

Parking Management Strategy

2011

Table of contents

Executive Summary.....	4
Introduction	6
New Zealand Case Studies	7
Auckland	7
Rotorua.....	7
Hamilton	8
Context.....	9
Setting the Scene in Whangarei	9
Central Business District	9
Data Collection	15
Off-Street Parking Occupancy Rates	15
On-Street Parking Occupancy Rates.....	16
Table 6 - On-Street Parking Occupancy	17
Table 7 - On-Street Parking Occupancy (2).....	18
Revenue Collected.....	19
Operative Whangarei District Plan	22
Policy.....	22
Issue Identification	24
Parking Management Policy.....	26
Parking Management Principles	27
Best Practice in Parking Management.....	27
Parking Management Techniques	28
Parking Management.....	29
Time Limits.....	30
Priced Parking.....	30
Monitoring	32
Enforcement.....	33
Spill-over Parking Management.....	33
User Information/Signage	33
Shared Parking	33
Technology.....	34
Management of Off-Street Parking Buildings	34
'Park and Ride'	35
Recommendations.....	37
References/Future Reading.....	38

List of Attachments

- Attachment 1 – Council Owned Parking Areas
- Attachment 2 – Car Parks & Walking Distances
- Attachment 3 – Parking Throughout Whangarei City
- Attachment 4 – CBD Parking Zones
- Attachment 5 – Parking Fees & Maximum Parking Times
- Attachment 6 – Railway Road Parking Extension
- Attachment 7 – Parking Study Areas in CBD
- Attachment 8 – Parking Study Area in Town Basin
- Attachment 9 – CBD & Town Basin Parking Occupancy
- Attachment 10 – Policy & Planning Framework
- Attachment 11 – Minimum Parking Requirements

List of Figures

- Figure 1 – Central Business District
- Figure 2 – Central Business District (2)
- Figure 3 – Town Basin
- Figure 4 – On-Street Parking Occupancy
- Figure 5 – On-Street Parking Occupancy (2)
- Figure 6 – On-Street Parking Occupancy (3)
- Figure 7 – Revenue Collected
- Figure 8 – Total Revenue Collected
- Figure 9 – Area Exempt from Parking Requirements
- Figure 10 – Area Exempt from Parking Requirements (2)

List of Maps

- Map 1 – CBD Study Areas

List of Tables

- Table 1 – Number of Car Parks On & Off Street
- Table 2 – Main Means of Travel to Work
- Table 3 – Main Means of Travel to Work (2)
- Table 4 – City Centre Employment Figures
- Table 5 – Central Business District Parking Occupancy
- Table 6 – On-Street Parking Occupancy
- Table 7 – On-Street Parking Occupancy (2)
- Table 8 – On-Street Parking Occupancy (3)

Executive Summary

Whangarei District Council (Council) plays an important role in the provision of parking, ensuring that parking is available for commuters, tourists, customers and residents. The purpose of this Parking Management Strategy 2011 is to provide a framework from which parking is managed in Whangarei. It is the management of our existing parking that is important, not necessarily providing more parking, which only encourages more people to drive.

There are over 3,500 car parks in the CBD and CBD fringe areas. Data collected by council shows that some areas have a peak period exceeding the target occupancy rate of between 70% to 90%; however, overall average occupancy rates are relatively low, at 40%. This indicates that there is a peak period of demand, which needs to be managed. This is a common issue with parking that is experienced in many towns and cities. Whangarei has an adequate supply of parking, but Council simply needs to manage the parking more efficiently by implementing the proposed parking management techniques examined in the Strategy. The Strategy aims to ensure sufficient parking is available in the right place and at the right price.

The best practice parking management principles discussed in the Strategy are essential for Council to implement in order to solve the parking issues identified. Clear direction and principles will ensure the recommendations are focused in the right areas and are achievable. The Strategy investigates the use of parking management techniques, such as, time, price, monitoring and enforcement. Monitoring will ensure that the right price for parking is the lowest price that will allow the parking systems to operate efficiently; at the utilisation levels of 70% to 90%. Monitoring also includes reporting to Council on a regular basis, at least quarterly. This approach will make it possible to alter the parking time or cost structure where required. The strategy identifies removing minimum parking requirements as a vital component of the Strategy for Council to undertake, and examines the management of off street parking buildings.

The Strategy details the following recommendations:

- 1 Council to embark on a District Plan Change to remove minimum parking requirements. This is crucial to enabling further development and revitalisation of existing land.
- 2 Review parking signage throughout Whangarei District, in particular the CBD and Town Basin areas. Directional signs are important as they reduce the distance travelled by vehicles looking for a car park. Parking brochures could be created, showing the parking areas and associated costs and time allocations.
- 3 Council works towards a parking policy where charges reflect demand for spaces, and performance is measured by the resulting occupancy rates. This requires Council to change its parking focus, to concentrate on achieving occupancy rates between 70% and 90%. This is a key part of the overall strategy for parking management in Whangarei.
- 4 Council undertakes a trial, changing the time limits to 180 minutes for on-street parking, no time limits for off-street parking, and pricing accordingly to achieve 70% - 90% occupancy in the CBD. This should be a three or six month trial to ensure there is adequate time for behaviours to change.
- 5 Council introduces time limits of 180 minutes to provide flexibility for tourists in the Town Basin area. Pricing should also be introduced to achieve 70% to 90% occupancy when saturation occurs.
- 6 John Street Car park building is revitalised and upgraded, with the goal of improving the occupancy rates.
- 7 Continual consultation and education is undertaken with the business and wider community. Information will need to be shared when there are changes to the management of the parking, such as time and price
- 8 Council to consider in the future, the implementation of improved parking technology. This will increase the efficiency of parking management, enforcement, and user convenience. A cost benefit analysis will need to be undertaken to determine whether implementing new technology is feasible for Council.
- 9 As required, an in-depth analysis of parking in suburban areas is undertaken, to gather accurate data and to identify the parking behaviour in these areas. This will ensure the parking situation is adequately dealt with. Monitoring where appropriate will need to be continuous.
- 10 Multi level parking buildings to be kept under review. Securing land now in the northern and southern sectors of the CBD is important to provide for the future. This need may not arise at all (for example, due to a substantial increase in oil prices) or may not be needed for 10 to 20 years time.

11 Development of a Park & Ride service to be kept under review.

Introduction

This Parking Management Strategy 2011 ('the Strategy') for the Whangarei District is focusing on fostering sustainable communities. With the ongoing annual population increase expected to continue for the foreseeable future, there will be a greater impact placed on roading infrastructure. With more vehicles on the road throughout the district, management of our current parking infrastructure becomes crucial, along with more emphasis on utilising alternative transport methods in Whangarei. Thus, it is particularly important for Council to have a comprehensive and coherent parking strategy to direct the management of parking in Whangarei.

Parking is the single biggest land use in most cities, taking up large areas of extremely valuable urban land. Using land for parking reduces the land available for other potentially more valuable uses. More parking is not necessarily better. Council has an important role to play in ensuring that parking is available for the public, tourists, residents and the workers of Whangarei. The traditional methods that councils use include developing minimum parking requirements, time limits, enforcement measures, and pricing structures to regulate public parking.

Throughout New Zealand there is a new emphasis on parking management, which includes a shift in planning away from 'predict and provide' (through parking requirements in the District Plan) to better manage existing parking resources and allow the market to determine appropriate levels of supply. A few cities throughout New Zealand have already begun the process of moving to this parking management process and corresponding plan changes to implement the changes into their District Plan. These cities include Auckland, Hamilton, and Rotorua, which are detailed later in the report.

This Strategy provides the reader with information about the current situation in Whangarei, including the issues Council is dealing with and the data collected. Best practice parking management principles are presented and parking management techniques are investigated, including removing minimum parking requirements, and price and time linked to parking demand. It is recommended that Whangarei District Council implement this new way of managing parking to create a well-managed supply of parking. This is an essential component in having a vibrant town centre.

The Parking Management Strategy is to be considered a 'live' document; therefore, changes can be made when and where required.

New Zealand Case Studies

This section of the report looks at how other Councils around New Zealand are approaching parking management. Over the years there has been an increased awareness of the new management philosophy for parking, which has already been undertaken in Auckland, Hamilton and Rotorua. Also, Nelson is investigating a range of options around pricing and the removal of minimum parking requirements; and Palmerston North is currently investigating using parking maximums in the city centre instead of using parking minimum rules.

Auckland

In 2010, Auckland City Council trialled a new parking policy for the Viaduct area. The reasons for the trial were to manage the high demand for parking, and address business owner concerns about a lack of convenient parking. The changes saw paid parking increased to include the hours from 6pm to 10pm; the removal of time limits on the paid parking; and introduced graduated tariffs between 8am and 6pm. There was significant opposition to the proposal from both the businesses in the area and the residents. Business owners believed that extending the paid parking hours would discourage people from visiting the area, while residents were concerned about the removal of un-priced on-street parking in the evenings.

The Viaduct area often experienced problems with the availability of car parking spaces. With the implementation of the trial, parking utilisation was sitting around 90%, a 26% higher turnover than before. This ultimately supports the local businesses by providing more convenient car parking for their customers.

Auckland City Council made the changes permanent in April 2010.

This case highlights the value of Council undertaking trials, removing the time limits and making useful changes based on the trial results.

Rotorua

In August 2010, Rotorua District Council received the report entitled 'Parking Policy Proposal – Summary Report'. This report looks into making significant changes to their current parking management structure. The essential recommendations from the report are:

- Exercise discretion for development with parking shortfalls
- Remove parking requirements
- Remove minimum parking requirements outside the CBD
- Review standards for parking and turning areas
- Control the quality of off-street parking
- Changes to on-street parking management
- Investigation into how best to provide public off-street parking.

The anticipated results from following this parking management system is a CBD that has more residential units, tourist accommodation, other mixed use developments and civic improvements. All contributing to improving the economic viability of the CBD.

Rotorua District Council has recently published its Draft District Plan, and is now in the process of accepting public submissions. Within this Draft District Plan are proposed changes to the city centre provisions which removes onsite parking provisions in the City Centre and provides reasoning behind this as,

'The City Centre is the only area in the district where on-site parking provisions do not apply. This is part of a broader parking policy aimed at encouraging and stimulating the way people use public parking around key retail areas, and also to remove constraints to the development of residential or tourist accommodation in the City Centre.' (p5.1, Rotorua District Council, 2011)

The relative policies read,

'Urban Design Principles

Car parking

Policy 5.2.2.9

Limit car parking in identified pedestrian oriented streets and avoid poorly located or inadequately constructed access points on roads.

Policy 5.2.2.10

Avoid development that provides car parking at the front of the site where this impedes pedestrian flow and the cohesion of the pedestrian oriented streets. (p5.7, Rotorua District Council, 2011)

Another important policy proposed in the Draft District Plan covers design criteria for developments with more than 10 parking spaces to follow. This includes active frontages, architectural qualities, vehicle access and adaptability.

Hamilton

Hamilton City Council adopted their new Parking Management Action Plan in March 2010. The long term measures include:

- Removing minimum parking requirements
- Developing a performance based parking management policy
- Establishing a transport management association
- Investigating supplementary policies such as, financial mechanisms, commercial parking levies and targeted development contributions (Hamilton City Council, 2010).

Council carried out trials to gather relevant data to support the changes proposed in the PMAP. The trials included:

- Continuing the current \$2 per hour fee for on-street parking
- Ending the free Saturday parking trial combined with time restriction enforcement to ensure there is a good turnover of car parking spaces for visitors
- Extending the metered P60 parking restriction to P180 to allow greater flexibility for those who wish to use and pay for premium spaces
- Extending the opening hours of the Garden Place Car Park to establish a standard of 10pm closing time seven days a week
- Adjusting parking rates at Council controlled car parks to better influence the parking behaviour most appropriate for the facility; commuter parking versus short stay parking
- Support for future investment in new and better meter technology. (Hamilton City Council, 2011).

Council was able to conclude that there is not an undersupply of parking in the CBD, rather, it is the management of the parking supply that needs to be revised. Also, the free parking available in the inner-city was continually occupied by staff of the CBD businesses, therefore, unusable for visitors to the CBD.

Hamilton City Council is also investing funds into signage improvement to better enable access to parking buildings and make it easier for drivers to find parking spaces.

There are some similarities between the Hamilton situation and Whangarei. Detailed in council Report to City Planning and Development Committee 15 February 2011, was the fact that the various current on-street parking management controls in place in Hamilton City centre, are a result of decisions being made in response to receiving requests, complaints and petitions from businesses and community groups; this resulting in ad hoc decisions being made.

