequences include urban sprawl, fragmented parking facilities, and artificially low costs for the use of private vehicles.

Removing minimum parking requirements allows developers the freedom to determine the marginal value of providing car parks. In this way, the market is allowed to price out unnecessary demand and/or supply in favour of more efficient land uses.

It is expected that a primary benefit of removing minimum parking requirements will be accelerated levels of brown-fields redevelopment on sites which were previously constrained by the need to provide on-site parking. Removing parking requirements is expected to result in:

- The development of land which is currently used for parking into more productive activities, resulting in higher development densities; and
- The adaptive reuse of older buildings, where affordable residential accommodation, such as loft apartments, may be incorporated onto floors above ground level.

Removing minimum parking requirements means that parking facilities will not lock up valuable urban land. Parking becomes a dynamic land use, which may change over time according to supply and demand. Car parks are accommodated as a consequence of development, rather than as a prerequisite, with the marginal benefit weighed up against the marginal costs of dedicating more land to parking and constructing the parking facilities.

Perceived risks of removing minimum parking requirements tend to revolve around the fact that developments may under-estimate parking demands and exploit public and private parking resources that are available in the surrounding area. This perceived risk, however, is predicated on the following assumptions:

- Private and public providers of parking will not take steps to manage additional demand for parking resources created by new developments;
- That parking resources will continue to be paid for by developers and building owners, rather than users; and
- The occupiers of the new development will not adjust their travel patterns and demand for parking in response to the lack of on-site parking.

These assumptions are questionable given that:

- Demand for parking is already managed, albeit inadequately, to ensure exploitation does not occur. This is typically through the application of prioritised parking controls and tow away areas in public and private areas, respectively;
- Removing minimum parking requirements is expected to result in an increased value for parking, which will make it possible for parking facilities that will cover their own costs to be provided by the Council and/or a private operator; and
- Developments without on-site parking are likely to experience reduced vehicle mode share. This recognises that the provision of parking has a significant impact on travel patterns (Booze Allen Hamilton, 2007).

Instead of removing minimums altogether, it is possible to make their application increasingly flexible, which is happening currently to a certain degree in Moreton Bay with development approvals with fewer car parks than the specified minimums. As an interim strategy for ameliorating the unintended consequences of minimum parking requirements until such time as minimum parking requirements may be removed, it is suitable. However, it is not recommended as a stand-alone strategy due to its limited benefits, high compliance costs, and increased administrative burden.

5. Relevant Research

The level of research in terms of the impact of parking in centres is relatively sparse and frequently has insufficient time for any changes to “bed down” so that more definitive impacts and outcomes can be identified. The changes to traditional parking practices are only now evolving, despite professionals being anecdotally aware for many years of the impact of poor parking practices. Notwithstanding this situation there are a number of pertinent findings from various studies which are discussed below.

Engel-Tan, Hollingworth and Anderson (2010) undertook a review of whether reducing parking minimums would lead to overall reductions in parking supply. Within the context of the amalgamated City of Toronto (which was formed by the amalgamation of six former municipalities all with differing standards still in use), this research sought to identify whether reductions in parking code requirements lead to expected reductions in parking supply and whether reducing parking standards constitutes a successful strategy in encouraging new development to provide fewer car spaces. In this case it was concluded that this will occur, but only for a portion of new development. The authors found that developers may still choose to supply parking in excess of minimum standards. This was found to vary across different land uses where for example general retail was found to be generally lower whereas large grocery stores supplied parking at a rate well above existing code requirements. As some developers appeared to still choose to supply high levels of parking, the authors concluded that other strategies such as maximum parking levels may also be warranted to ensure new development provided appropriate levels of parking provision.

Faber and LaSalle (2011) undertook a study in Scotland to investigate the impact of the national introduction of maximum parking standards and the potential impact on investment. Essentially they were seeking to assess whether maximum parking standards would compromise investment opportunities and what impact the maximum levels would have on developer confidence. Amongst a number of conclusions, the authors found that there is little or no evidence to suggest that maximum parking standards have a detrimental effect on developer confidence or investment and were frequently an important catalyst for discussions between developers and Councils. Significantly they also found that there was virtually no evidence that developments did not proceed as a direct result of the maximum requirements.

