Attachment 3 - Bridge Road Tourist Area - Public Parking Options
(Total Pages=99)

City of Launceston

Kings Park / Bridge Road Area Parking Study

February 2015

This report has been prepared by GHD for City of Launceston and *may only be used and relied on by City of Launceston for the purpose agreed between GHD and the City of Launceston as set out in this report.*

GHD otherwise disclaims responsibility to any person other than City of Launceston arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by City of Launceston and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Table of contents

Table index

Figure index

Appendices

1. Introduction

1.1 Background

GHD was engaged by the City of Launceston to undertake a study of the Bridge Road / Kings Park area with the primary purpose to assess the current level of demand for parking in the area against the existing supply, and to provide recommendations for better management of existing parking facilities and potential options for increasing the total supply of parking.

1.2 Project Scope

The project scope included:

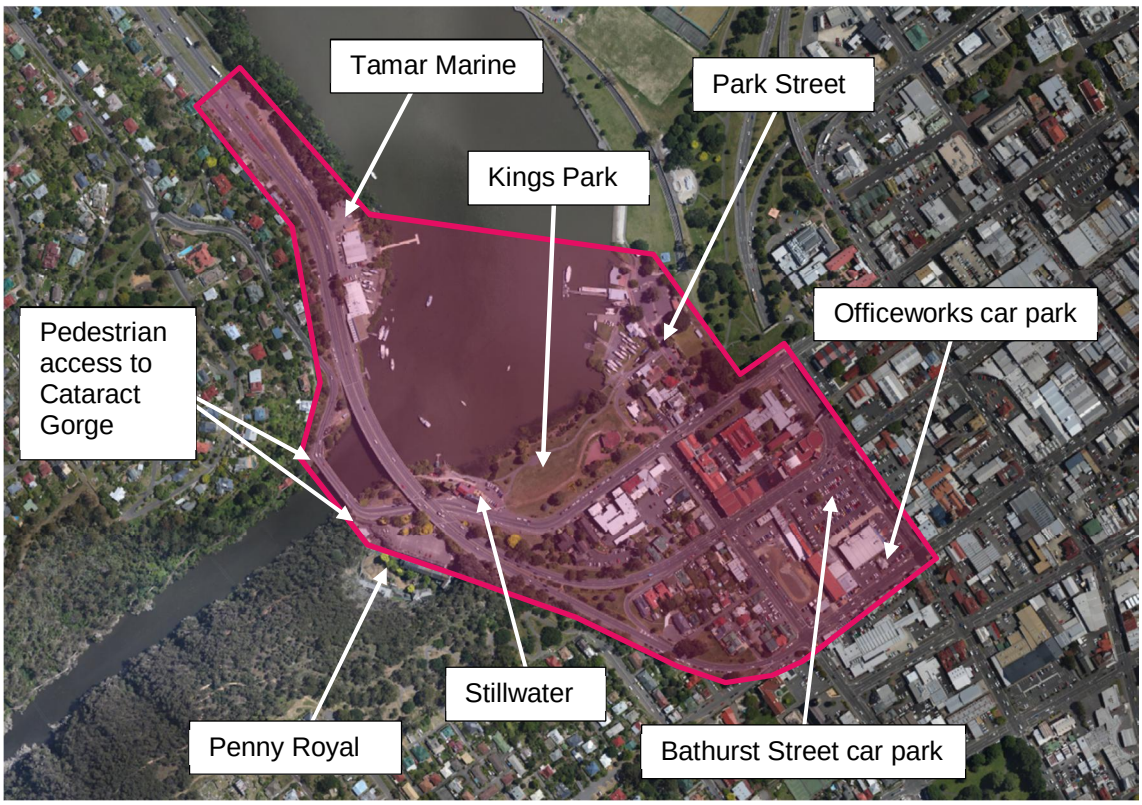
- Consultation with businesses and major traffic and parking generators located within the study area in order to determine their parking needs and to generate discussion around potential options.
- Comprehensive parking surveys of all publicly available parking within the study area, including on-street and off-street parking as well as informal parking.
- Assessment of parking need within the study area based on the results of consultation with local businesses, discussion generated as part of a workshop, parking surveys and an overview of existing time limits and user restrictions.
- Assessment of pedestrian and cycling linkages between major car parks and other parking areas and key activity generators within the study area (in particular the Cataract Gorge) and provide recommendations for additional way finding or other signage that should be installed.
- Assessment of the locations of bus stops and bus parking areas, including Metro services, Council's Tiger Bus and tourist coaches, and provide recommendations to ensure a high level of traffic performance, passenger access and road safety.
- Identification of further opportunities to encourage alternative transport modes for travel to, from and within the study area, such as walking, cycling and public transport, considering items such as pedestrian connectivity and bicycle parking.
- Assess and develop options for the improvement of parking supply and access within the study area, including preparation of preliminary concept plans.