Their focus is to boost the vitality of the central city; therefore, developing user-friendly parking arrangements was seen as essential.

Both Rotorua and Hamilton are in the process of removing minimum parking requirements in their city centres and trialling new parking management tools. Neither of these cities has completed the reform process at this time.

Context

Setting the Scene in Whangarei

The Whangarei District covers the south eastern part of the Northland region. It extends from Langs Beach at the southern end of Bream Bay, to Bland Bay in the north, a distance of just under 100km. The Kaipara District is on its western boundary and the Far North District lies to the north. At its greatest width, the distance east to west is about 60km.

The City of Whangarei is 160km from Auckland. It is the largest urban centre in the Northland region and is the principal commercial centre. It is the hub for most of the transportation and storage services into and out of Northland.

In 2009 Whangarei District had a reported population of 79,000. This was an increase from 68,000 in 2001. The population in Whangarei will continue to grow for the next 30 to 50 years. The population is projected to be 110,000 (the size of Tauranga) in 2041 and 130,000 (the size of Hamilton) in 2061 (Whangarei District Council, 2010).

As well as the CBD, Whangarei is home to a number of smaller suburban shopping centres, such as, Onerahi, Kamo, Tikipunga and Otaika; and shopping centres in settlements throughout the district, such as, Waipu and Hikurangi. There is a big box retail shopping centre at Okara, housing businesses including Briscoes, Rebel Sport and the Warehouse.

Central Business District

Whangarei's CBD is zoned Business 1 under the Operative District Plan. Currently there are 1,891 business zoned lots, of which 552 are occupied by 1,652 businesses. Under the District Plan present zoning, a further 2,559 businesses can be accommodated (Whangarei District Council, 2010). This is based on the buildings being developed to the maximum height levels allowed in the District Plan.

The 2006 Parking Report detailed that there are 1,270 parking spaces in the central core area, and 2,470 parking spaces on the fringe. The study areas are shown in Map 1 produced in the 2006 Parking Report. This data is now five years old, however, since 2006 Council has not made any substantial changes to the parking supply.

Map 1 - CBD Study Areas

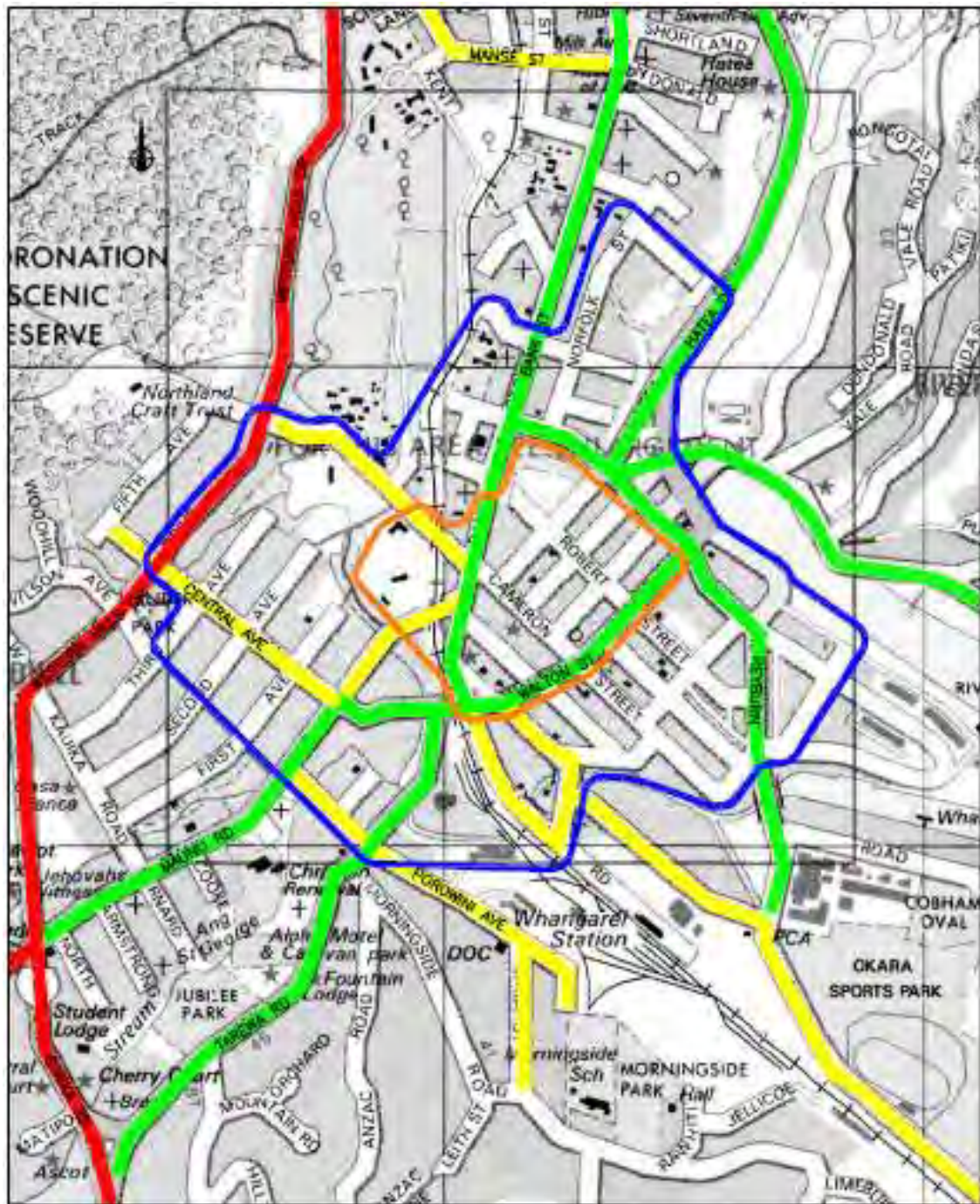


Table 1 shows the parking spaces in each parking location, on-street and off-street.

Table 1 - Number of Car Parks On & Off Street

CBD Off-Street Car Parks

Laurie Hall	197
Vine Street	96
James Street	37
Forum North	185
Town Hall	37
John Street Building	263
Vinery Lane	103
Water Street	116
Total	1034

Town Basin Off-Street Car Parks

Hatea Drive	125
Bridgeway	213
Quay Street	229
Town Basin	50
Clock Museum	142
Total	759

On-Street Car Parks

Bank Street	30
Cameron Street	20
James Street	80
John Street	59
Rathbone Street	71
Robert Street	24
Walton Street	18
Total	302

The above data was collected when investigating the occupancy rates of the parking areas around the CBD & Town Basin in 2011. The data shows that there are 1336 car parking spaces servicing the CBD, on-street and off-street. The Town Basin area currently supplies 759 free parking spaces, used mainly by commuters to the CBD.

Council-owned car parking areas are scattered throughout the CBD area (Attachment 1). There are a number of car parking areas supplying parking for visitors, workers, shoppers and residents, provided by Council and businesses (on-site). The car parks servicing the CBD are all within five minute walking distance from the CBD (Attachment 2). Council owned car parks and on-site parking use up a lot of valuable land that could potentially be used for businesses (Attachment 3).

Parking in Whangarei is currently managed using three main tools:

- Minimum parking requirements in the District Plan
- Time limits
- Priced parking of on and off-street public parking facilities.

Parking is enforced through time restricted and charged (priced) parking in Whangarei, for example, unrestricted parking, P5min, 2 hour pay and display, and P120 (Attachment 4). This could lead to confusion for users, as they may not know which areas are time restricted, the different costs associated with parking areas, and so forth. Also, moving your car between car parking areas requires a new ticket, which could create difficulties for users. Attachment 5 shows the fee structure currently charged for parking throughout Whangarei. Prices range from 40 cents to \$2 per hour. These current on-street and off-street parking management controls in place throughout Whangarei have been developed over the years through petitions, complaints and Council changes in the approach to providing parking. For example, parking on Saturday is now charged for in the Laurie Hall car parking areas, to discourage workers taking advantage of the free car parks, and provide more conveniently located spaces for the customers (high value users).

The Sustainable Futures 30/50 Growth Strategy adopted by Council in September 2010, includes a socio-economic profile of the Whangarei District which details useful information for this report. For instance, seventy percent of people in the Whangarei District travel to work by car. This is an increase of 18% from 2006. Only 0.5% of the Whangarei District travelled to work by public transport (Table Two). This very low percentage (stated in the report) reflects the rural nature of the district and the lack of a public transport system in many areas.

Table 2 - Main Means of Travel to Work

	Whangarei District	Northland Region	New Zealand
Drive ¹	70%	71%	71%
Passenger	6%	6%	5%
Walked/Cycled ²	6%	7%	9%
Public Transport ³	0.5%	0.4%	5%
Work at home	11%	16%	10%
Other ⁴	6%	8%	7%

Source: Whangarei District Council, 2010.

When this data is broken down (Table 3), it can be seen that 49% of journeys to work are undertaken by driving a private car and 12% are made by company vehicles, with only 5% arriving at work as passengers. What this clearly highlights is that most commuters are driving to work alone.

Table 3 - Main Means of Travel to Work (2)

Travel to Work	Whangarei District	Northland Region	New Zealand
Worked at Home	10%	13%	8%
Did Not Go To Work Today	11%	11%	10%
Drove a Private Car, Truck or Van	49%	46%	48%
Drove a Company Car, Truck or Van	12%	11%	11%
Passenger in a Car, Truck, Van or Company Bus	5%	5%	5%
Public Bus	0.4%	0.3%	3%
Train	0.0%	0.0%	1.0%
Motor Cycle or Power Cycle	0.9%	1.2%	1.0%
Bicycle	1.1%	0.8%	2%
Walked or Jogged	4%	5%	5%
Other	0.4%	0.5%	0.7%
Not Elsewhere Included	5%	6%	5%

Source: Statistics New Zealand, 2006 Census

Access to motor vehicles and household incomes are compared in the Growth Strategy. As income increases so does the proportion of people who have access to two or more motor vehicles. The residents of Whangarei (like many other towns throughout New Zealand) are particularly high users of private vehicles. As detailed in the Growth Strategy, this could be due to the high percentage of the city's population living in rural areas, and what the public considers an unviable public transport system (due to not servicing rural areas). There is also no incentive for getting to work by other means, such as car-pooling, walking or cycling. The current journey to work data can change; the rural nature of the district does not give reason for

¹ Includes Drove a Private Car, Truck or Van; Drove a Company Car, Truck or Van; Motor Cycle or Power Cycle

² Includes Bicycle; Walked or Jogged

³ Includes Public Bus; Train

⁴ Includes Other; Not Elsewhere Included

commuters to be driving cars alone to work. To encourage the use of public transport or alternative modes of transport, a change in public attitude is required; along with an increase in the level of service and subsidies so that alternative modes are used and accepted.

Figures for the city centre employment were developed for the September 2008 Growth Model, and is shown below. This table shows the employment figures in the city centre are expected to increase for the next 50 years, which indicates that there will also be an increase in the number of commuters to the CBD, reinforcing the importance of Whangarei having a well managed parking strategy in place.

Table 4 - City Centre Employment Figures

2001	6,855
2006	7,812
2011	8,141
2021	8,484
2031	8,841
2041	9,606
2051	10,467
2061	11,405

Source: Whangarei District Council, 2010.

The CBD is home to a number of stores, eateries, gyms, entertainment, boutique shopping, government agencies, private firms, banks and a large supermarket just on the fringe. The CBD is also expected to see an increase in the number of people living there, with a proposed mixed use plan change allowing for such development.

The CBD also competes against the Okara Shopping Centre ('big box development') which provides large amounts of free parking for customers. Businesses and developments choose to offer parking as a competitive edge. Developments of this kind require a large amount of land area to provide for free parking. It does avoid the possible effect of vehicles spilling over into the local roading network, but creates sprawl and vehicle traffic. The cost of this free parking is also borne by the consumers, through the costs of the goods, and this is not always the user (of the free parking).

John Street Car Park

Council owns one car parking building, John Street car park, accommodating 263 car parks. This includes 50 parking spaces on the ground floor (20 of which are reserved and 2 disability parks), 101 parking spaces on level one (12 of which are reserved and 6 disability parks), and 112 parking spaces on level two (13 of which are reserved and three disability parks). The parks are charged out at \$1 per hour. The reserved parks gather \$184.00 per month in revenue; and a monthly concession card can be obtained for \$127.50 per month. \$10,000 in revenue is collected from John Street Car Park each month. Occupancy of John Street Car Park is on average around 25%, with peak occupancy reaching 40%. Feedback from members of the public is that John Street Car Park is not a well laid out, user friendly car park.