In terms of the impact of reducing parking rates at a more micro level it is useful to review literature and studies which look at the retail habits of people in terms of transport mode choices. In general terms the reduction in parking supply over the long term (the inevitable result of reducing minimums) will as a corollary mean a greater mode split amongst consumers. The level of car parking provision is often driven by the perceptions of the business owners and perhaps based less on the actual realities. It is not uncommon for retailers to argue to increased car access and resist approaches to promote alternative transport means such as walking and cycling.

Sustrans (2006) undertook a survey of retailers and consumers in two neighbourhood shopping streets in Bristol (UK). The work was undertaken as Bristol City Council was planning to improve the arterial bus network, which would have implications for a number of major strip shopping streets. Overall the study found that shopkeepers underestimated the amount of shoppers who lived locally and significantly overestimated the number of shoppers who drove to the locality. The study found over 55% of shoppers had walked to the locality contrary to the estimate of the retailers (41%). Perhaps more significantly, only 22% of shoppers arrived by car, which was just under half that of the estimate of the shopkeepers, who estimated 41% of shoppers arrived by car.

A further site specific survey based on one road (Church Road) found that the shopkeepers similarly overestimated the number of customers who arrived by car, estimating 45% whereas only 25% of shoppers drove. Furthermore, the shopkeepers estimated that 25% shoppers would visit just one store

whereas in reality only 13% of shoppers did so. The shopkeepers also thought less than one in ten customers would visit more than three stores whereas the survey found almost 30% did so. Of interest is that one traders association noted the paradox of traders wanting more car spaces whilst at the same time acknowledging that a busy and polluted road was undesirable to shoppers.

Along similar lines an Oregon Transport Research and Education Consortium (OTREC) (2013) report into consumer behaviours and travel choice identified a number of significant outcomes. The study reviewed travel choices and consumer spending across 89 businesses in the Portland (Oregon) metropolitan area. It focussed on four land use activities being restaurants, drinking establishments, convenience stores and super markets. Overall it found that customers who walk, cycle or take transit have a greater trip frequency than those who drove, which resulted in more frequent trips and a higher spending pattern over the course of a month. In fact, non-car customers spent more on average than those who drive for all businesses except supermarkets. Overall the study found that the transportation mode choice itself had little impact on spending with the logical exception of supermarkets.

Finally, it is useful to gauge whether there is a correlation between car parking provision and retail performance. Notwithstanding the age of the research, Trebilcock (1998) undertook a review of retail activity in all six mainland capital cities in Australia. This study found that the provision of car parking does not lead to better retail performance, and in fact, retail turnover appeared to be better in cities with lower levels of parking provision. The author also noted that those central business districts with high levels of parking provision attracted lower levels of public transport use. Notwithstanding the “chicken and egg” argument regarding parking provision and public transport use, such a finding is significant in light of the OTREC study discussed above.

Table 5.1: Summary of Key Research of the Impact of Different Parking Policies in Centres

Research	Description	Finding
Engel-Tan, Hollingworth and Anderson (2010)	Do parking minimums lead to reduction in parking supply? Is it a successful strategy to reduce parking provision?	Parking supply will be reduced but only in part. Developers may still exceed minimums. Maximum parking levels may also be warranted
Faber and LaSalle (2011)	Maximum parking standards and impact on investment	Little evidence maximum rates deter development. No evidence projects did not proceed as a result of maximum rates.
Sustrans (2006)	Survey of Shopkeeper perceptions and shopper behaviour in Bristol	Shop keepers overestimated the number of shoppers who arrived by car and underestimated distance shoppers had travelled. Shop keepers underestimated how many shops were visited on each trip.
OTREC (2013)	Consumer behaviour and travel choices	Consumers who walk, cycle or use transit travelled more frequently and had a higher spending pattern per trip. Transportation mode had little impact on spending.