1.3 Study Area

The study area is bounded by Bathurst Street and Brisbane Street, and encompasses Park Street, Kings Park, Bridge Road and the Tamar Marine laneway. It includes several publicly available open air car parks, including Penny Royal, Bathurst Street car park, Park Street car park and Tamar Marine, as well as short, medium and long-term on-street parking.

The study area and key features are presented in Figure 1.

Figure 1 Study Area and Key Features



Base image source: LISTMap, DPIPWE

1.4 Assessment Methodology

The assessment involved the processing of data from a wide range of inputs to produce an estimate of total level of parking demand in the Study Area and the temporal variation in demand.

Inputs

Parking surveys were undertaken on Thursday 6 November, Friday 7 November and Saturday 8 November between the hours of 7:00 am and 8:00 pm of all publicly available parking within the Study Area. The surveys recorded:

- Parking space occupancy,
- Duration of stay,
- User restrictions, and
- Time limits.

Noting that parking surveys measure *use* rather than *demand,* further assumptions were made relating to the anticipated demand for parking in the area based on standard parking rates and other guidelines.

Consultation with local business operators was undertaken to gain an understanding into the current parking and access related issues that are experienced. The feedback obtained from consultation formed a key input into the study.

A workshop was held on 27 November 2014 with Council staff from a range of disciplines including parking, traffic engineering, planning and parks, as well as representatives from Cityprom and Launceston Flood Authority.

Other key inputs to the study included the physical, operational and financial constraints which would influence the ability to provide additional parking.

Data Processing

The spatial distribution of parking capacity, parking space occupation and duration of stay was determined based on the current use (from parking surveys) and the potential additional demand (from assumptions and consultation). From this, a time-demand profile of parking within the Study Area could be developed.

Outputs

The key outputs from the study included a summary of potential improvements to the management of existing parking, an estimate of the additional parking which is considered reasonable to provide, and potential options for increasing the aggregate parking supply within the Study Area.

1.5 Document Review

Several documents were reviewed through the course of this study.

Penny Royal Redevelopment – Stage 1A and 1B, Traffic Impact Assessment (GHD 2014)

The purpose of the study was to assess the traffic impacts of the proposed redevelopment of the Penny Royal complex at 1 Bridge Road, Launceston, including assessment of traffic generation, vehicular access, parking supply and demand, and pedestrian and cyclist routes.

The report concluded that the proposal would not have significant detrimental impacts on the operation of the surrounding road network in terms of traffic efficiency and road safety; however there could be some demand for parking in the surrounding area, in addition to that contained on the site, of up to 69 customer vehicles during peak times.

It is noted that Council approved a planning permit for the development subject to the recommendations of the traffic impact assessment at its meeting on 13 October 2014 and resolved to address parking supply and demand in the wider area holistically.

Parking and Sustainable Transport Strategy for the City of Launceston (Luxmoore Parking Consulting 2009)

The purpose of the study was to review the current objectives and planning regulations relating to parking and sustainable modes of transport within the Launceston Central Activities District (CAD), in which the majority of the study area for this present study lies. Several options and initiatives were considered appropriate including:

- Regulating users and limiting the types of vehicles that may use certain parking spaces
- Specifying the allocation of parking ratios for particular type of developments such as customer or staff parking (short or long term parking)
- Favouring higher value uses – such as for service vehicles, deliveries, customers and access for people with disabilities
- Encouraging remote parking by offering benefits to commuters to encourage them to use alternatives to a car
- Pedestrian improvements
- Reducing minimum parking requirements for developers in certain situations
- Introducing a cap on the maximum number of spaces that may be provided in a specific area.

The strategy provided an action plan consisting of parking initiatives, regulatory reforms, funding mechanisms, cycling and walking initiatives, and public transport initiatives with associated timeframes for implementation.

Launceston City Council Pedestrian Strategy (Launceston City Council 2013)

The Pedestrian Strategy outlines the key walking routes in Launceston in a hierarchical system along with minimum design standards, such as width, lighting and road crossing opportunities, which should apply to each class of footpath.

The footpath along Bridge Road, connecting from Kings Park to Cataract Gorge track, is defined as a Primary Route in the Strategy. Similarly, the pedestrian links along the water's edge to the northern West Tamar municipal boundary are classified as Secondary Routes.

Greater Launceston Metropolitan Passenger Transport Plan (Department of State Growth 2014)

The Greater Launceston Metropolitan Passenger Transport Plan is a current initiative being undertaken by the Department in consultation with Launceston metropolitan councils and passenger transport service providers. The key objectives of the project are:

- Shared understanding of existing land use and household travel patterns,
- Confirmation of existing passenger transport challenges and opportunities in Greater Launceston,
- Identification and agreement on likely areas of demographic change, and changes in household travel patterns, to 2030,
- Identification and prioritisation of projects capable of contributing to the achievement of the Framework objectives, and
- Agreement between major stakeholders on the recommendations of the Passenger Transport Plan and the high priority actions for improving the passenger transport system.