James Street

The sale of the James Street airspace represents an opportunity for Council to work in tandem with a private developer with a view to undertaking the development of this and other public car parks within the city. This proposal is currently under consideration and if progressed, could result in the creation of a further 300 public car park spaces. Council needs to investigate this opportunity in more detail, as this should be in line with the development of the CBD revitalisation project which is currently being implemented by Council. This includes a pedestrian mall along James Street. If there is a large development at the end of James Street, the result will be big shadows cast over the street which will ultimately impact the enjoyment of the pedestrian mall to the public. Thus, this development has to be carefully investigated.

Railway Road Car Park

Railway Road off-street car park (Attachment 6) has recently been developed by WDC to provide more parking for the Rugby World Cup supporters, and then will be utilised by commuters. There are 215 car parks provided in this car park. WDC is still to decide on the cost to charge commuters for using the car park; it is recommended to either continue the monthly cost of \$20.50, or to charge \$1 or \$2 a day. A number of concerns were presented by public comment which included, the distance users will have to walk to town, lack of a dry corridor, security concerns for their cars, and pedestrian safety in regards to crossing Walton Street.

Town Basin

The Town Basin is on the eastern fringe of the CBD, located on the south side of the Hatea River. There are 44 properties in the Town Basin zoned land, which extend from the eastern side (known as the NRC building) through to Hihiaua Peninsula. This includes one medical centre, three professional offices, one factory, 11 flats/apartments/dwellings and 27 other buildings. Businesses include a number of restaurants, cafes and boutique shops. There is also a well designed children's playground, which is utilised all days of the week. The Town Basin has a unique environment that Whangarei District Council is currently encapsulating in its revitalisation project.

Whangarei District Council is working on initiatives to revitalise the Town Basin, core CBD, and outer CBD areas of the city centre. The vision for the Town Basin is to create a key recreational, tourist, and artistic precinct, while the core CBD and outer CBD areas will be the key civic and intensive residential precincts. Elements of these projects include the development of a hotel, iconic museum, art gallery, events spaces, sculpture park, and emerald necklace (open space). Council is also working on the Second Harbour Crossing and the Ring of Walkways projects.

Part of the revitalisation project is a review of the parking, which includes parking proposals for this area. It is proposed that the existing commuters' car parking areas created by the re-alignment of Dent Street and Hatea Drive be utilised as possible sites for a range of related tourist facilities. This is expected to remove 442 car parks from this area in 2013/14.

Parking will still be provided at the eastern side of the Town Basin site, by the children's play ground. Concern has been raised as to whether there are enough car parks there to provide for the visitor increase. As part of the revitalisation project, the Town Basin will be provided with a further 72 car parks. There needs to be some form of turnover in parking to ensure that car parks are always available for tourists and visitors to the Town Basin. Implementing the parking management techniques discussed later, will manage the car parks through 'charging the right price' or the use of time limits. It is expected that Council would provide parking free at first, with time limits and enforcement focused in this area. Once occupancy exceeds 90% it would be expected that charging occurs in this area. This is in line with the techniques for the management of parking.

There are a total of 759 car parks provided in the Town Basin that service the CBD and Town Basin. These areas were occupied 94% to 100% of the time when data was collected. Parking directly outside the Town Basin is free with time limits. The parking at the Town Basin will provide for the visitors to the Town Basin and move commuters out of this area. It is essential to provide for visitors to the city centre, as these are the people that we want to attract to Whangarei. They will be the ones supporting the economic viability of the CBD. Council has been informed from the enforcement officers that workers are taking the opportunity to park in the timed free car parks and move their cars before the allocated time is up. Increasing the enforcement in the area or introducing pricing are both options for Council to consider.

Suburban Areas

Issues have been raised in the suburban areas, such as in Kamo. Complaints have been received in terms of workers and students parking in the free parking spaces, provided in the centre of the commercial area. There is also feedback that people use it for park and ride. The Kamo Business Association has requested that Council implement 3 hour time restrictions for the main car park in Kamo. The proposed change to Kamo's parking has gone through Council's process, making this change operative. Concerns have also been expressed in regards to Onerahi not having a sufficient amount of parking.

An in-depth analysis of the parking will be required to gather accurate data and to identify the parking behaviour in these areas. It is recommended that these areas use the techniques of parking management discussed further in the report. This will ensure the parking situation is adequately dealt with. Monitoring of these areas will need to be continuous. Investigation should also include, changing the time limits, pricing, and removing the minimum parking requirements in these growth areas.

Data Collection

Off-Street Parking Occupancy Rates

Data collection is essential for Council to ensure that the decisions are driven by facts. The role of data collection is essential in the monitoring and evaluation of parking management. Council is aiming parking occupancy at 70% to 90% to ensure that parking is always available for potential users. There needs to be baseline information to make informative decisions. From February 21st for the working week, occupancy rates were calculated for the car parks within the CBD (Attachment 7) and Town Basin (Attachment 8) areas, between the peak times of 11.30am to 1pm. It is noted that further data needs to be collected over a whole day, to observe vehicle shifting patterns, length of stay, trip generation knowledge (understanding the key locations and types of drivers in each area), and to better understand parking demand.

The graphs below (Figures 1 - 3) show the peak occupancy rates (between 11:30am to 1pm) for the week in each off- street car parking area. Attached to this report are tables showing the data collected to calculate the occupancy rates in the peak period (Attachment 9).

Figure 1 - Central Business District

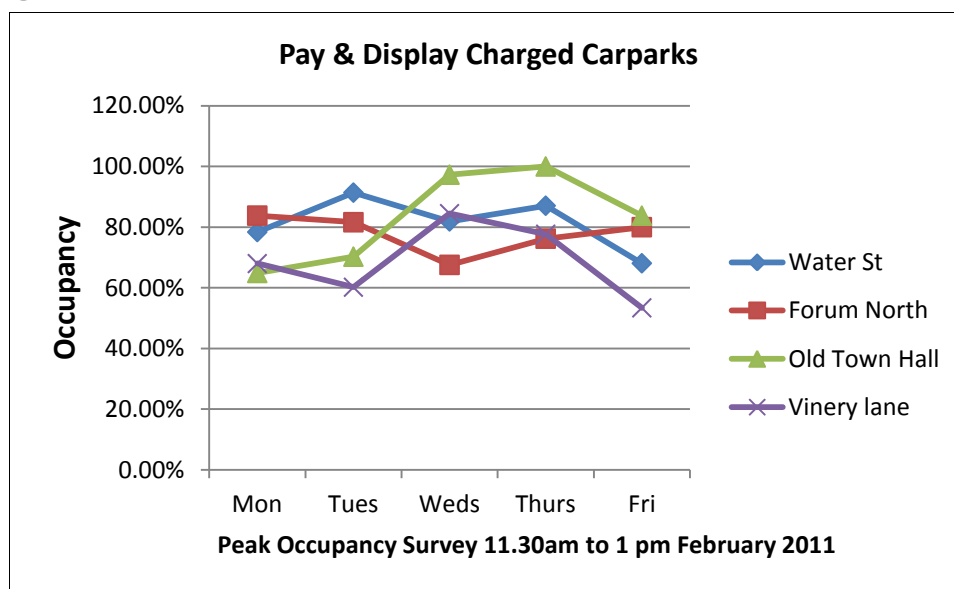
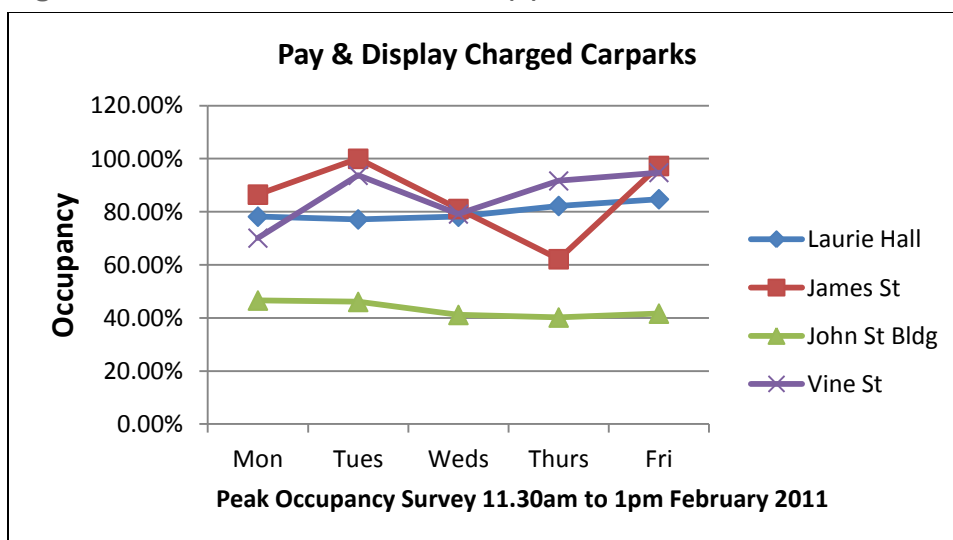


Figure 2 - Central Business District (2)



In the CBD area, the occupancy rates differs significantly. For example Vine Street had an occupancy rate of 70.10% on Monday, and 93.75% on Tuesday. Focusing on Tuesday as an example (Table Five), there are three parking areas with over 90% occupancy (Water Street, James Street, and Vine Street Car Parks),

while John Street Car Park Building has only 46.08% occupancy, and the rest of the car parks range between 60.19% to 81.62%. This indicates that some car parks through the CBD are saturated, some in the optimum range and one that is under-utilised.

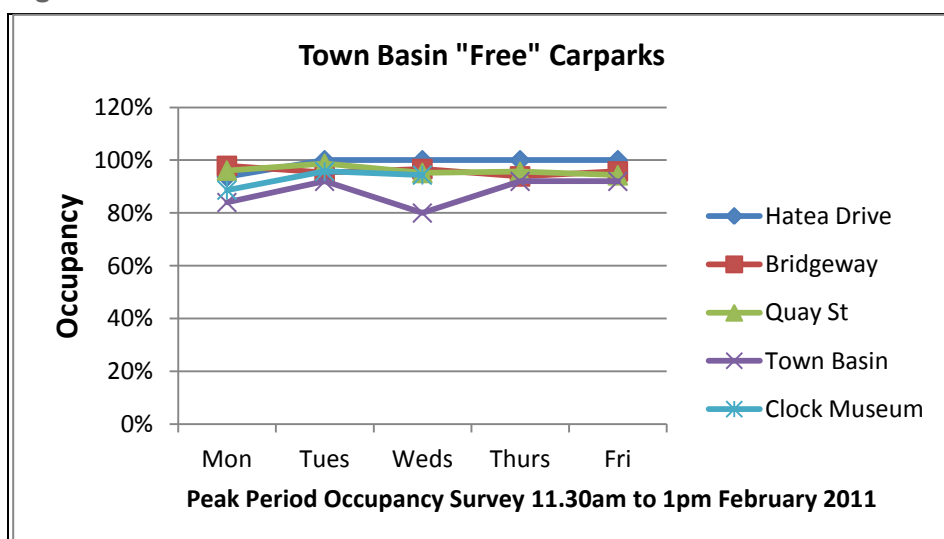
Table 5 - Central Business District Parking Occupancy

Tuesday 22 February

Time Started: 11.30am

Car Park	Time	Total	Vacant	Occupancy Rate
Water St	11.29am	116	10	91.38%
Forum North	11.30am	185	34	81.62%
Old Town Hall	11.41am	37	11	70.27%
Vinery lane	11.45am	103	41	60.19%
Laurie Hall	11.50am	197	45	77.16%
James St	11.57am	37	0	100.00%
John St Bldg	11.59am	204	110	46.08%
Vine St	12.06pm	96	6	93.75%

Figure 3 - Town Basin



The Town Basin parking area is predominately used by commuters who work in the CBD or Town Basin. Over the week in which data was collected, Hatea Drive car parking area was only once not 100% occupied⁵, which is considered appropriate for parking which was developed to support the commuters to the CBD. None of the car parking areas went below 80% occupancy throughout the week, with Bridgeway and Quay Street parking both above 90% the whole week. The Town Basin and Clock Museum parking areas are the most important ones in regards to servicing the economy in the Town Basin. To have these parking areas reaching near 100% occupancy indicates that the management of parking in these areas needs to be reviewed. In order to support the Town Basin economy car parks need to be available for the visitors and customers (high value users).