Research	Description	Finding
Trebilock (1998)	Retail viability and car parking provision	No evidence high provision of car parking leads to better retail performance High provision of car parking attracted lower level of PT usage

6. Moving forward

6.1 Parking Rates

Ultimately, car parking provision in key centres needs to be reflective of the areas access to public transport, the multi-purpose trips created by the anticipated quality mixed use, and the anticipated vitality and economic activity opportunities provided by these conditions. There are a number of approaches that could be pursued with regards to parking requirements for new developments in key centres, which broadly include:

- Reduce minimum parking requirements;
- Reduce minimum parking requirements and allow further reductions when parking is coupled with demand reduction measures;
- Replace minimums with maximum parking requirements; and
- Remove requirements and allow the market to set parking supply.

In light of the case studies and research above it is proposed that MBRC adopt maximum and minimum parking rates in order to create an appropriate range for parking provision. Parking provision below the minimums will be possible, but this will trigger the requirement of demand reduction measures, such as unbundling of parking or provision of spaces or car share schemes. Suggested demand reduction measures and corresponding reduction in car parking requirements are outlined in the preceding sections.

It is also proposed that for certain precincts, the code be simplified in terms of land use categories to:

- Residential permanent;
- Residential temporary/serviced; and
- Non-residential (including retail and commercial).

This allows land uses to change with market conditions and trends, ensuring innovation and business are not stifled by onerous parking requirements.

Proposed rates for residential parking differ from the current MBRC mechanisms in that parking provisions are not dependant on the size of the dwelling. That is, for precinct types 1 and 2, 3 bedroom dwellings provide the same amount of parking as 4 bedroom units and 1 bedroom units. This is to promote diversity within developments and place more emphasis on the overall rate of parking for a development rather than car parking spaces for each unit. This allows a developer of a multi-unit complex to provide some dwellings with no parking and some dwellings with multiple parking spaces. This caters for a more diverse market and over time will induce more diversity and activity in centres.

It is true that someone building a large house within 800m of, for example, a rail station at a Principal Activity Centre will be limited to a maximum of one space. This actually might be an appropriate provision in any case; however it is considered that this will be such a rare event that these types of applications could be given one off consideration.

It is proposed that the precincts be used for different parking requirements as outlined in Table 6.1.

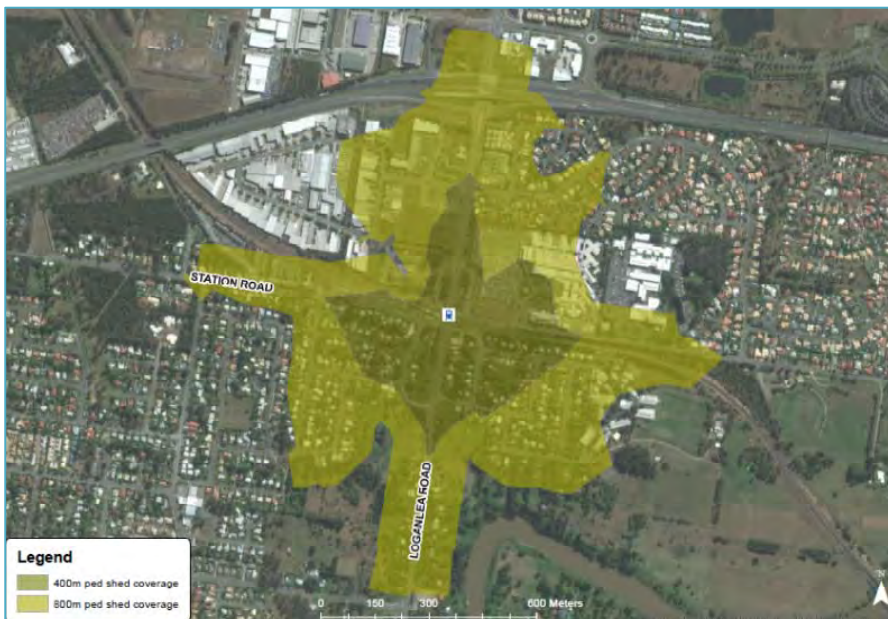
Table 6.1: Groups of Precincts for Parking Provisions Using Precincts from Draft Proposed Scheme

