
Parking management options

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1. Introduction

Parking management is a complex issue that all road controlling authorities deal with. It is an issue that generates a high level of community and business interest. The interplay between parking supply and demand can influence travel behaviour, the look and feel of an area and economic viability. However, there are a range of tools that can be used to manage parking supply and demand. This paper identifies these options, and discusses the pros and cons in the context of Taupo town centre.

Parking in Taupo

Taupo District Council (TDC) provides on-street and off-street parking. There are currently no parking fees for either short stay or long stay parking. However, there are a range of time restrictions in the central business area as shown in **Figure 1.1**.

Off-street parking is provided by the Council and can be accessed from Heuheu Street, Taniwha Street, Robert Street and Tuwharetoa Street (368 parks in total). These car parks have no time restrictions and can be used by commuters, shoppers or visitors. There is no privately-owned public off-street parking in Taupo.

In total there are 5,075 parking spaces in the central business area, 3,711 are publicly available and 1,364 are private.

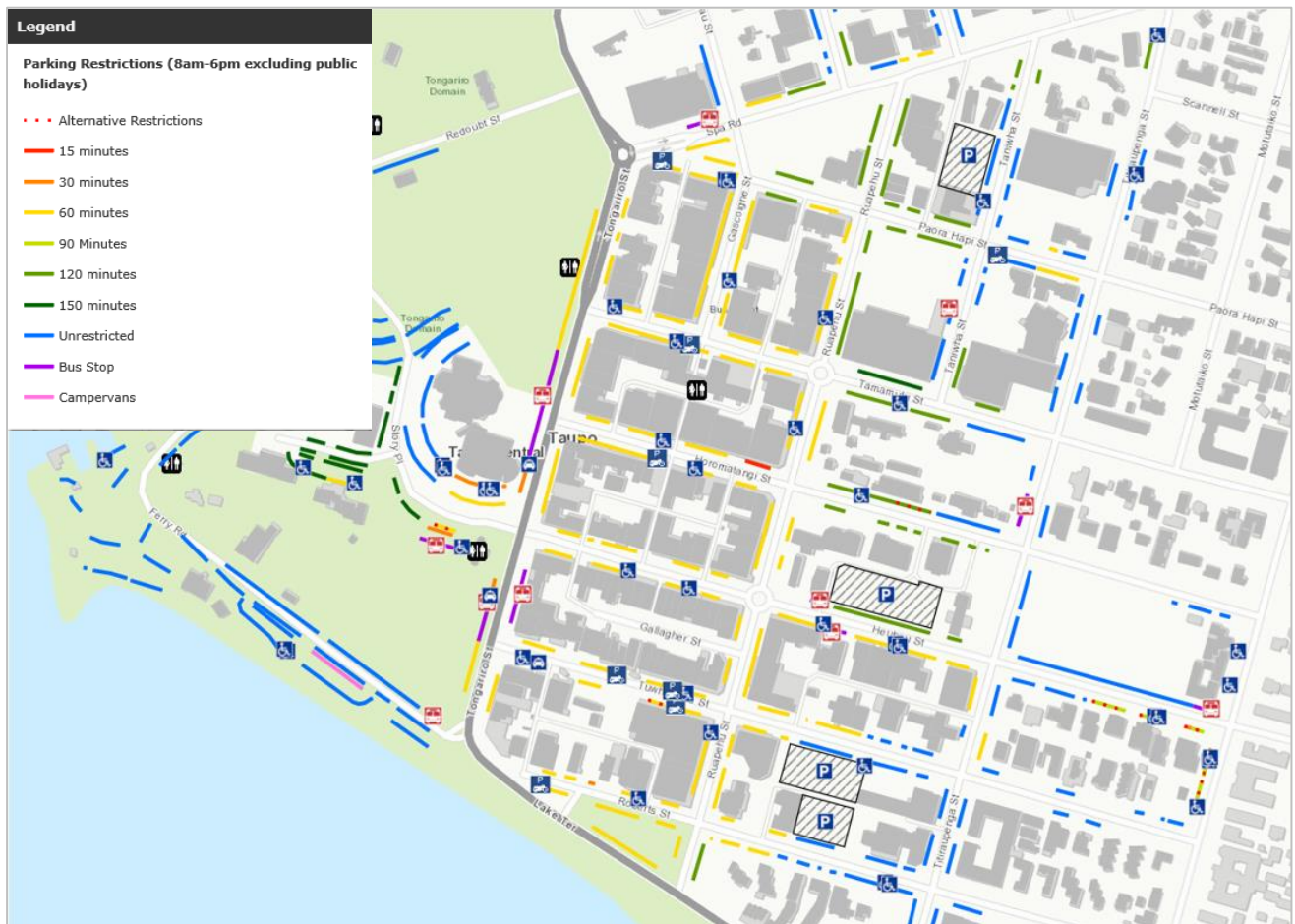


Figure 1.1 Taupo parking time restrictions¹

TDC undertook parking occupancy surveys of on-street and public off-street car parks during the morning and evening periods where parking is generally observed to be at its peak (10:30am – 11:20am and 1pm – 2pm) between 29 November 2018 and 16 February 2019. On average the parking occupancy within the entire study area was recorded as 75%. However, there are notable hotspots between Titiraupe Street and Tongariro Street indicated by the red and orange sections in Figure 1.2. Parking occupancy is notably low along Titiraupe Street and to the east, to the west of Tongariro Street (Story Place, Ferry Road, Redoubt Street), and north of Spa Road indicated by the green segments.

International best practice suggests that 85% parking occupancy is the optimal level² to maintain vibrancy but to also prevent some of the negative impacts of parking such as circulating traffic. Parking demand forecasts predict that occupancy will reach 84% by 2039 and 88% by 2049³ without any significant interventions. This suggests that there is no urgent parking supply issues in the town centre short term.

This technical note explores the role of parking management measures to support a discussion with the community on their preferences, and to inform the development of the transport strategy.

¹ Sourced from TDC online map service <https://www.arcgis.com/apps/webappviewer/index.html?id=233df08e395c47388d2e17503e8b879d>

² For further information refer to the technical note 'Key Performance Indicator Framework' dated 16 May 2019

³ For further information refer to the technical note 'Taupo Civic Administration Building Parking Assessment Technical Note' dated 28 May 2019.



Figure 1.2 Parking survey occupancy rates

2. Parking management best practice