On-Street Parking Occupancy Rates

From 4 July 2011 for the working week, occupancy rates were calculated for on-street parking within the CBD, three times, 9am, 12pm and 3pm. A total of eight streets were looked at for this study, this includes Bank, Cameron, James, John, Rathbone, Robert, Vine and Walton Streets.

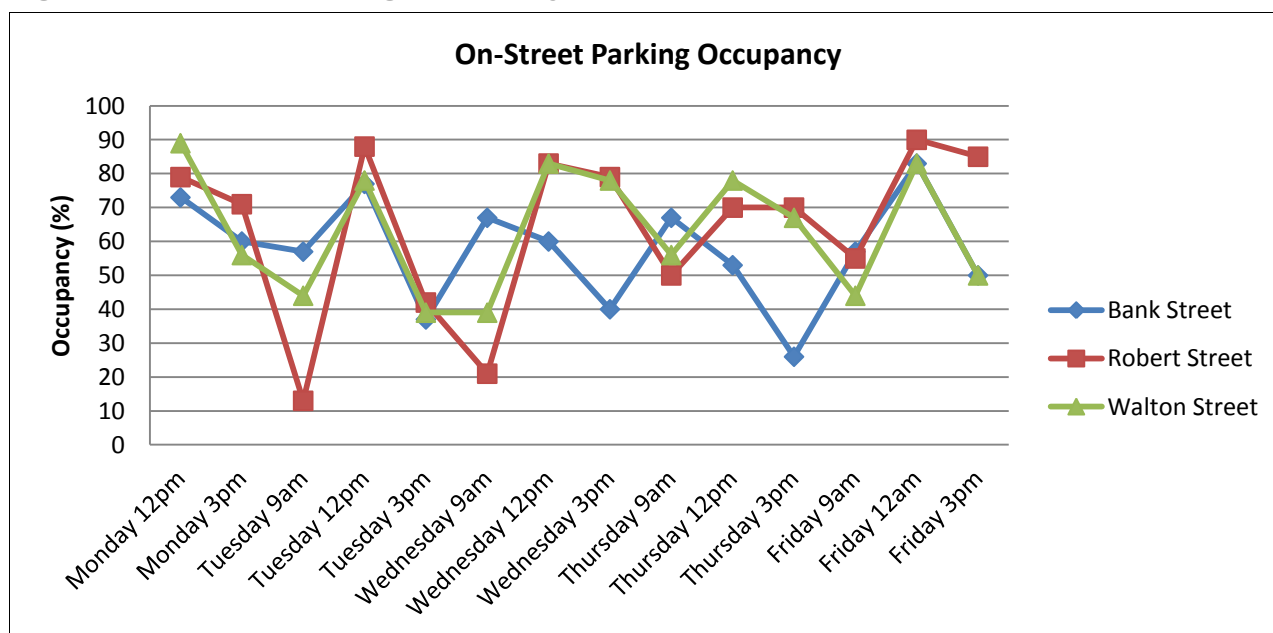
⁵ This parking area is regularly occupied over 100% as people are often parking on the grass.

Bank, Robert and Walton Streets (Table 6 & Figure 4) are three streets that have their peak period reaching up to 90% but not exceeding this level. Also noticeable is the off-peak period, which is 40% and lower.

Table 6 - On-Street Parking Occupancy

Bank Street		Robert Street		Walton Street	
Day & Time	Occupancy (%)	Day & Time	Occupancy (%)	Day & Time	Occupancy (%)
Monday 12.45pm	73	Monday 12.06pm	79	Monday 12pm	89
Monday 3.53pm	60	Monday 3.15pm	71	Monday 3.10pm	56
Tuesday 9.28am	57	Tuesday 8.47am	13	Tuesday 8.44am	44
Tuesday 12.40pm	77	Tuesday 12.03pm	88	Tuesday 12.01pm	78
Tuesday 3.35pm	37	Tuesday 3.02pm	42	Tuesday 3pm	39
Wednesday 9.28am	67	Wednesday 8.58am	21	Wednesday 8.49am	39
Wednesday 12.37pm	60	Wednesday 12.03pm	83	Wednesday 12pm	83
Wednesday 3.41pm	40	Wednesday 3.08pm	79	Wednesday 3.05pm	78
Thursday 9.53am	67	Thursday 9.18am	50	Thursday 9.03am	56
Thursday 12.33pm	53	Thursday 12.00pm	70	Thursday 11.56am	78
Thursday 3.37pm	26	Thursday 3.03pm	70	Thursday 3pm	67
Friday 9.32am	57	Friday 9am	55	Friday 8.57am	44
Friday 12.32pm	83	Friday 11.59am	90	Friday 11.56am	83
Friday 3.40pm	50	Friday 3.12pm	85	Friday 3.08pm	50

Figure 4 - On-Street Parking Occupancy

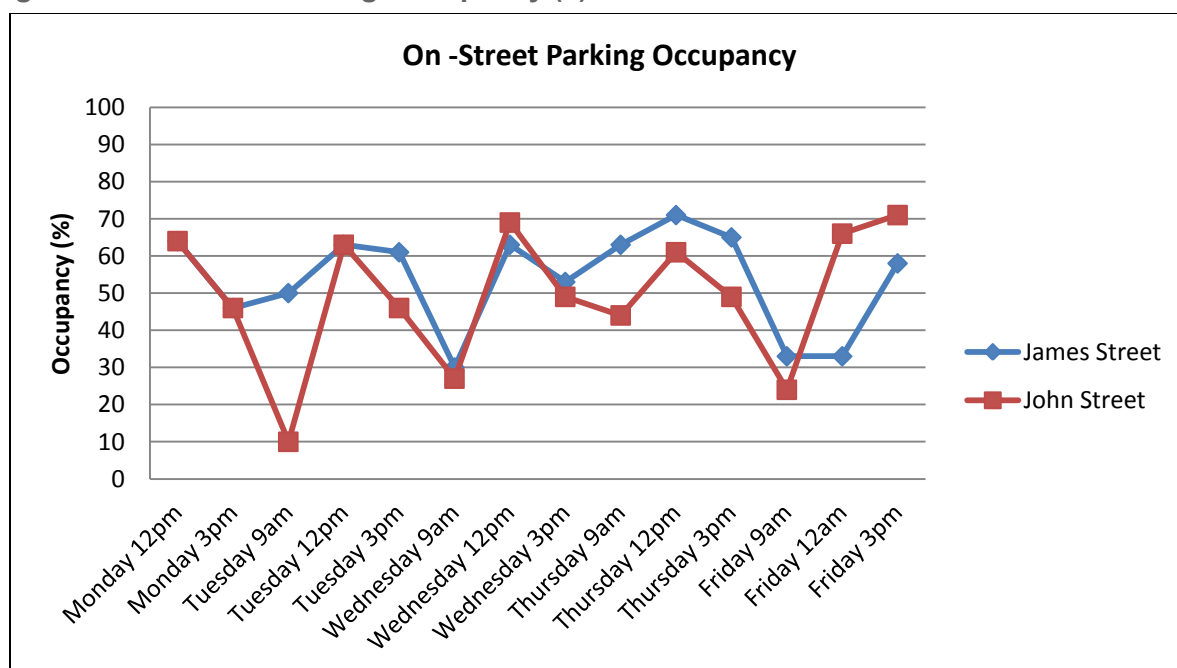


For the on-street parking along John and James Streets (Table 7 & Figure 5), unfortunately data was collected from the whole street, not from the high use parts of John and James Street which is from Robert Street to Cameron Street. This has therefore given data that shows a lower occupancy than what is actually occurring. A common occurrence is for drivers not to continue straight on John or James Street while looking for a park, instead drivers will turn left on to Robert Street and continue to circle the CBD. The data collected shows that both John and James Streets do not exceed 70% occupancy, however, these streets are regularly full and/or experiencing high turnover (due to time limits of 1 hour).

Table 7 - On-Street Parking Occupancy (2)

James Street		John Street	
Day & Time	Occupancy (%)	Day & Time	Occupancy (%)
Monday 12.22pm	64	Monday 12.11pm	64
Monday 3.30pm	46	Monday 3.20pm	46
Tuesday 9.03am	50	Tuesday 8.52am	10
Tuesday 12.18pm	63	Tuesday 12.08pm	63
Tuesday 3.20pm	61	Tuesday 3.05pm	46
Wednesday 9.11am	30	Wednesday 9.02am	27
Wednesday 12.17pm	63	Wednesday 12.07pm	69
Wednesday 3.21pm	53	Wednesday 3.11pm	49
Thursday 9.33am	63	Thursday 9.23am	44
Thursday 12.14pm	71	Thursday 12.05pm	61
Thursday 3.17pm	65	Thursday 3.08pm	49
Friday 9.13am	33	Friday 9.06am	24
Friday 12.12pm	33	Friday 12.03pm	66
Friday 3.25pm	58	Friday 3.16pm	71

Figure 5 - On-Street Parking Occupancy (2)

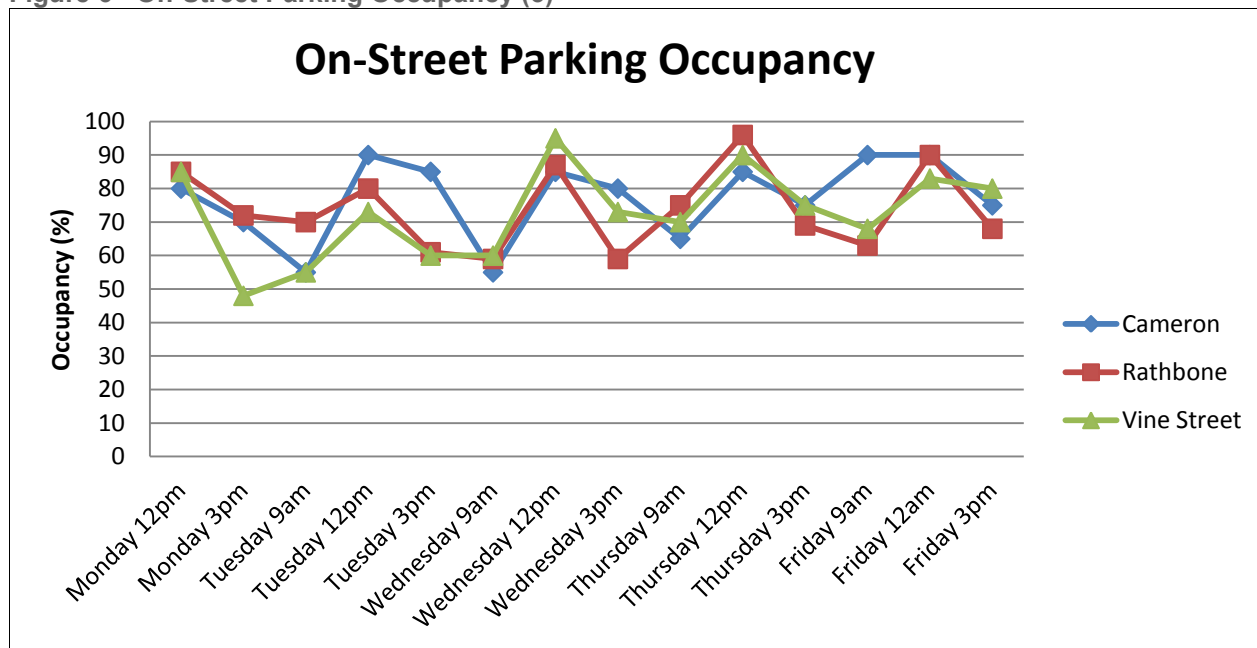


Cameron, Rathbone and Vine Streets (Table 8 & Figure 6) are all similar, in the respect that they exceed 90% occupancy, and not below 40% occupancy. Cameron Street's lowest percentage is 55%, with the highest at 90%. Rathbone Street's lowest percentage is 59% occupancy with the highest reaching 96%; with most of the occupancy counts between 70% and 90%. Vine Street also has relatively high occupancy at the three times the survey was undertaken over the course of the week, with one occupancy count reaching 95%. All three streets highlight the importance of undertaking a full days survey (every hour) when percentages are reaching a high level and exceeding 90% occupancy, as an assumption of occupancy going above 90% regularly can be made.