A Background Report, describing the current passenger transport system and the factors that influence its use, and a Problems Identification Summary Report, which provides a summary of the challenges and problems across the passenger transport system, have been developed. The Draft Greater Launceston Metropolitan Passenger Transport Plan is currently under development based on the material identified in the Background Report and the Problems Identification Summary Report.

1.6 Report Structure

This report is structured as follows:

- **Section 2** outlines the existing parking inventory and the current level of parking utilisation determined by examining parking survey results
- **Section 3** includes a strategic assessment of the need for parking in the precinct, balancing the needs of various land uses including recreation, tourism, business and retail, education and employment
- **Section 4** contains a summary of the options development process including a full list of options, a rapid multi-criteria analysis, concept design and cost estimate.
- **Section 5** reviews access arrangements to, from and within the Study Area by transport modes other than private car.
- **Section 6** provides a summary of the investigations undertaken and a concise list of recommendations for the improvement of parking within the Study Area.

2. Existing Car Parking

2.1 Strategic Context

Some of the key parking and activity generators located within or near the Study Area are described below:

- Cataract Gorge is one of the largest attractors of recreation and tourism in the Launceston region. Council has recently launched the Vision 2030 Cataract Gorge Reserve and Trevallyn Nature Recreation Area project aimed at improving facilities and thereby increasing visitation to the area.
- Launceston College currently has an enrolment of approximately 1,400 students and this will rise along with the population growth rate (approximately 0.7%) to an estimated 1,500 by 2024. Approximately 20% of students own a personal car with some proportion of these desiring parking throughout the day.
- In October 2014, Council approved the first stage of the Penny Royal Redevelopment, including a restaurant and cafes as well as a tourism focussed development. Future stages of the Penny Royal Redevelopment may include a new chair lift and tramway connecting to Home Point.

Future residential development in the growth areas of the West Tamar region (including Riverside and Legana) and Trevallyn will result in increased traffic volumes within the Study Area and increased competition for the limited parking available. While there is an already high demand for parking in the area, further development will increase this demand. There is a need to better manage existing parking and provide additional parking to cater for future demand.

2.2 Existing Parking Inventory

For the purpose of this assessment, the study area was divided into 19 individual zones comprising public on-street and off-street parking. The zones include a range of different parking controls including unrestricted and time limited parking, as well as some metered and voucher parking. The full existing parking inventory is provided in Appendix A to this report.

Excluding reserved and “special use” parking spaces (for example, boat trailers, bus zones and loading zones) there are currently a total of 812 on-street and off-street parking spaces within the Study Area including:

- 125 time limited parking spaces (3P and less),
- 372 voucher parking spaces (3P and long-term), and
- 315 unrestricted parking spaces.

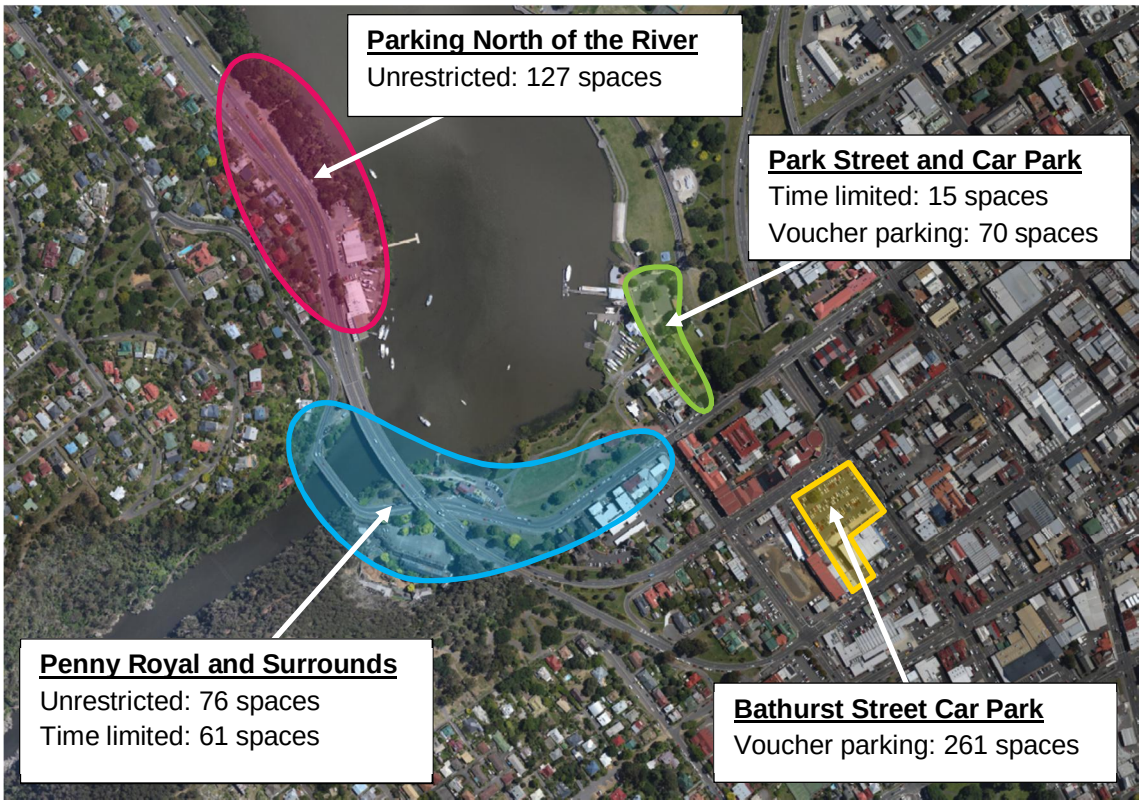
Note that most time limits apply only on weekdays (Monday to Friday) and there are a significantly higher proportion of unrestricted parking spaces on weekends. In the interest of simplifying the analysis, the individual parking zones that were surveyed have been aggregated into four main parking areas. These are:

- Penny Royal and Surrounds 137 spaces
- Parking North of the River 127 spaces
- Bathurst Street Car Park 261 spaces
- Park Street and Car Park 85 spaces

The remaining 202 parking spaces, which includes on-street parking on Margaret Street, West Tamar Highway (outbound) and the eastern end of Paterson Street are included in this analysis but have not been examined in detail.

The existing parking inventory in each of these areas is presented in Figure 2.

Figure 2 Existing Parking Inventory



Base image source: LISTMap, DPIPWE

Other supply related statistics of note include:

- Clearways apply on Margaret Street southbound, between Paterson Street and Brisbane Street, during the morning and evening peak and on Paterson Street eastbound, on approach to Margaret Street, during the morning peak.
- Voucher parking is available at Park Street, with 3P restrictions, and at Bathurst Street Car Park with no time restrictions. There are meters on Paterson Street, east of Margaret Street, however all other parking in the area is free.
- The majority of time limited parking within the Penny Royal and Surrounds area is subject to a 3 hour limit (approximately 60%) with some select areas of 2P, 1P 1/2P, 1/4P and 5 min parking.
- There is an undersupply of accessible parking within the Study Area with only 4 dedicated spaces provided, representing around 0.5% of the total parking supply. Accessible parking should generally represent 1-2% of the overall supply in an area.

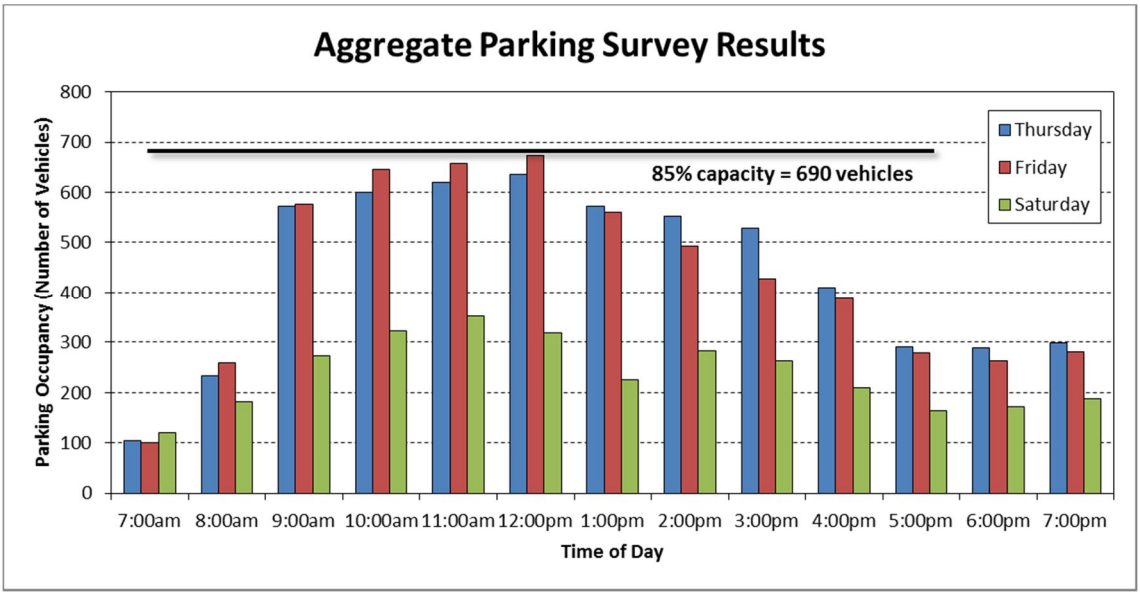
2.3 Parking Surveys

Surveys of all public parking spaces within the Study Area were undertaken on Thursday 6 November, Friday 7 November and Saturday 8 November, between the hours of 7:00 am and 7:00 pm. The surveys recorded the location and partial number plate of all vehicles parked within the Study Area at hourly intervals to obtain a time-of-day profile of parking occupancy and duration of stay. The results of the surveys are briefly summarised in the following sections.