It is important to understand that parking management is strategic in nature. It can be influenced by external factors such as car ownership and usage, and urban density. It is a tool that can help to promote or discourage specific behaviours. It should therefore be considered alongside other outcomes for Taupo. For example, if the overarching objective was to encourage sustainable travel, then a particular set of management options would be recommended. Alternatively, if the goal is to provide parking for everyone close to their destination then a different set of management options would be selected. It is therefore timely that parking management is being considered through the development of Taupo's Transport Strategy.

The Victorian Transport Policy Institute is an international leader in providing parking management guidance⁴. The Institute defines parking management as *policies and programs that result in more efficient use of parking resources*.

Figure 2.1 outlines ten general parking management principles contained within this guide.

Parking Management Principles

These ten general principles can help guide planning decision to support parking management.

1. *Consumer choice*. People should have viable parking and travel options.
2. *User information*. Motorists should have information on their parking and travel options.
3. *Sharing*. Parking facilities should serve multiple users and destinations.
4. *Efficient utilization*. Parking facilities should be sized and managed so spaces are frequently occupied.
5. *Flexibility*. Parking plans should accommodate uncertainty and change.
6. *Prioritization*. The most desirable spaces should be managed to favor higher-priority uses.
7. *Pricing*. As much as possible, users should pay directly for the parking facilities they use.
8. *Peak management*. Special efforts should be made to deal with peak-demand.
9. *Quality*. Parking facility quality (aesthetics, convenience, safety, etc.) is as important as quantity.
10. *Comprehensive analysis*. All significant costs and benefits should be considered in parking planning.

Figure 2.1 Parking management principles

Parking in Taupo currently aligns to some of these principles, however, there is scope to further address the principles of *user information, sharing, pricing or peak management*.

The Austroads *Guide to Traffic Management Part 11 – Parking*⁵ is also a useful guidance document for all issues related to parking.

⁴ Parking Management – Comprehensive Implementation Guide, 18 March 2019. Todd Litman, Victorian Transport Policy Institute.

⁵ <https://austroads.com.au/publications/traffic-management/agtm11-08>

3. Parking management measures

This section describes a range of parking management measures for further consideration in the emerging Transport Strategy; and includes a list of pros and cons for each measure.

Shared parking

Shared parking is where parking is available for different uses at different times. For example, off-street commuter parking is used by workers during the day, but can be available for people going to restaurants in the evenings. The aim is to ensure that available parking is used for as much of the day as possible, as opposed to each land use / activity providing its own parking resulting in an oversupply for much of the day.