Table 8 - On-Street Parking Occupancy (3)

Cameron Street		Rathbone Street		Vine Street	
Day & Time	Occupancy (%)	Day & Time	Occupancy (%)	Day & Time	Occupancy (%)
Monday 12.17pm	80	Monday 12.34pm	85	Monday 12.55pm	85
Monday 3.28pm	70	Monday 3.40pm	72	Monday 4.00pm	48
Tuesday 8.58am	55	Tuesday 9.17am	70	Tuesday 9.40am	55
Tuesday 12.15pm	90	Tuesday 12.30pm	80	Tuesday 12.49pm	73
Tuesday 3.14pm	85	Tuesday 3.26pm	61	Tuesday 3.46pm	60
Wednesday 9.08am	55	Wednesday 9.18am	59	Wednesday 9.35am	60
Wednesday 12.15pm	85	Wednesday 12.27pm	87	Wednesday 12.48pm	95
Wednesday 3.18pm	80	Wednesday 3.29pm	59	Wednesday 3.48pm	73
Thursday 9.30am	65	Thursday 9.43am	75	Thursday 10.02am	70
Thursday 12.12pm	85	Thursday 12.23pm	96	Thursday 12.43pm	90
Thursday 3.15pm	75	Thursday 3.28pm	69	Thursday 3.44pm	75
Friday 9.10am	90	Friday 9.23am	63	Friday 9.42am	68
Friday 12.10pm	90	Friday 12.21pm	90	Friday 12.40pm	83
Friday 3.23pm	75	Friday 3.32pm	68	Friday 3.49pm	80

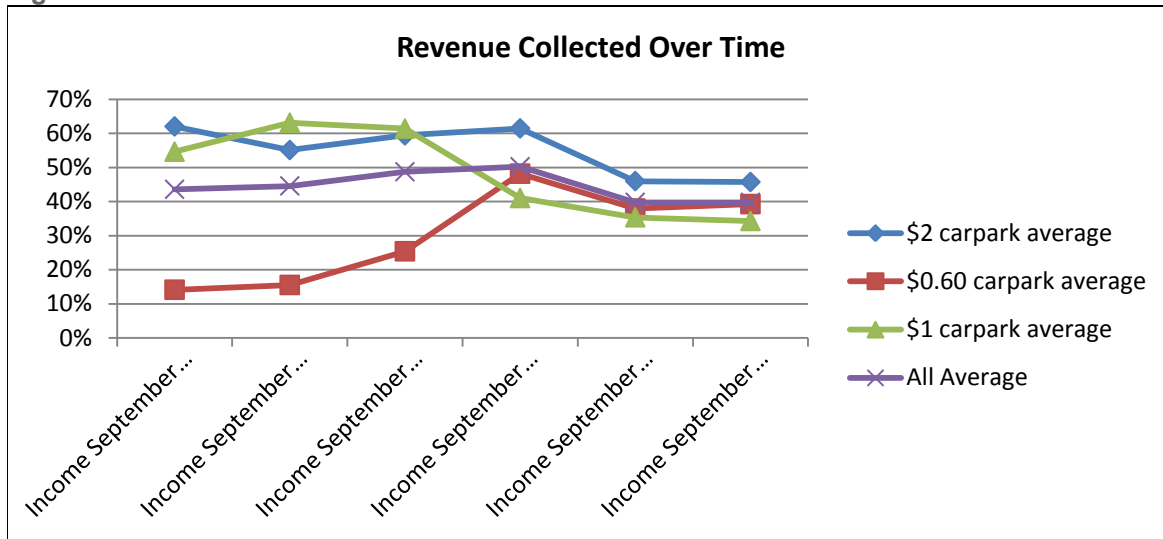
Figure 6 - On-Street Parking Occupancy (3)



Revenue Collected

The Roding Department within the Whangarei District Council also provided data on the revenue collected from each parking meter during the month of September from 2004 through to 2009. The graph (Figure 7) below can be used to show the average occupancy rates since 2004.

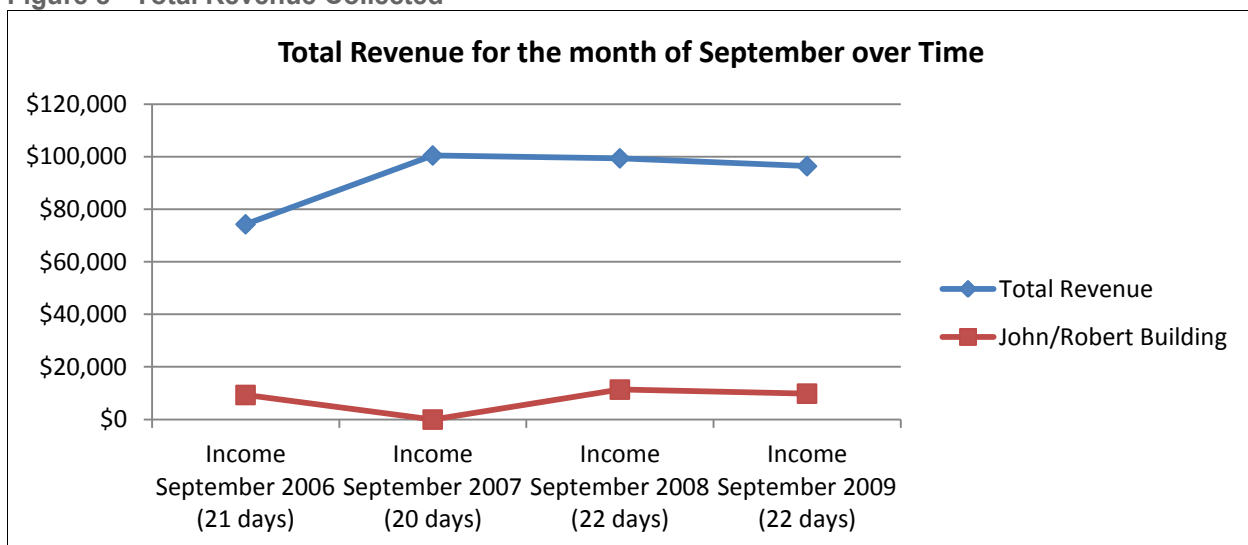
Figure 7 - Revenue Collected



The proportion of maximum revenue here is defined as the revenue taken from each metered parking space or car park facility versus the total revenue available from that car park over the chargeable hours.

The average proportion of maximum revenue for car parks in 2009 is 40% occupancy, down from 50% in 2007 (Figure Five). Total income to the Parking Account for 2009/10 was down approximately 18% from the predicted budget.

Figure 8 - Total Revenue Collected



Taking the proportion of maximum revenue into consideration with the peak time data collected, we can see an overview of the parking in the city. Some car parking areas experience over 90% occupancy at peak times, while others range between the satisfactory levels of 70% to 90%. Overall the revenue collected is not high, only 40%.

Occupancy should be based on the actual number of cars parked in spaces at any given time of the day, not derived from revenue. This is especially important if Council wishes to establish a base-line occupancy for future pricing variations.

The financial cost associated with parking is important to Council. Council received an income of around 1.1 million last year for on-street and off-street parking revenue. Collecting revenue for parking is not the intent of Council, rather it is to manage the parking behaviour of the users. However, there could be financial implications to Council from decisions made with the policy for parking if it is implemented incorrectly. There has been a decrease in revenue collected since the last financial year. The income collected is from fees, while the fines revenue is derived from a separate part of Council. Council uses the money from fines to pay

for enforcement costs, although this does not actually cover the full costs of enforcement. The parking revenue is then used to make up this short fall.

As discussed throughout this report, Council should be encouraged to manage its parking demand through pricing. There is the opportunity for Council to use this revenue on beautifying and improving the parking environments. This is discussed in further detail under the parking management techniques.

Operative Whangarei District Plan

Policy

The Whangarei District Plan became operative on 3 May 2007. Under Section 22.4.7 Parking is detailed as...

22.4.7 Parking and Manoeuvring

To provide adequate parking, turning and manoeuvring space on every site, other than sites in the areas shown in Figures 6A.1 and 6A.2 to Appendix 6, to accommodate traffic generated by the activity, and to maintain the safe and efficient operation of the transport network.

To facilitate the provision spaces (owned by Council and/or private companies) in the areas shown in Figures 6A.1 and 6A.2 to Appendix 6, both on and off roads.

Explanation and Reasons

Activities on sites may adversely affect the operation of the road transport network. Providing an adequate number of parking, turning, and manoeuvring spaces on site, the quantity of which should be dependent on the traffic generated by the activity, and adequate access to sites can reduce interference with the movement of traffic.

In the areas shown in Figures 6A.1 and 6A.2 to Appendix 6, there is generally insufficient space to provide for parking within individual sites. However, the parking demand must still be adequately catered for. Council's Works and Services will prepare a strategic plan to quantify parking needs in those areas, identify any deficiencies and recommend measures to address those deficiencies. The measures necessary to address any deficiencies will then be implemented through the Annual Plan Process. As part of the process of preparing the parking strategic plan for those areas, landowners, and businesses within them, will be formally consulted about their parking needs and given the opportunity to comment on drafts of the plan. The parts of the Business 1 Environment outside the area show in Figure 6A.2 are not yet considered sufficiently developed to warrant unconditional exemptions from on-site parking requirements.

The provisions within the Operative District Plan have been written with the deliberate intention of creating as much on-site parking as possible, 'providing an adequate number of parking, turning, and manoeuvring spaces are on site...'. This has the effect of increasing the parking supply while reducing its price (but not its cost).

On 12 May 2010 Council approved a policy for accessible parking. This policy was made operative on 25 May 2010. The policy is detailed as follows,

22.4.9 Accessible Parking

To require accessible parking to be provided for every activity in accordance with NZS 4121:2001 to increase access to the community for parking permit holders.

Plan Change 92 (PC92), Build Form and Development (Chapter 6) seeks to provide strategic policy direction on a sustainable growth pattern for the district. The revised chapter will provide guidance on how Council will provide for sustainable development of the District's built form. WDC approved PC92 on 10th August 2011, and became operative on 24 August 2011. Relative policy to the Strategy, includes policy 6.4.11 Integrated Transport,

6.4.11 Integrated Transport

- i) To promote and seek to create an effective and efficient transport system, integrating transport and land use planning for improved ease of access to public transport and walkability of neighbourhoods.*
- ii) To promote higher living densities around nodes of suburban development to enhance the use of public transport.*

The explanation and reasoning behind this policy details the following,

It is important for Whangarei residents to be able to live and work within accessible distance from a public transport node. This form of integration between transport and land use planning

involves not only the need to locate new development around key transport nodes and corridors but also to improve existing and new transport connections (including cycling and walking) within areas of existing urban development. It is important that provision is made for land transport (particularly public transport, walkways and cycleways) and this is incorporated into future urban developments.

Integrated transport is a key component to a successful parking strategy, the alternative methods of transport, such as walking, cycling and car-pooling are particularly relevant to be integrated into land use planning, rather than continually providing more parking or simply adding parking in developments.

See Attachment 10 for the analysis of the current Policy and Planning Framework relevant to this Parking Management Strategy.

Issue Identification

This section is looking at both the existing data and the common perceptions of parking issues in Whangarei. The key issues in relation to parking are:

- A public perception that there is not enough parking in the CBD
- Lack of public satisfaction with existing parking arrangements
- Poorly located off-street parking facilities
- A need to address the quality of off-street parking facilities, particularly John Street
- How suburban areas will be managing their parking
- Issues associated with minimum parking requirements.

There is a perception in Whangarei that there are not enough car parks to service visitors and commuters. Often shop owners have the view that there are insufficient car parks available for their customers, who in turn support their businesses. People visiting the CBD want to be able to find a park outside their destination and therefore, often circle the CBD looking for a park. This is what happens when parking becomes saturated and there is insufficient turnover. There may be other available car parks but not in the desired location. Often John Street Car Park has available parks, however, it is not a popular car park due to its layout. The average occupancy rates of Council's paid parking areas is around 50%, while our free car parking areas are 94% to 100% occupied. To lift the occupancy rates in Council owned car parks, Council must address the free parking. It is the management of our parking system that Council needs to focus on.