2.3.1 Aggregate Parking Utilisation

The total parking occupancy within the Study Area is presented in Figure 3. Note that the practical capacity of a parking system, particularly for short-term parking, is typically considered to be at 85% of the total capacity accounting for parking turnover and vehicles searching for parking spaces.

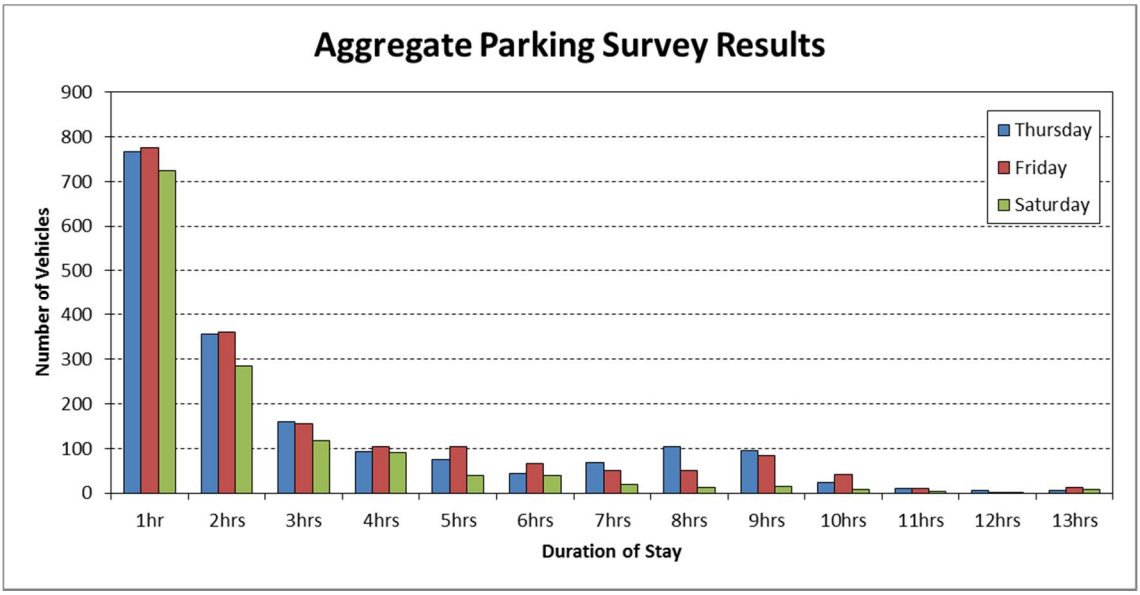
Figure 3 Aggregate Parking Survey Results (Parking Occupancy)



From Figure 3, it can be seen that the overall parking occupancy within the Study Area approaches 85% capacity on weekdays between 10:00 am and 12:00 pm, slowly falling away during the afternoon. The significantly reduced parking occupancy on the Saturday demonstrates the impacts of commuter and student parking on the overall parking supply.

A total of 1,803 unique parking events were recorded on the day of the Thursday survey, with 1,814 on the Friday and 1,362 on the Saturday. The distribution of parking stay durations on each of the survey days is presented in Figure 4.

Figure 4 Aggregate Parking Survey Results (Duration of Stay)