Type Group 1	Type Group 2	Type Group 3
Principal Activity Centre Major Activity Centre	District Activity Centre Specialised Centre Local Activity Centre Neighbourhood Activity Centre Urban Next Generation Suburban Proposed Centres	All other areas

In order to recognise the differing travel behaviour in different precincts due to the density, design, diversity of uses, and public transport options, the precincts have been sorted into three groups, as outlined above in Table 6.1. Lower maximum rates have been applied for areas surrounding the higher order places and within core areas. Note that we have proposed two levels of assessment within the activity precincts. It would not necessarily be the case that there was only one generator around which to delineate the 800m walking catchment. That is, there could be multiple generators within a precinct.

Figure 6.1 below shows an example catchment diagram, with an actual 800m walking distance, not a nominal 800m ‘as the crow flies’ circle. These would have to be created for each major generator in the Type 1 and Type 2 precincts.

Figure 6.1: Example Catchment Diagram



6.1.1 Suggested Parking Requirements

Moreton Bay is maturing as an urban region with significant improvements to its public transport system imminent. It is appropriate that it has an urban parking arrangement for appropriate places, not a regional suburban arrangement. The TOD Guidelines were written to be transferable to this very environment and should not be dismissed outright as being too restrictive or radical. In the near future it should be increasingly possible for a diverse demographic to live in Moreton Bay without a car. The following tables set the maximum and minimum parking provision requirements that should be the ultimate end game for development in the Moreton Bay area based on best practice research and MRCagney experience in

other towns and cities. The tables below are based on the catchment area around major generators within centres. These would include train stations, bus interchanges, and major employment and retail centres. It would not be unusual for there to be more than 1 node within a precinct. Figure 6.1 shows an example of a precinct with the catchments displayed.

Table 6.2: Suggested Parking Requirements – Group 1 Places

Site Proximity to Group 1 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
800m walkable catchment of major generator	Non-residential	1 per 75m ² of GFA	1 per 100m ² of GFA
	Residential – permanent/long term	1 per dwelling unit	0.4 per dwelling unit
	Residential – serviced/short term	1 per 4 units	1 per 10 units
Wider catchment	Non-residential	1 per 50m ² of GFA	1 per 75m ² of GFA
	Residential – permanent/long term	1.5 per dwelling	0.5 per dwelling unit
	Residential – serviced/short term	1 per 2 units	1 per 5 units

Table 6.3: Suggested Parking Requirements – Group 2 Places

Site Proximity to Group 2 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
800m walkable catchment of major generator	Non-residential	1 per 50m ² of GFA	1 per 75m ² of GFA
	Residential – permanent/long term	1.5 per dwelling unit	0.5 per dwelling unit
	Residential – serviced/short term	1 per 3 units	1 per 8 units
Wider catchment	Non-residential	1 per 35m ² of GFA	1 per 50m ² of GFA
	Residential – permanent/long term	2.0 per dwelling	0.75 per dwelling unit
	Residential – serviced/short term	0.75 per unit	1 per 5 units

Table 6.4: Suggested Parking Requirements – Group 3 Places

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Residential care facilities (low care)		As per residential units
	Residential care facilities (medium care)		1 for every 2 beds or serviced dwelling

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Residential care facilities (high care)		1 space for every 4 beds
	Residential care facilities (staff)		1 space per staff based on maximum residential occupancy
	Commercial Office		3 spaces per 100m ² of gross floor area
	Industrial		2 spaces per tenancy or lot plus 1 space per 100m ² gross floor area
	Residential Dwellings	3 per dwelling unit	1 per dwelling unit
	Adult store		6 spaces per 100m ² gross floor area
	Agricultural supplies store		3 spaces per 100m ² gross floor area
	Brothel	2 spaces per bedroom	1.5 spaces per bedroom
	Bulk landscape supplies		1 space per 100m ² gross floor area plus outdoor display area
	Caretakers accommodation (unless located in Place Type category 1 or 2 where the residential rate applies)		1 space per dwelling
	Child care centre		1 per employee plus 1 space per 5 children
	Club		10 per 100m ² of GFA
	Community care centre		14 spaces plus 5 spaces per 100m ² gross floor area
	Community residence		1 space per staff
	Community use in all other cases		3 spaces per 100m ² gross floor area
	Community use, if a community centre or community hall		10 spaces per 100m ² gross floor area
	Crematorium		10 spaces per 100m ² gross floor area