Research now shows that providing unpriced or low cost parking is one of the biggest errors that Councils make. The provision of unpriced parking means that the users are not paying for it directly. Provision of parking is never free; the cost of creating a car park for developers and council is around \$20,000 per car park. Therefore, this cost is often shifted on to goods and/or other modes of transport. This is particularly unfair for people who use alternative modes of transport, such as walking, public transport and cycling. If a significant amount of free parking is provided, there are no incentives not to drive. Around the outskirts of the town centre of Whangarei there is an abundance of free parking, which only encourages the use of automobiles. Furthermore, where site space is limited, developers find it difficult to meet parking requirements while ensuring the development is economically viable. This constraint is of particular relevance to areas within the CBD that have a relatively high concentration of smaller property titles.

There is a growing body of research to support the deletion of minimum parking requirements from the district plan. Some of the biggest impacts of minimum parking requirements include:

- **Economic development:** parking takes up valuable floor space and increases development compliance costs.
- **Travel and lifestyle patterns:** an abundance of low-cost parking stimulates excessive demand for vehicle based travel and lifestyle patterns.
- **Environmental sustainability:** excessive vehicle use reduces the sustainability of higher density urban areas, especially town centres.
- **Social equality:** the compliance costs created by minimum parking requirements fall disproportionately on low-income households.
- **Urban form:** requiring the provision of parking with each individual site fragments the urban form with numerous parking areas and contributes to urban sprawl as more land is needed to provide for activities.

Given that the average parking space takes up around 25m², in some cases the Whangarei District Plan requires nearly as much site area for parking as it does for actual useable floor area. This significantly reduces the overall value of any business activity on-site. It also greatly undermines opportunities for shared parking and the viability of centralised parking facilities.

In November's Infrastructure and Services Monthly Report, 39% of the people surveyed were satisfied with parking in the CBD. In previous surveys this figure has been around 51% satisfaction. This indicates that something needs to be done about the perception of parking in Whangarei. The CBD has a unique environment to offer its visitors and customers, and therefore, there needs to be sufficient and accessible parking available for these users. Council acknowledges that perceptions are important. However, often the case is that they are not reality and therefore the right information and data needs to be provided to the public.

Other issues Council need to investigate includes the management of spill-over parking in residential areas and during special events, and the current lack of user information/directional signage for the public.

There are also broader issues mentioned in the following section of the report including occupancy, enforcement and technology.

Parking Management Policy

Research has shown that there are two areas of concern that Council needs to pay particular attention to in regards to their parking policy. (1) Requiring a large amount of off-street parking through parking requirements in the District Plan, and (2) On-street parking throughout the city which is unpriced or under-priced. This is poor planning which leads to a number of negative impacts, such as, encouraging the use of private vehicles, distorting and degrading urban form and design, and harming the environment.

The new way forward for parking management has been extensively researched and reported on over the past five or so years. Donald Shoup is a name that is often mentioned as he is the advocate for the parking management policy that looks into three particular reforms:

- 1 Performance based priced parking
- 2 Returning the revenue
- 3 Removing minimum parking requirements from planning documents.

The first reform is charging the right price for on-street parking; this is done through performance based pricing. What this means is, the lowest price that will leave one or two vacant spaces on each block throughout the course of the day (85%). With the right technology (at a cost) it is possible to change the price depending on the time of day and day of the week. This parking practice is aligning the parking demand with the price of parking. Where parking is often saturated the price should be increased, and in areas where there is minimal demand for parking the price should decrease. Pricing according to the parking demand is essential.

The second reform is 'returning the revenue' which is collected from the parking meters. This is a very good way to increase amenities in the area, by turning small change into big changes. Revenue return will also make performance-based prices for parking more acceptable, as the community knows that their money is going towards their town amenities, and to things that they will be able to see, such as trees, clean footpaths, graffiti removal etc.

Thirdly, Shoup encourages the removal of off-street parking requirements. This freedom from parking requirements will allow greater use of existing urban areas and new uses for old buildings. The creation of parking costs a lot of money for the developers (or property owners), therefore the cost of goods and services are increased to cater for this, placing the cost on everyone, including the people that use other modes of transport. Often the excuse 'there is not a good public transport system in our city' is used to ensure that there is ample free parking in the city and minimum parking requirements in the District Plan. This is not a justifiable excuse. Removing the parking requirements can have a number of positive changes within the city.

Often the perception is that if there are no parking spaces available, more parking is required. This is not the case. It indicates the misuse of the parking regime. The problem is that we are not managing the parking spaces available to us at this time adequately. Parking management is very important and needs to be utilised in Whangarei.

An outcome of this Parking Management Strategy would be to shift Council philosophy, to providing parking that operates efficiently and which is managed at the occupancy levels of 70% to 90%.

Parking Management Principles

This section of the Strategy sets up a framework to discuss the aims and guiding principles of the Parking Management Strategy. This will ensure that any initiatives and options raised will seek to solve parking issues in the context of wider goals around parking management. Whangarei District Council will need to ensure the goals of the Strategy are followed, through the use of techniques implemented to solve the parking issues identified earlier in this strategy.

As detailed in the Urban Design Strategy, Council is looking to create a highly compact and vibrant pedestrian environment for the central business district (CBD) core. The outer CBD area has the aim of an intensive yet attractive gateway living environment that contributes to the continued development and centrality of the CBD.

One of the main reasons for the need to develop a parking plan is to manage the increasing demand for car parking in the city centre (resulting from growth in population which subsequently increases the number of commuters travelling by private vehicles), and to align the management of parking with the development of the CBD. There is also a desire to develop the diversity and vibrancy of the CBD through the encouragement of mixed use development and specialised retail and leisure experiences. This is expected to help the CBD compete with outlying large scale retail development.

The aim through the management of parking is to balance the needs of the users - the most convenient parks should be for short term users.

Best Practice in Parking Management

MR Cagney Consultants (based in Auckland) have developed the follow parking principles, drawing on the work of Shoup and Litman⁶. Following these principles is recommended to guide the development and implementation of this parking strategy. There are 10 general principles that can be applied to efficient parking management including:

- 1 **Choice:** Consumers should be able to choose between travel options in an economically neutral environment.
- 2 **Accurate pricing:** Users should pay directly for the costs of parking, particularly the opportunity costs associated with land it occupies. This principle supports consumer choice, by rewarding efforts to reduce demand for parking. Priced parking has been shown to be one of the most efficient parking management tools (Shoup, 2005).
- 3 **Prioritisation:** The most desirable spaces should be managed to favour higher-priority users. This principle effectively seeks to establish a hierarchy of parking users based on specific needs (such as mobility impaired and commercial service needs).
- 4 **Sharing:** Parking should serve multiple users and destinations so that it can accommodate variations in demands associated with different activities. Parking ideally should be de-coupled from individual developments.
- 5 **Efficient utilisation:** Parking facilities should be managed so occupancy is around 85%. Policies should seek to provide incentives that encourage the redevelopment and/or conversion of inefficiently used parking facilities.
- 6 **User information:** Users need to be well informed of the location, availability, prices, regulations, and penalties associated with the use of parking facilities. This information will encourage more efficient use of existing parking resources.
- 7 **Adaptability:** Parking needs to be adaptable in the face of uncertainty and change. Demographic and socio-economic trends, such as an ageing population and high fuel prices, suggest that current levels of vehicle use will not be sustained.
- 8 **Peak management:** Special efforts are needed to manage peak demands. This acknowledges the negative effects of excess demand for parking, such as driver frustration, illegal parking, and increased traffic congestion.

⁶ Donald Shoup and Todd Litman are respected researchers in the field of parking management. Both have extensively researched the effects of free parking and how to manage it accordingly.

- 9 **Quality:** The quality of parking facilities is as important as quantity. This principle aims for parking facilities to provide acceptable levels of security, accessibility, and user information. Investing in quality leads to more efficient use of existing parking supply.
- 10 **Comprehensive analysis:** All significant costs and benefits should be considered in the planning and provision of parking, including the opportunity cost of land. This principle encourages the implementation of cost-effective parking management solutions.

These principles apply equally to both on and off-street parking management.

The first three principles, ‘choice’, ‘accurate pricing’, and ‘prioritisation’ are very important to the successful implementation of this plan. ‘Choice’ is essential as one of the aims of this approach to parking management is to allow transport users to make more informed choices about transport options by ensuring that the true costs of transport modes are paid for directly. If the pricing for parking is managed accordingly to demand, the value of the resource will become understood and people will then be able to make an informed choice about how they travel. ‘Accurate pricing’ and ‘prioritisation’ will be implemented through the pricing regime discussed in Part Two of this report. This ensures that the user pays for parking, and pays the amount that reflects the demand. The most desirable places to park will therefore be available for the higher valued customers.

It is vital that Council follows the above principles as they set out a clear direction to solve the parking issues identified.

Parking Management Techniques

Remove Minimum Parking Requirements

As detailed under the issue identification section, minimum parking requirements are creating many unintended consequences.

The Operative Whangarei District Plan has areas in the CBD that are exempt from the parking requirements, shown in the following maps unshaded.

Figure 9 - Area Exempt from Parking Requirements

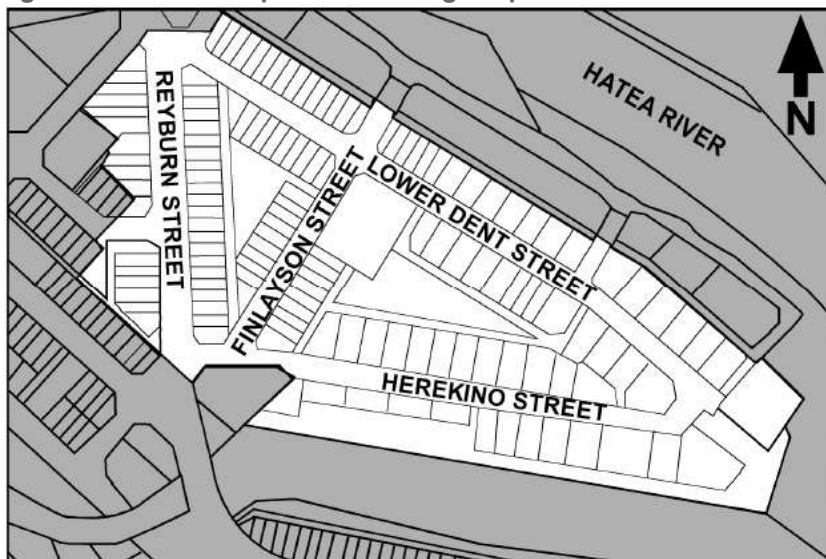


Figure 10 - Area Exempt from Parking Requirements (2)



As shown in the maps above, Whangarei's CBD does have some areas exempt from the minimum parking requirements, but this is recognised in their rates (charged at a rate higher than residential activities).

Appendix 6 of the Whangarei District Plan lists the provision of minimum parking requirements for particular land use developments (Attachment 11). Minimum parking requirements require new developments to provide a certain number of parks onsite; which potentially limits the possible development that could take place on the site. Parking spaces shall be provided (except in the area shown in figures 6A.1 and 6A.2) for activities within the site at the specified rates. Activities are classified as, retirement villages, hotels, home occupations and so forth. There is no rational method as to how the parking minimums are set. These figures were developed over 15 years ago and there is no evidence as to what research or calculations were done to come up with these figures. It is likely they were copied from other local authorities throughout New Zealand.

Extending the areas exempt from the minimum parking requirements in the CBD, along arterial routes and removing the requirements altogether from the District Plan needs to be investigated. These minimum parking requirements dictated in the District Plan, can restrict development opportunities through the sometimes onerous parking requirements. Most businesses will decide to provide parking as an incentive for their customers. Minimum parking requirements also contribute to sprawl and artificially hide the costs of parking, as explained earlier. What Council will investigate when removing the minimum parking requirements is the design requirements of on-site parking, as this is important. Also, arterial routes are areas where less parking should be provided so that people may consider other forms of transport.

Council has used the technique of 'in lieu payments' on development which could not meet the minimum parking requirements, for example, in Kamo and Waipu. This cost is done on an estimation basis only; council calculates the cost of the parking shortfall and estimates the cost to Council of providing alternative parking. This is unlikely to accurately reflect the actual cost now and into the future. If Council removes the minimum parking requirements the 'in lieu' policy will become redundant.

In the Business One Environment, there is four hectares of parking provided, covering 16% of land. Compared to the Open Space Environment, there is only 12% (Laurie Hall & Cafler Park).

Removing the minimum parking requirements is essential as it is the most influential factor in parking demand supply, and will be the ultimate success of any parking plan.