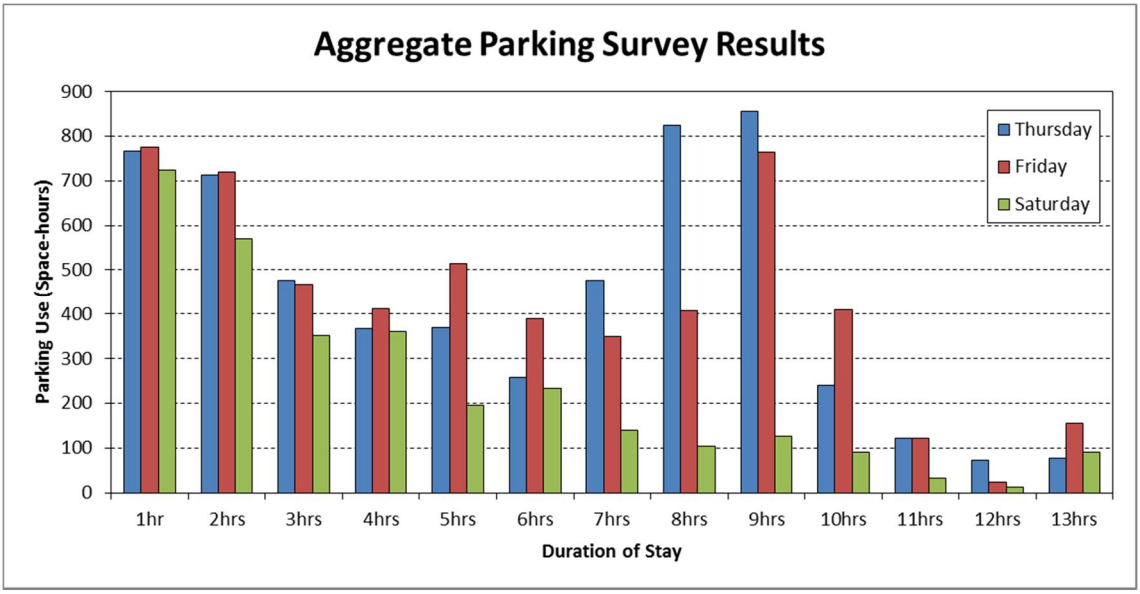


The majority of vehicles parking within the Study Area had a short duration of stay, with around 42-43% of all unique parking events having duration less than 1 hour on the weekday surveys. This was slightly higher for the Saturday survey, with 53% of parkers staying less than 1 hour. Similarly, around 29% of all parkers stayed for longer than 3 hours on the weekday surveys, with this number decreasing to 17% on the Saturday.

It should be noted that a vehicle parking for less than 1 hour would have a significantly lower impact on the overall parking supply throughout the day than a vehicle parking for much longer. This is because a long duration of stay keeps a parking space occupied for a longer period of time, whereas a shorter stay potentially allows for many vehicles to use the same space over the course of a day.

Therefore, the total parking use across the day can be measured by considering both the number of spaces occupied and the amount of time they are occupied for. This concept is measured in "space-hours" and the aggregate parking use within the Study Area is presented in Figure 5.

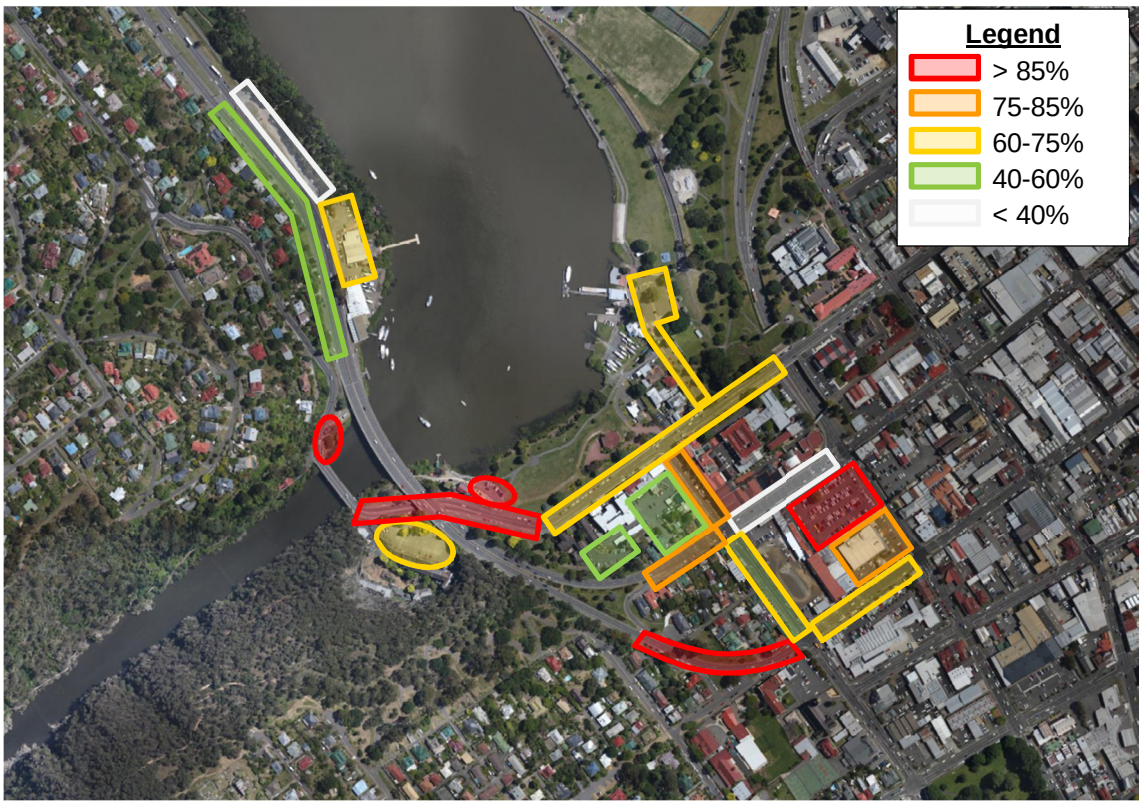
Figure 5 Aggregate Parking Survey Results (Parking Use)



From Figure 5, it can be seen that the use of parking within the Study Area for all day parking (greater than 7 hours) is significant on weekdays, however there is still good use of short to medium-term parking (less than 4 hours) in the area.