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Drive Through facility		Queuing for ten vehicles associated with any drive thru
	Educational establishment, if a college, university or technical institute	1 space per staff plus 0.1 space per staff for visitors	0.5 space per staff plus 0.1 space per staff for visitors
	Educational establishment, if a pre-preparatory, preparatory and primary school, secondary school or special education,	1 space per staff plus 0.1 space per staff for visitors	0.5 space per staff plus 0.1 space per staff for visitors
	Food and drink outlet		5 per 100m ² GFA (including outdoor dining) plus 10 spaces for queuing associated with drive thru
	Function facility		10 spaces per 100m ² gross floor area
	Funeral parlour		10 spaces per 100m ² gross floor area
	Garden centre		6 spaces per 100m ² gross floor area plus 3 spaces per 100m ² outdoor display area
	Hardware and trade supplies		4 spaces per 100m ² gross floor area
	Health care services, if 200m ² or greater gross floor area	14 spaces plus 5 spaces per 100m ² gross floor area	10 spaces plus 3 spaces per 100m ² gross floor area
	Health care services, if less than 200m ² gross floor area	6 spaces per 100m ² gross floor area	4 spaces per 100m ² gross floor area
	Hospital		0.8 spaces per staff plus 0.5 spaces per bed
	Hostel		1 per 2 persons based on maximum staff and clientele occupancy plus 1 for any managers dwelling
	Hotel	6 per 100m ² of GFA plus queuing for ten vehicles associated with any drive thru	3 per 100m ² of GFA plus queuing for ten vehicles associated with any drive thru

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Indoor sport and recreation, if a gymnasium		8 spaces per 100m ² gross floor area
	Indoor sport and recreation, if indoor cricket or other court game		10 spaces per court
	Indoor sport and recreation, if squash courts or enclosed tennis courts		4 spaces per court
	Indoor sport and recreation, if swimming pool		10 spaces plus 1 space per 100m ² gross floor area
	Indoor sports and recreation, if more than one facility type is provided		As per each facilities identified above or as determine by Council requiring submission of a car parking assessment report
	Motor sport facility, if a motorcycle or car race track		1 space per 5 persons to be seated plus 20 spaces per 100m ² other area
	Nightclub entertainment facility	3 per 100m ² of GFA	5 per 100m ² of GFA
	Outdoor sales		3 spaces per 100m ² gross floor area and outdoor display area
	Outdoor sport and recreation, if a court game		20 spaces per court
	Outdoor sport and recreation, if a football ground		50 spaces per field
	Outdoor sport and recreation, if a lawn bowls		30 spaces per green
	Outdoor sport and recreation, if a swimming pool		15 spaces plus 1 space per 100m ² site area
	Outdoor sport and recreation, if a tennis court		6 spaces per court

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Outdoor sport and recreation, if more than one facility type is provided		As per each facilities identified above or as determine by Council requiring submission of a car parking assessment report unless otherwise identified within a Council adopted open space or parks concept plan
	Park, if a district park, where for high use purposes such as a district playground		Unless otherwise identified in a Council adopted open space or parks concept plan
	Park, if a district park, where for recreation purposes such as picnic nodes and off-leash areas		Unless otherwise identified in a Council adopted open space or parks concept plan
	Park, if a local park		Nil
	Park, if in the District or regional park, where for sporting purposes		As per each facilities identified or as determine by Council requiring submission of a car parking assessment report unless otherwise identified within a Council adopted open space or parks concept plan
	Park, in a regional park, where for informal recreation purposes		Unless otherwise identified in a Council adopted open space or parks concept plan
	Place of worship		8 spaces per 100m ² auditorium and seating area
	Relocatable home park		11 spaces per 10 sites
	Sales office		3 spaces per 100m ² gross floor area
	Service industry		5 per 100m ²
	Service station		5 per 100m ²
	Shop	3 per 100m ² of gross floor area	3 per 100m ² (Shops less than 200m ² should be assessed for possibly no parking in a 'corner shop' environment).