Parking Management

Parking controls ensures vehicle turnover and thereby play a role in the economic vitality of the city centre. Currently there are around 70% of people travelling to work by private car in Whangarei; this means that there are large land areas required to be used for parking, to accommodate the high numbers of commuters. It is important for commuters to be looking at alternative modes of transport, car pooling and to be parking on

the outskirts of the CBD/Town Basin area to ensure that there is sufficient parking for the short term visitors (high value customers) to the CBD area. The aim is to balance the needs of the users; the most convenient parks should be for short term users.

- Parking management includes:
- Unrestricted Parking
- Time Limits
- Priced Parking (unlimited time)

Whangarei District Council will use the methods below to manage its parking regime. If free parking becomes saturated, then time limits will be used in the first instance. A time limit of 180 minutes is initially recommended. If there is still an issue with unavailable car parks then a price structure should be implemented. If the price is right, a natural turnover is created. Time limits and priced parking should not be used in conjunction with each other.

Any changes to the management of parking in Whangarei must be well signalled to allow time for people and businesses to adjust, staged so that people can make incremental adjustments over time, and coordinated so as to maximise uptake of viable alternatives.

Time Limits

Time limits are often considered the second best policy for managing parking. Time-limits restrict the amount of time shoppers and visitors can spend visiting a town centre or city centre, which in turn limits the activities they can undertake while there. Time-limits create unnecessary vehicle movements in the city centre, when visitors who want to stay longer have to shift their vehicle in order to complete their visit. This contributes to traffic congestion and increased vehicle emissions.

Time limits are often used throughout cities to encourage a constant turnover of people throughout the parking areas and discourage all day parking by commuters. Therefore, this method is often seen as effective. However, time limits can discourage some activities that could be undertaken in those areas, and reduces the time the public can spend in the town centre. Therefore, removing time limits in the central city is an option, to provide greater flexibility, and allow users who wish to pay the premium charge for on-street parking to do so.

Time limits also have higher enforcement costs than priced parking, as more constant checking is required. Within the CBD area there are a range of time limits with either free or priced parks. Placing time limits on free parking often does not work, as the workers will move their car in their breaks. This practice is often seen in areas throughout Whangarei.

Time-limits also create a highly polarised win-lose situation: either you win – by paying nothing for a car park – or you lose – by not finding a car-park (or by being served an infringement notice). Revenue is being generated from a relatively small base of people who are served with infringement notices. The public often perceive infringement notices as highly negative and often ‘unjust’, which contributes to a negative perception of council as a provider and regulator of parking.

Time limits are useful to ensure that there is a turnover. A time limit could be put in place along with pricing, which will reduce the risk of some people being prepared to pay the premium price and park all day, undermining the turnover initiative. In areas of low occupancy time limits might be more attractive than priced parking. It is recommended that time limits be used in areas of low occupancy; however it is suggested that Council move away from the practice of using time limits, where saturation is occurring.

It is also recommended that Council undertakes a trial, changing the time limits to 180mins for on-street parking, no time limits for off-street parking, and pricing accordingly to achieve 70% - 90% occupancy in the CBD. This should be undertaken on a three or six month trial to ensure there is adequate time for behaviours to change. For the Town Basin a time limit of three hours is recommended to provide flexibility for tourists. Pricing should also be introduced to achieve 70% to 90% occupancy.

Priced Parking

Priced parking is managed through parking meters or a ticketing process. It is a technique used to manage parking demand and supports the principles of consumer choice and prioritisation. Pricing contributes to higher turnover without the inconvenience of time-limits. However, it is often seen by the public as a method of gathering revenue. Priced parking is used to ensure that the user pays for their parking. It works well as the parking supply is prioritised for the high value customer while discouraging the long stay users such as

commuters. As discussed, charging the right price for parking is essential. If car parks are over priced then the parks will not be used. However, if the parks are under priced they are likely to become saturated and other potential users will not be able to park. Priced parking is suited to areas experiencing more than 70% peak occupancy. For example, the data collected from Cameron, Rathbone and Vine Streets, highlights the need for the price to be increased fractionally, and the time limits extended. The increase of the price will create the natural turnover instead of forcing people out through the use of time limits.

Research has shown that the demand for parking is elastic and can be reduced by up to 30% when pricing is introduced, although this will vary depending on the length of stay. Long-stay parking is usually more elastic than short-stay parking. This means that long-stay parking users like commuters are more likely to park in the lowest priced areas or may make other travel choices where an acceptable substitute exists.

Pricing is the best tool for managing the demand for parking. Where demand is low, the right price may be zero. The progression in parking management for Whangarei District Council should be implemented as follows:

- Unrestricted parking: no rules apply
- Time limited parking: suitable for suburban areas, with lower demand, where the cost of parking technology outweighs the benefits. In this case time-limits should be consistent and not below 180 minutes
- Priced parking: appropriate in areas where demand remains high after time limits have been implemented. As discussed previously, ideally time-limits and pricing should not be used together.

Drawing on the Best Practice Principles presented, one of the aims of this approach to parking management is to allow transport users to make more informed choices about transport options by ensuring that the true costs of transport modes are paid for directly. Using this approach in the parking management plan it can be expected that Whangarei District Council prices parking according to demand, the value of the resources will become understood and people will then be able to make an informed choice about how they travel.

The best approach for Council in setting its parking regulation is to ensure that off-street parking is cheaper than the most desirable on-street parking. Looking at John Street car park as an example, it is currently underutilised, due mainly to security reasons. Occupancy rates are on average 25%, with peak occupancy at 40%. It would be essential that the price increase would also be reflected on the on-street parking, otherwise there would be no incentive for people to park in the building. Paid parking with unlimited time restrictions would also cater for commuters to the city centre.

Pricing helps to ensure that long-term parking, such as commuters will shift to off-street parking and free up on-street parking for shorter-term visitors. Thus, priced parking is most appropriate in areas with high occupancy. Priced parking is about managing the demand for parking, not about revenue collection. If parking is correctly priced, the effect will be that on-street parking has a higher turnover and the long-term parking shifts users to off-street facilities.

When changes are made to the price of parking, a methodology to follow could include:

- 0% to 35% minus 50 cents off the initial price
- 35% to 65% minus 20 cents off the initial price
- 65% to 85% no change to the initial price
- 85% to 100% raise 20 cents to the initial price.

Priced parking may also be essential to manage the busy night time periods in Whangarei, for example, Saturday's (such as, in Vine Street Car Park), and on Friday and Saturday nights. Data collection would be required here to determine whether there is a demand in parking that requires management. Another situation to investigate is the streets with 120 minute time limits, but regularly occupied with commuters that move their cars frequently, such as Albert Street. It would be important here to look at whether higher infringement costs could deter this, or, to remove the time limits altogether and charge 50 cents an hour, therefore the commuters are paying for the use of the parking.

For Whangarei, a simple off-peak vs peak price differential for those car parks deemed to have saturation (or vacancy) problems at certain points during the day could be implemented, such as split rate periods between 9am to 11am, 11am to 2pm, and 2pm to 5pm. Investigation into the technology costs to implement this would be needed, and a cost benefit analysis undertaken, to determine if there would be any benefit in this.

It is recommended that WDC uses price to manage parking. New parking areas need to follow this methodology, and some parking areas may require changes (such as, increase in price) to ensure a constant turnover of people throughout the city.

If prices are set to ensure utilisation is high but not over-saturated then people are, by definition, not being 'driven' away (p23, McCormick Rankin Cagney, March 2010).

Revenue collected from priced parking could be used for the redevelopment of the area from where the revenue has been collected. The revenue collected from the parking meters should be spent on public improvements. This would have a number of positive impacts, such as attracting more customers through having a more appealing environment. The visible public benefits will justify the performance parking prices. If there is an increase in the cost of parking in on-street and off-street parking spaces, Council could use this increase in cost towards the redevelopment and beautification of the parking areas. For example, if the current cost is 60 cents an hour, and this is raised to \$1 an hour, the extra 40 cents an hour should go into the pool of money spent on beautifying and improving the parking environment.

Monitoring

Monitoring includes data collection. If we want to keep parking utilisation between the levels of 70-90% then regular data collection needs to be undertaken and reported back to Council. This level of utilisation ensures parking resources are available. Performance-based parking is required to get the right price for on-street parking. This involves setting the lowest price that will result in approximately 85% occupation of the parking spaces at all times, i.e. one or two vacant on-street spaces remain on either side of the street.

The optimal occupancy of 70% to 90% is a target at any time in a working day. This applies to Saturdays as well, but is not applicable to other times, such as Sundays and public holidays. The target of 70% to 90% may be very difficult to achieve at all times of the day in Whangarei. The first priority for Whangarei should be the peak time target, as Whangarei is currently dealing with saturation over 90% in many areas.

This parking practice is about managing the demand for parking. Where parking is often saturated then it should be priced accordingly, while the price should stay or be changed to zero if there is no or minimal demand for parking. The right price for parking is essential. What Council is trying to achieve is well used parking facilities, not parking that is over-saturated (no free parks for potential users). This will ensure that there is adequate parking for the shoppers and visitors to the town centre and also support and enhance the economic viability of business.

To calculate 'what is the right price for parking', Council must look at the results each time there is a change to the price, to see whether there are spaces available on the street, road or parking areas. If this happens then the price is right. The right prices may vary between streets, by time of day and by the day of the week. The right price for on-street parking is the lowest price that will allow the parking systems to operate efficiently.

Whangarei should start using this parking management regime in its parking areas. There can still be free parking in the CBD, but this may not be as close to the amenities as the public are used to. If parking remains free and there are still parking spaces available, then there is no need to charge for parking, but as soon as parking spaces become unavailable priced parking should be implemented in the area.

Monitoring should also occur in residential areas, to see if commuters are taking advantage of this free parking. This is called 'spill over' parking. If this problem arises, for example along the Avenues, it can become very frustrating for residents of these areas, as traffic is increased along the roading network. Council will monitor and address this problem if required. The Town Basin area, in particular, once the revitalisation project is completed, will need greater monitoring of parking compliance, as changes to the parking time and price will be required. Removing the free parking in this area, is one of the steps Council will be taking.

Targeted monitoring is required to be done in the Town Basin, to keep a watch on the parking behaviour of the users. Changes to the time and price structure may be required. Also, streets that only have time limits need to be monitored to ensure that they are experiencing turnover. Technology or stronger enforcement could also be used here. Improved data and continual monitoring of parking usage will enable incremental improvements.

Monitoring also includes reporting to Council on a regular basis, at least quarterly. This will make it possible to alter the parking time or cost structure where required. Council's overall commitment is to improve the level of monitoring it undertakes.

Enforcement

Enforcement is currently done privately through Environment Northland Ltd (ENL) who is contracted to Council. ENL are required to provide a parking management plan monthly, which details the emerging parking issues, and how resources could be reconfigured to address these issues, such as, increasing enforcement in a specific area at the expense of possibly relaxing enforcement in another. This monthly report will ensure that the right areas are being targeted through enforcement; and must be approved by Council's representative. The overall focus is providing an enforcement service which assists council in achieving the aims of our parking management strategy.

Enforcement is an essential part of parking management along with monitoring, to ensure that parking is managed correctly. The main aim of enforcement for Council is to ensure that parking regulations are understood and followed in order to ensure that parking is managed efficiently, and in a fair and equitable manner. Enforcing time limits requires labour intensive enforcement (chalking of the tyres, and then returning within the allocated time period), while enforcing priced parking is done with greater ease (whether the occupant has paid for parking or not is shown on the dash of the car).

As discussed in this strategy it is suggested that Council keeps technology simple for the users. However, when occupancy rates exceed the maximum and the methods in the toolbox have been exhausted, the use of new technology should be investigated. This is a cost versus occupancy issue. If it is agreed that Whangarei would not have an occupancy issue, then it does not justify spending money on expensive technology. Enforcement measures through technology could be explored when and where required.

Spill-over Parking Management

Spill-over parking often results from a change in commuters parking patterns or one-off situations such as peak shopping season and events. There are a number of ways in which spill-over parking can be managed including:

Overflow parking and special event parking management plans: this could include temporary park and ride, free or validated public transport for events and signage.

Residents parking permits: a useful interim solution to addressing residents concerns.

Shared parking: this can be used for special events, or on an on-going basis.

Parking brokerage services: can help to connect businesses with spare parking to those who need extra parking.

Consideration should be given to the need for spill over parking management and the best ways to manage this on a day to day and one-off special event basis.