It is also important to consider the spatial distribution of parking activity within the Study Area at different times of the day. Figure 6 presents the parking occupancy at 10:00 am on Friday morning, which was identified as one of the peak periods, as a percentage of the available supply in each area.

Figure 6 Parking Occupancy (%) at 10:00 am Friday



Base image source: LISTMap, DPIPWE

Further information on the spatial distribution of parking at different times of the day can be found in Appendix B to this report.

2.3.2 Area Specific Parking Utilisation

Parking in the Study Area has been separated into four key parking areas in order to simplify the analysis. These are:

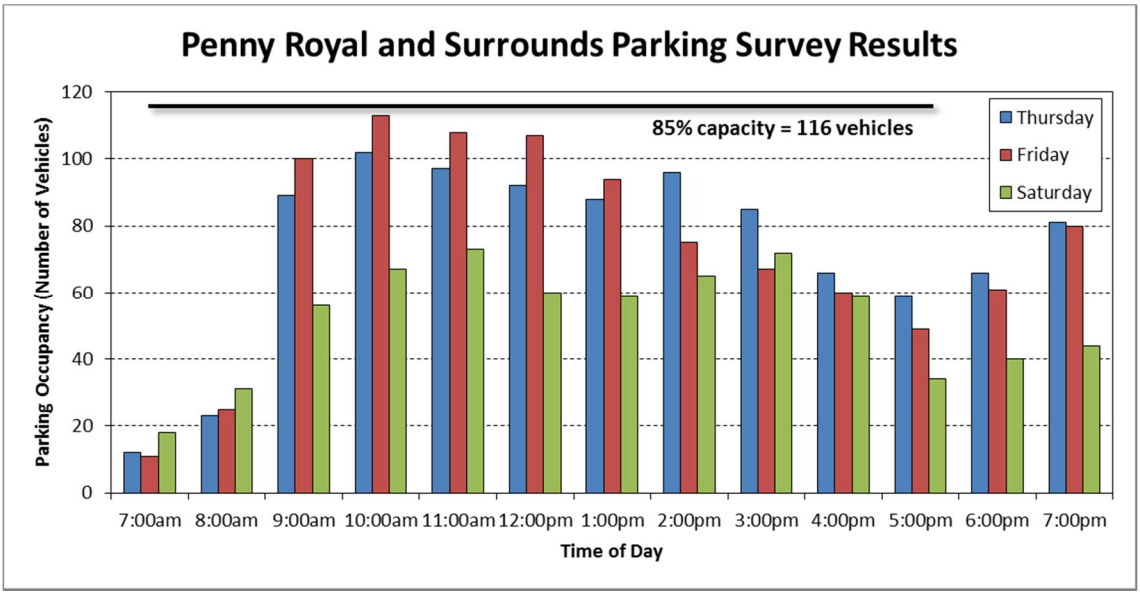
- Penny Royal and Surrounds
- Parking North of the River
- Bathurst Street Car Park
- Park Street and Car Park

Each of the above areas is examined in further detail in the following sections.

Penny Royal and Surrounds

This area encompasses the Penny Royal (quarry site) car park, Stillwater car park and on-street parking along Trevallyn Road, Bridge Road and Paterson Street (west of Margaret Street). Figure 7 presents the parking occupancy in this area throughout each of the days surveyed.

Figure 7 Penny Royal and Surrounds (Parking Occupancy)