Group 3 Places	Land Use	Maximum Number of Car Spaces to be Provided	Minimum Number of Car Spaces to be Provided
	Shopping centre < 5000m ²	6 spaces per 100m ² of gross floor area	4.5 spaces per 100m ² of gross floor area
	Shopping centre > 5000m ²	4.5 spaces per 100m ² of gross floor area	3.5 spaces per 100m ² gross floor area
	Short term accommodation, if a backpackers		1 space per 100m ² gross floor area plus 1 space for a minibus
	Short term accommodation, other than a backpackers		1 space per room or unit or cabin
	Showroom		3 spaces per 100m ² gross floor area
	Special industry		2 spaces per tenancy or lot plus 1 space per 100m ² gross floor area
	Theatre		10 spaces per 100m ² gross floor area
	Tourist park		1 space per 1 site or cabin plus 1 space per 10 sites for visitors
	Transport depot		2 spaces per tenancy or lot plus 1 space per 100m ² gross floor area
	Utility installation		2 spaces per tenancy or lot plus 1 space per 100m ² gross floor area
	Veterinary services		6 spaces per 100m ² gross floor area
	Warehouse		2 spaces per tenancy or lot plus 1 space per 100m ² gross floor area
	Any other use definition		As determined by council, requiring a car parking assessment report

6.1.2 Time Frame for Realisation

Moreton Bay is probably long overdue to progress to the removal of minimum parking rates and the introduction of maximum parking rates. It is likely that lack of progression to this phase of the regions development is unnecessarily filling up road space, hampering development of the public transport network, and limiting the growth of active mixed use centres, particularly the retail component. This knowledge notwithstanding, it is often difficult to build capacity in the general community to understand the significant damage done by parking oversupply. For this reason it is sometimes appropriate to approach the most desirable parking supply levels in stages.

The advantage of managing parking supply via the rates applied to developments in the Town Plan is that it takes a whole development cycle, say 50 years, maybe 70 years, for all developments that were built under the old rate to be replaced with developments which supply parking at the new rate. This gives the market ample time to adjust. The disadvantage of course is if rates are found to be too generous and result in developments with too much parking – they stay there for a long time, and naturally won't be redeveloped every time there is an adjustment to the parking rate requirements.

6.1.3 Visitor Parking

Visitor parking is an unusual phenomenon. It is unlikely developers or residents value them and almost without exception they are abused by residents and are not available for genuine visitors when the need arises, forcing them to park in surrounding streets. These code changes will be most effective in areas where there will be significantly more opportunity to travel by non-car modes, further reducing the need for to accommodate visitors. Not insisting on visitor spaces does not in any way prevent developers including visitor spaces in their developments; however there appears to be no value to the general public or Council in insisting on them.

6.1.4 Bicycles

Bicycle parking has become an accepted measure for installation in new developments. The interesting thing is the introduction of bicycle parking has been in no way attached to a shift in mode share towards bicycle use. That is, even when bicycle parking is provided, there is still the same requirement to provide car parking spaces. In the following section 6.1.5, we will discuss ways to reduce parking demand, and therefore reduce the minimum parking requirement. One of these measures is the provision of bicycle parking *in lieu of* car parking. It is proposed that the minimum bicycle parking rates be adopted as outlined in Table 6.5.