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> • An efficient use of space • No infrastructure investment (parking buildings) required • Better urban design outcome with less space dedicated to parking | <ul style="list-style-type: none"> • Requires cooperation and buy-in from parking/landowners • May require some locations to upgrade to provide lighting or security • May require additional signage • Requires compliance (or enforcement) to ensure the process works |

Improvement of alternative modes

An option to manage parking demand is to provide good alternatives to the private motor vehicle. This may include good pedestrian, cycle, e-scooter and public transport infrastructure/services.

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> • Less space allocated to parking • Reduced traffic congestion • A more active community | <ul style="list-style-type: none"> • Cost to upgrade facilities • No guarantee of usage • Relies on behaviour change (which can be more difficult in small towns that tend to be car centric) |

Pricing

Parking fees are a common tool to manage parking demand. They can be used in areas where there are high demands, or where parking is for a particular usage (short term rather than long term). While parking fees can be contentious, revenue can be put back into the transport system to make improvements in a way that is transparent to road users. It is important to note that parking that does not have fees does not mean it is 'free'. Rather the cost of providing parking is met indirectly through rates.

Parking fees can also be used alongside time restrictions to promote a turnover of car parks. For example, parking could be free for the first 30 minutes, but any duration over that incurs a parking fee which increases over time and can increase incrementally.

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> • Very effective in managing demand, and increasing parking turnover • Generates revenue which can be re-invested in the transport system or other public services • Fees can be flexible over time, changing with demand – or could apply on certain days or special events | <ul style="list-style-type: none"> • Can be difficult/unpopular to instigate when the public is accustomed to free parking • Can cause equity concerns (wealthier people more able to pay for parking) • There is a cost to introduce parking fees as it requires a system to collect parking fees, additional signage, and must also be enforced |

Time restrictions

Time restrictions already operate in Taupo town centre. **Figure 1.1** shows that most of the time restrictions in the central area are P60, further out of town they are P120 and P150, and parking on the fringe of town has no time restrictions. This structure ensures that parking is prioritised towards shoppers and visitors in the central area, and commuters on the fringe of the town. The principle is the longer you stay, the further you walk. The exception to this is the Council owned off-street car parks which are relatively central but have no time restrictions, meaning that the occupancy of these car parks are high throughout the day and leaves little opportunity for shoppers or tourists to park in these areas.

It is expected that as demand for short term parking increases in the central area, it takes over the areas of the unrestricted parking. It could also be considered to convert some of the off-street parking to include time restrictions. If this leads to commuters parking in residential areas, a residents only parking zone could be established to ensure that sufficient parking is available for residents.

To assist in applying time restrictions, the following proposed hierarchy for parking users could be enforced for the town centre. The hierarchy would guide the type of time restriction that receives the greatest priority. It does not mean they receive the most parking, but is more a matter of location and priority.

- 1) Mobility parking (for people with a disability)
- 2) Reserved parking (bus stops, loading zones, taxi)
- 3) Short term parking (shoppers and visitors) – this could be further broken down into P30, P60, P90 etc.
- 4) Commuter/employee all day parking
- 5) Residents parking (highest priority in residential areas)

If there is demand, or a strategic desire to promote it, parking can also be allocated to car share schemes, park and ride, carpooling or electric vehicle charging. For example, it is now becoming more common for airports to provide dedicated parking areas for Uber.

| Pros | Cons |
|--|---|
| <ul style="list-style-type: none"> • Already in place, the public is familiar with it • Can easily promote certain behaviours • Is effective when it is enforced • It is available to everyone • Little cost to make changes or additions | <ul style="list-style-type: none"> • Can result in unwanted behaviours (such as moving the car when the time restriction hits through the day, resulting in increased vehicle circulation within the busy areas of the town, potentially contributing to congestion) • Proliferation of signs can be unattractive, and cause confusion • Requires a high level of enforcement to ensure compliance |

Increased infrastructure

When there is higher parking demand than supply, more parking infrastructure may be required. In Taupo, a new off-street parking building has been mooted to provide more supply. As noted earlier, current demand forecasting suggests that this will not be required in the short term.