User Information/Signage

User information for parking is put in place to help facilitate knowledge of parking options, reduce infringements and reduce parking search times. It is essential that Whangarei District Council makes improvements to the current user information provided. This includes the provision of parking signs. It is recommended that WDC reviews its signage throughout the Whangarei District, particularly in the CBD and Town Basin areas. Directional signs are important as they reduce the distance travelled by vehicles looking for a car park. Parking brochures could be created, showing the parking areas and associated costs and time allocation. This should also encourage employees to park in areas further out from the CBD, thereby, freeing up convenient car parks for short term users. This is also likely to address the perception of poor parking availability. Focus needs to be on information available on the location and regulations of the existing parking.

Shared Parking

Shared parking is an important parking principle as it allows parking destinations to serve multiple users at different times of the day. For example, if a car park is used by a business with working hours between 9am and 5pm, it could be used by the neighbouring business, such as a restaurant, between the hours of 5pm and 11pm. Thus, parking spaces are shared by more than one user, which allows parking facilities to be used more efficiently.

Whangarei District Council is looking at creating a mixed use CBD (Plan Change 92) and share parking works well in mixed use developments. In developing shared parking facilities, one must consider efficient design, operation and the management of the parking facilities (2010, Hamilton City Council).

Using shared parking is something that Whangarei District Council could investigate in the future.

Technology

At present the parking in the CBD operates through pay and display meters, which have been incrementally replacing the Duncan (coin-operated) single bay meters. There are some Duncan meters still present in the outer areas of the CBD which are to be replaced over time. Council originally bought the pay and display metres second hand from other Councils when they were upgrading their systems. Changing to the pay and display meters saw an increase in compliance (paying for parking), as people were more aware of the need to pay for their parking. Having the ticket on the dashboard made them more aware of the possibility of receiving an infringement.

Today, there are a number of options when it comes to enforcement of priced parking and time limits. For example, a system being trialled in Palmerston North uses GPS technology which enables parking wardens to know which parks have vehicles staying in them longer than the allocated time limits. This system is expected to increase the compliance of motorists with the parking regulations as the parking wardens are notified immediately when vehicles have exceeded the time limit.

Electronic parking sensors are currently used in Taupo. There is free parking throughout the city of Taupo, however, there are time limits enforced. When you park in your desired park, the occupancy sensor recognises this and then counts down the time limit for that park (for example, an hour). If you haven't moved your car within the allowed time limit, the enforcement officer is signalled through its wireless device, detailing the location of the car park which is over its time limit. The occupant then receives an infringement fine.

Both these methods of automatically advising of overstays can increase the efficiency of parking enforcement. Wardens will no longer have to chalk car tyres, which is a very labour intensive job. Wardens cannot be everywhere in the city, which often leads to unregulated areas, resulting in people parking for longer than the allocated time. Having this sensor system linked with priced parking (like frog parking in Palmerston North), should cover the cost of providing the enforcement officers. Parking technology can be very expensive and therefore, this would require further analysis as the possible benefits may not outweigh the costs in Whangarei.

There are a number of benefits with both these methods of parking enforcement using technology. The data that is collected includes the revenue collected, occupancy rates (time of day and street locality) and the number of infringements. Conclusions can be drawn about the parking patterns by patrons, the areas where improvement is required, peak periods and streets that people may utilise more than others. This data can be analysed and used by Council to make any changes where required.

Technology is also assisting in the development of new car parking meters which can accept credit cards, eftpos cards, along with notes and coins, ultimately improving the customer experience. It is noted however, that eftpos technology is still very difficult to implement in New Zealand. Whangarei District Council has been approached by a local company to look at the option of payment through mobile phones, this would be a great benefit to the users, as we are slowly moving towards a cashless society where it is not common to carry cash.

The main reasons Council would consider technology upgrades are user convenience, data collection and improved enforcement. Enforcement measures through technology could be explored when and where required. A cost benefit analysis will need to be undertaken to see whether implementing new technology is affordable and worthwhile for Council.

Management of Off-Street Parking Buildings

The location of parking buildings will have a profound effect on the long term development of the CBD and should be considered as part of a comprehensive approach to developing the CBD which includes, the road network, traffic management, public transport, walking and cycling, and development of a transport hub for the central city. Such an approach has been identified in the Growth Strategy Implementation Plan which is presently being developed.

'There needs to be a parking building on the southern fringe of the CBD (around Water Street) to service the Forum North/CBD area, and another on the northern fringe of the CBD (around lower Hatea Drive) to service the Town Basin/CBD area.' (Draft Growth Strategy Implementation Plan)

The Growth Strategy and Implementation Plan indicates the development of the CBD and Town Basin area into a pedestrian friendly precinct over the long term, with car parking located on the fringes and non

essential traffic movement reduced within the CBD. The Urban Design Strategy likewise envisages such a future with the possible transformation of Laurie Hall Car Park into a central city park. To enable this, off-street parking in the CBD area should be reduced over time and replaced by the northern and southern multi level parking buildings and the expansion of the Railway Road car park. As these facilities are completed, off-street parking in the CBD and Town Basin should be reduced (i.e. Laurie Hall, John Street and other car parks) to enable development of a pedestrian friendly, high amenity CBD and Town Basin precinct.

Furthermore, Council should note that providing more shared car parking buildings may allow for further revitalisation of the inner city area through rationalisation of existing on-street and on-site parking. However, if these new car parks are simply an addition to the existing parking stock, this option will further increase the incentives of people to drive to the area. Whether this is counterproductive to the goals of a revitalised town centre should be an important discussion for council, rather than assuming that more parking will be required to service these areas.

It is recommended that multi level parking buildings be kept under review. Securing land now in the northern and southern sectors of the CBD is important to provide for the future. This need may not arise at all (for example, due to a substantial increase in oil prices) or may not be needed for 10 to 20 years time. A cost analysis of developing parking buildings will be required to be undertaken by Council, to ensure that development only occurs when required.

Looking at John Street Car Park in particular, the *Policy and Delegation Manual* under Property Management Objectives by Portfolio states that the intention of the John Street Car Park is:

1.4 John Street Car Park

This parking building is the only significant parking building available to the general public. It is not considered to be a strategic asset, as the service could be provided by the private sector. However, given limitations on parking revenue in the local market, it is prudent to retain this asset until market conditions produce a higher return on capital, at which point it could be sold.

In the meantime, returns can be maximised by leasing some spaces for dedicated use e.g. for staff parking, while retaining the balance for casual use.

- *Maximise cash returns.*
- *Integrate operations with wider WDC parking strategy.*
- *Manage security issues to minimise public concerns.*
- *Consider disposal to private operator. (p192)*

John Street Car Park can be viewed as two things; one as an underutilised asset, as it is currently not being used by the commuters to Whangarei City Centre and is causing problems for council managing it; or two, as an opportunity for council to refurbish it and make it user friendly. It is in a very central location, and once the parking prices are set in the CBD and Town Basin the parking building can be managed accordingly.

The sale of public parking facilities needs to be thoroughly investigated before any decisions are made. The location of facilities should support a walkable city centre and provide convenient access to the city centre. Emphasis should be on providing quality off-street parking facilities, instead of increasing the quantity supplied. A greater level of ownership may allow council to have increased control of the total parking supply and patterns, but decreased ownership may encourage improved parking facilities through competition.

It is important for Council to note that the sale of John Street Car Park would give the private owner of this parking building the opportunity to unilaterally increase city centre parking charges to increase revenue levels. This could potentially pose a political risk, and community reaction and criticism. There are long-term implications of Council not having control over the price of off-street parking and the location of key parking facilities.

It is recommended that John Street Parking Building is revitalised/ upgraded, with the goal of improving the occupancy levels. This may also involve lowering the price per hour that is currently charged to encourage the public to use this space.

‘Park and Ride’

A ‘Park and Ride’ service has been discussed in the past as a possibility for Whangarei, and was not considered viable at the time of consideration. With 60% of the growth that has occurred in Whangarei since 2001 being in the rural and coastal areas (Whangarei District Council, 2010), there is more need for a service like this to be provided by Northland Regional Council (NRC) or Whangarei District Council, or a joint

venture. Public transport in Whangarei is currently run by the Northland Regional Council. WDC and NRC need to work closely together in regards to the provision of public transportation, as projects are often interlinked, and rely on the success of one another. The public transportation system plays an important role in relation to this Parking Strategy. An accessible public transport system is required to ensure that the public has a choice when deciding whether to drive their car or take the bus into town. A park and ride service would need to be feasible for either NRC or WDC or both, to provide. This is a matter to keep under consideration, as the development at Pohe Island is underway, it should be considered in due course. It is recommended that continual review of this option is undertaken by WDC.

Recommendations

The following recommendations have been identified as required by Council to align the Parking Management Strategy with other relevant projects and strategies. These proposals will also ensure that there is parking still available for the long term users (commuters), and includes possible car parking development when the need arises in the future.

	Recommendation	Priority
1	Council to embark on a District Plan Change, to remove minimum parking requirements. This is crucial to enabling further development and revitalisation of existing land.	High
2	Review parking signage throughout Whangarei District, in particular the CBD and Town Basin areas. Directional signs are important as they reduce the distance travelled by vehicles looking for a car park. Parking brochures could be created, showing the parking areas and associated costs and time allocations.	High
3	Council works towards a parking policy where charges reflect demand for spaces, and performance is measured by the resulting occupancy rates. This requires Council to change its parking focus, to concentrate on achieving occupancy rates between 70% and 90%. This is a key part of the overall strategy for parking management in Whangarei.	High
4	Council undertakes a trial, changing the time limits to 180 minutes for on-street parking, no time limits for off-street parking, and pricing accordingly to achieve 70% - 90% occupancy in the CBD. This should be a three or six month trial to ensure there is adequate time for behaviours to change.	High
5	Council introduces time limits of 180 minutes to provide flexibility for tourists in the Town Basin area. Pricing should also be introduced to achieve 70% to 90% occupancy when saturation occurs.	High
6	John Street Car park building is revitalised and upgraded, with the goal of improving the occupancy rates.	High
7	Continual consultation and education is undertaken with the business and wider community. Information will need to be shared when there are changes to the management of the parking, such as time and price.	High
8	Council to consider in the future, the implementation of improved parking technology. This will increase the efficiency of parking management, enforcement, and user convenience. A cost benefit analysis will need to be undertaken to see whether implementing new technology is feasible for Council.	Medium
9	As required, an in-depth analysis of parking in suburban areas is undertaken, to gather accurate data and to identify the parking behaviour in these areas. This will ensure the parking situation is adequately dealt with. Monitoring where appropriate will need to be continuous.	Low
10	Multi level parking buildings to be kept under review. Securing land now in the northern and southern sectors of the CBD is important to provide for the future. This need may not arise at all (for example, due to a substantial increase oil prices) or may not be needed for 10 to 20 years time.	Low
11	Development of a Park & Ride service to be kept under review.	Low

References/Future Reading

- Barter, Paul. (2009). *Three paradigms in parking policy and their relevance to Australian cities*. 32nd Australasian Transport Research Forum. Auckland, New Zealand.
- Donovan, S. (2009). *How Free Is Your Parking?* FCPP Backgrounder. Winnipeg. Frontier Centre for Public Policy 77.
- Hamilton City Council. (February 2011). *Parking Management*.
- Hamilton City Council. (March 2010). *Parking Management Action Plan*.
- Litman, T. (2006). *Parking Management Best Practices*. Chicago. Ill. American Planning Association.
- McCormick Rankin Cagney NZ Ltd. (March 2010). *Review of the Viaduct Parking Trial*.
- Northland Regional Council. (1999). *Regional Policy Statement*.
- Opus International Consultants Limited 2003. (2003). *Developing a Parking Strategy for Whangarei*. Auckland. New Zealand.
- Rotorua District Council. (August, 2010). *Parking Policy Review*.
- Rotorua District Council. (April, 2011). *Part Five City Centre*.
- Shoup, D.C. (2005). *The High Cost of Free Parking*. Chicago. Planners Press. American Planning Association.
- Shoup, Donald. (2010). *A Day with Professor Donald Shoup. The Silver Bullet: Parking as the Integration of Land Use and Transport?*. New Zealand Planning Institute. New Market, Auckland.
- Traffic Design Group. (2006). *Whangarei Parking Review*. Lower Hutt, New Zealand.
- Whangarei District Council (2008). *Whangarei Growth Model*.
- Whangarei District Council (2009). *Long Term Council Community Plan 2009-2019*.
- Whangarei District Council. (2010). *Whangarei District Growth Strategy, Sustainable Futures 30/50*.
- Whangarei District Council (2010). *Fees and Charges 1 July 2011 to 31 June 2012*.