Table 6.5: Suggested Minimum Bicycle Parking Rates

Bicycles	Land Use	Minimum Number of Bicycle Spaces to be Provided
	Industrial	1 space per 3 tenancies or lot plus 1 space per 500m ² gross floor area
	Residential Dwellings	1 space per three units/dwellings
	Adult store	1 spaces per 100m ² gross floor area
	Agricultural supplies store	nil
	Brothel	nil
	Bulk landscape supplies	nil
	Caretakers accommodation (unless located in precinct category 1 or 2 where the residential rate applies)	1 space per dwelling
	Child care centre	1 per 2 employees
	Club	1 per 100m ² of GFA

Bicycles	Land Use	Minimum Number of Bicycle Spaces to be Provided
	Community care centre	2 spaces per 100m ² gross floor area
	Community residence	1 space per 3 staff
	Community use in all other cases	1 spaces per 200m ² gross floor area
	Community use, if a community centre or community hall	1 spaces per 200m ² gross floor area
	Crematorium	1 spaces per 100m ² gross floor area
	Educational establishment, if a college, university or technical institute	1 space per 10 staff or students
	Educational establishment, if a pre-preparatory, preparatory and primary school, secondary school or special education,	1 space per 10 staff
	Food and drink outlet	1 per 200m ² GFA
	Function facility	1 spaces per 200m ² gross floor area
	Funeral parlour	1 spaces per 100m ² gross floor area
	Garden centre	1 spaces per 500m ² gross floor area including outdoor display area
	Hardware and trade supplies	1 spaces per 500m ² gross floor area
	Health care services, if 200m ² or greater gross floor area	1 spaces per 200m ² gross floor area
	Health care services, if less than 200m ² gross floor area	1 spaces per 150m ² gross floor area
	Hospital	1 space per 10 staff
	Hostel	1 per 10 persons based on maximum staff and clientele occupancy plus 1 for any managers dwelling
	Hotel	1 per 200m ² of GFA
	Indoor sport and recreation, if a gymnasium	1 spaces per 200m ² gross floor area
	Indoor sport and recreation, if indoor cricket or other court game	1 spaces per 200m ² gross floor area

Bicycles	Land Use	Minimum Number of Bicycle Spaces to be Provided
	Indoor sport and recreation, if squash courts or enclosed tennis courts	1 spaces per 200m ² gross floor area
	Indoor sport and recreation, if swimming pool	1 spaces per 200m ² gross floor area
	Indoor sports and recreation, if more than one facility type is provided	As per each facilities identified above or as determine by Council
	Motor sport facility, if a motorcycle or car race track	1 space per 50 persons to be seated plus 1 spaces per 500m ² other area
	Nightclub entertainment facility	1 per 500m ² of GFA
	Office	1 per 200m ² of GFA
	Outdoor sales	1 spaces per 500m ² gross floor area and outdoor display area
	Outdoor sport and recreation, if a court game	1 spaces per 200m ² gross floor area
	Outdoor sport and recreation, if a football ground	10 spaces
	Outdoor sport and recreation, if a lawn bowls	2 spaces per green
	Outdoor sport and recreation, if a swimming pool	15 spaces
	Outdoor sport and recreation, if a tennis court	1 spaces per court
	Place of worship	8 spaces per 100m ² auditorium and seating area
	Relocatable home park	1 spaces per 5 sites
	Sales office	1 spaces per 200m ² gross floor area
	Service industry	1 per 200m ²
	Service station	1 per 200m ²
	Shop	1 per 100m ²

Bicycles	Land Use	Minimum Number of Bicycle Spaces to be Provided
	Shopping centre < 5000m ²	1 spaces per 500m ² of gross floor area
	Shopping centre > 5000m ²	1 spaces per 250m ² gross floor area
	Short term accommodation, if a backpackers	1 space per 250m ² gross floor area plus 1 space for a minibus
	Short term accommodation, other than a backpackers	1 space per 2 rooms, units or cabins
	Showroom	1 spaces per 500m ² gross floor area
	Theatre	1 spaces per 100m ² gross floor area
	Tourist park	1 space per 5 sites or cabins
	Transport depot	1 spaces per 5 tenancies or lot plus 1 space per 500m ² gross floor area
	Veterinary services	1 space per 200m ²
	Warehouse	1 spaces per 5 tenancies
	Any other use definition	As determined by council, requiring a car parking assessment report

6.1.5 Recommended Demand Reduction Measures

In order for developments to provide parking below the specified minimums in the prior section, it is suggested that a reduction only be permitted when coupled with demand reduction measures. Suggested demand reduction measures include:

- Shared Parking;
- Unbundled parking;
- Car sharing;
- Green Travel Plans; and
- Motorcycle parking.