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> • Can provide significant additional capacity • Can mean that on-street parking can be reduced or converted to other uses | <ul style="list-style-type: none"> • Extremely expensive • Promotes increased car usage (as opposed to sustainable modes of travel) potentially resulting in other network issues such as congestion • Usually quite an unattractive land use in a central area • Locates significant supply in just one area • Recent examples have been unsuccessful in other towns |

Wayfinding

Wayfinding doesn't affect the supply or demand for parking, however, it helps to ensure a better utilisation of parking if people, particularly visitors, are easily directed to where parking is available. This could be static signs indicating the location of car parking, or electronic signage (VMS) that includes the number of car parks available (such as seen in Wellington). Effective wayfinding can also reduce the amount of circulating traffic looking for parking.

| Pros | Cons |
|--|---|
| <ul style="list-style-type: none"> • Can be introduced cheaply (and with more expensive options available) • Can reduce circulating traffic • Makes the visitor experience more pleasant if they can quickly find a car park • Can be used for specific events | <ul style="list-style-type: none"> • Has been unsuccessfully trialled in Taupo • Electronic versions require infrastructure and ongoing costs • Additional signage |

Enforcement

Enforcement is critical to any parking management approach. Taupo has parking enforcement already, and should continue to do so.

| Pros | Cons |
|--|--|
| <ul style="list-style-type: none"> • Ensures parking management techniques such as time restrictions and parking are complied with • Can ensure that parking is safe • A source of revenue that can be reinvested in the transport system | <ul style="list-style-type: none"> • Can be unpopular with the public |

District Plan parking requirements – long term

Taupo's District Plan does not currently require new developments to provide parking within the town centre, nor does it restrict it. This means that developments in the town centre generally rely on council provided car parks for staff, customers and servicing. District Plan parking requirements are very common around New Zealand. The most common mechanism is that a development must provide a minimum number of car parks per floor area (or other similar metric) based on a specific land use. This reduces the demand for on-street parking around a development, and ensures that the cost of providing for parking is met by the people benefiting from the parking rather than meeting the costs through rates. However, this mechanism can result in oversupply of parking, can encourage car dependency and associated poor urban outcomes, and some Councils have moved away from this approach. Other options are parking maximums or to restrict parking entirely, or allow parking reduction factors which reduces the minimum parking requirement if specific conditions (such as the development being in close proximity to a bus stop serviced by frequent routes or a cycleway) are met.

| Pros | Cons |
|---|--|
| <ul style="list-style-type: none"> • It allocates the cost of parking in a fairer way • It shares the requirement to provide parking with the private market • Can reduce the demand for on-street parking | <ul style="list-style-type: none"> • District Plan process is very slow to incorporate new rules • District Plan rules will only apply to new developments, and would take a long time to have an impact on parking outcomes • Can mean a proliferation of parking if every property provides its own parking |

District Plans can also encourage the use of cycling by requiring that cycle parking is provided on new developments, as well as end of trip facilities such as lockers or showers for those who have cycled to work.

Working with companies – incentives / travel plans

Travel plans can be a tool to help reduce the demand for parking by promoting other modes of transport. Some councils incentivise employers to prepare travel plans that encourage their staff to walk, cycle or use public transport. Travel plans can also be required through the District Plan as a resource consent condition of approval. A travel plan may help people choose their route to work, or provide discounts for equipment or on fares.

The council could also work with companies that own parking to encourage the sharing of parking as discussed earlier in the note.

| Pros | Cons |
|---|---|
| <ul style="list-style-type: none"> • Can encourage behaviour change with relatively low cost • Can be seen as a positive outcome when the Councils works together with private organisations • Can reduce the demand for all day parking in the central area | <ul style="list-style-type: none"> • May have limited uptake |

Parking precincts

Parking precincts could be developed to provide for specific users in specific areas of Taupo. For example:

- Visitor parking precinct – Story Place, Ferry Road
- Short term shopper precinct – Central area bordered by Tongariro Street, Spa Road, Lake Terrace and Titiraupenga Street
- Long term parking precinct – Titiraupenga Street to Kaimanawa Street, Redoubt Street and north of Spa Road

Each of the precincts may have a different parking hierarchy as referred to earlier in the note. Wayfinding could be used to ensure that people find the parking precinct most suited to their trip purpose.

| Pros | Cons |
|---|--|
| <ul style="list-style-type: none">• Can be achieved with relatively low cost• Can be user friendly, especially when combined with Wayfinding | <ul style="list-style-type: none">• Some areas may have competing demands, so one precinct doesn't necessarily apply |

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