Table 6.6 outlines the indicative impact the above demand reduction measures would have on the specified parking minimums.

Table 6.6: Impact of Demand Reduction Measures on Parking Minimums

Demand Reduction Measure	Indicative Reduction
Shared Parking	Every 4 spaces shared with another use reduces required provision by 1 space
Unbundled Parking	For every 2 spaces unbundled, the minimum provision can be reduced by 1 space up to a maximum reduction of 20%.

Demand Reduction Measure	Indicative Reduction
Car Sharing	Each car share vehicle offsets 5 car spaces
Green Travel Planning	Provision of satisfactory green travel plan can reduce the minimum parking requirement up to a maximum of 15%
Priced Parking	Where applicants have chosen to manage demand by pricing, minimum rates can be reduced up to a maximum of 20%
Motorcycle Parking	A motorcycle space can replace 1 car space up to 15% of the parking requirement.
Bicycle Parking	Every 2 additional bicycle spaces (above requirements) offsets 1 car space, up to 15% of the minimum parking requirements

6.1.6 Target Modal Splits for Moreton Bay

The strategic model has identified targeted modal splits for journeys to work in Moreton Bay. This is based initially on the Connecting SEQ targets, and subsequently considering the modal split targets developed by other Councils in SEQ, and then applied for the Moreton Bay Networks and Corridors Strategy. Table 6.7 outlines the current and target modal split for journey to work trips in Moreton Bay.

Table 6.7: Current and Target Modal Split for Moreton Bay Region Journey to Work

Mode of Transport	Existing 2010 (%)	Target 2031 (%)
Car driver	89	76
Passenger transport	9	17.5
Walk and Cycle	2	6

The modal split targets outlined in Table 6.7 will require a 15% reduction in car trips if the targets are to be achieved. This will require a multi-pronged approach, but from a parking perspective it will require a relative reduction in parking significantly more than 15% to have an impact. This is because reducing the amount of free convenient parking on its own will not change the mode share. People will generally accept quite an inconvenient or even expensive parking option before changing modes. The recommendations from this report to use these current proposed rates for parking as a starting point with a view to further restrictions in the future will be essential if these modal targets are to be met.

7. Summary and Recommendations

Moreton Bay is not alone in grappling with parking issues associated with generous parking minimums, particularly in areas well served by public transport. Towns and cities throughout the world have identified the need to change the way parking is provided and managed and have responded by reviewing and updating their parking policies in order to provide the right amount of parking, in the right location and at the right price. A key feature of the parking requirements for developments in locations in close proximity to public transport in towns and cities reviewed throughout the world included:

- Widespread use of maximum parking rates;
- Specific rates or concessions within transit catchments; and
- The recognition of the effect demand reduction measures have on parking demand.

Based on these reviews, a parking policy has been developed for Moreton Bay that incorporates elements from the research and refines parking requirements to support the strategic goals of the region.

It must also be noted though that the removal of minimum parking requirements or significant reductions in parking minimums needs to be backed up with regulation designed to effectively manage demand for public on-street parking. On street parking management is required to manage issues such as spill-over and overflow parking in station catchment areas and centres.

Other areas for future consideration include:

- Gradually reducing maximums until maximums are in line with the TOD Guidelines; and
- Introduction of on-street parking restrictions in locations well served by public transport.

The introduction of any parking reform should ensure stakeholders are engaged in order to build the capacity for the professional and wider community to understand change. Parking can be an emotive and sensitive issue amongst the general community, who often believe that parking should be free and plentiful, generally unaware of the unintended consequences. This is where Council will have to work the hardest; to build capacity in the community, meaning the professional community, development community and general community, to understand and embrace the changes that need to occur in order to support the development of vibrant transit precincts. Council needs to engage with the wider community, including but not limited to business owners, land owners, city residents, city visitors, students etc. to begin a conversation about the steps Council is taking to nurture successful, vibrant, people based transit precincts and centres, and not predominantly car based places.

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