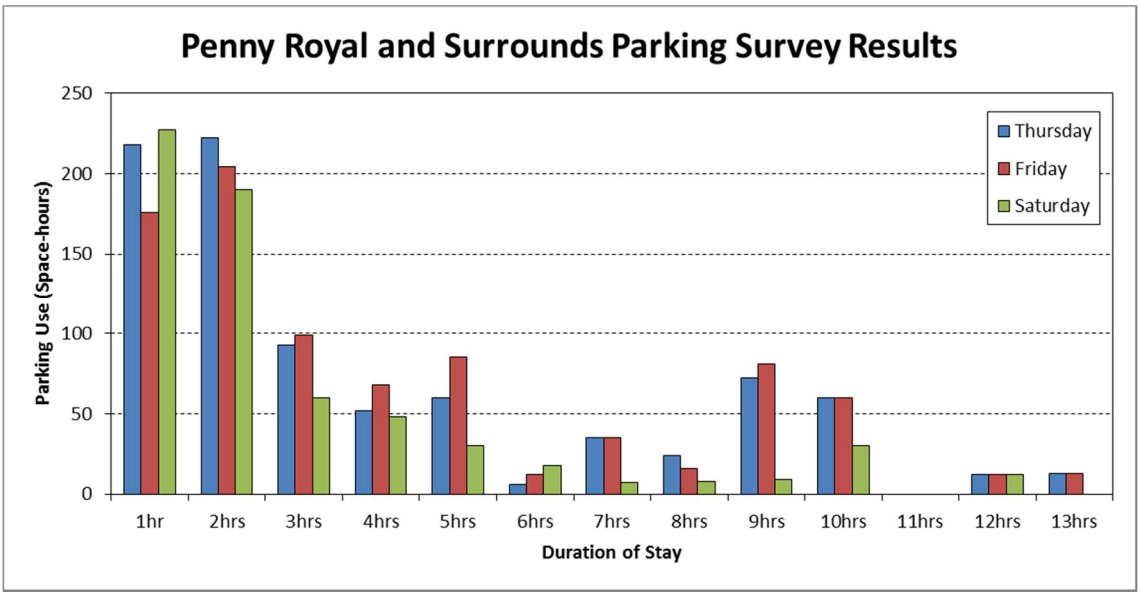


From Figure 7, parking is relatively well utilised throughout the day, approaching the 85% capacity on the Friday in the mid-morning, and dropping off through the afternoon. It is interesting to note that parking activity increases into the early evening, which is likely associated with recreation at the Gorge, restaurant dining in the area and motel patrons returning for the evening.

It is further noted that much of the spare capacity in this area is located within the Penny Royal (quarry site) car park, along the Penny Royal apartments frontage, which is parking not necessarily available for use by the general public. The remainder of the area is essentially at capacity for the morning and early afternoon period (9:00 am to 3:00 pm).

The use of parking in this area across the day is presented in Figure 8. Approximately 40% of all parking activity in Penny Royal and Surrounds area is taken up by longer term parking (greater than 3 hours) in the weekday surveys, compared to around 25% on the Saturday.

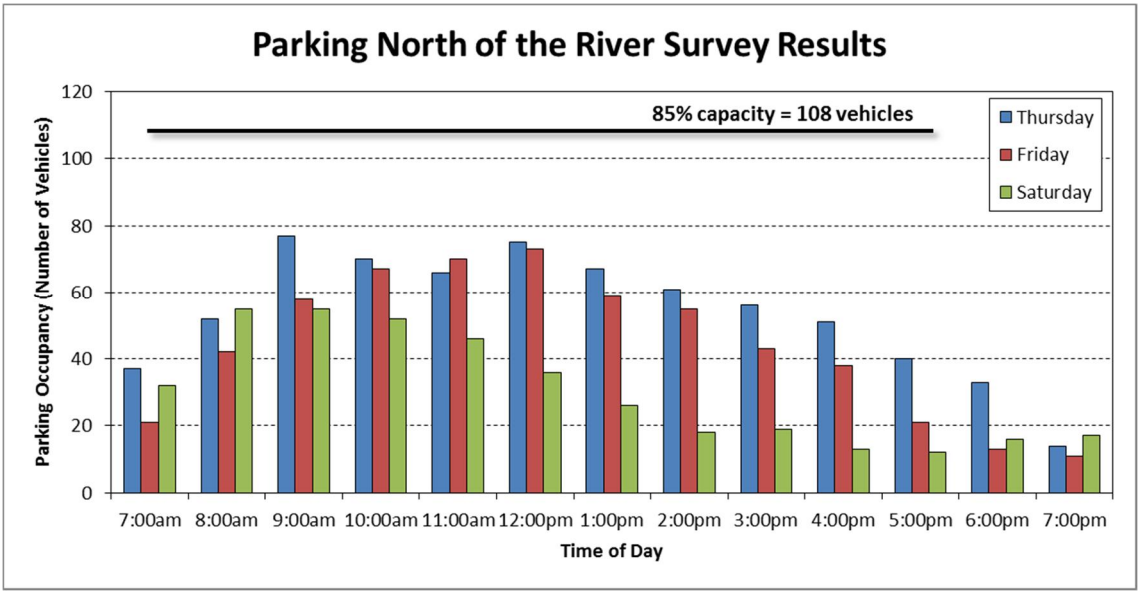
Figure 8 Penny Royal and Surrounds (Parking Use)



Parking North of the River

This area encompasses on-street parking along West Tamar Highway, north of the river, and the Tamar Marine laneway, as well as the West Tamar Walking Trail, Tamar Rowing Club and Tamar Marine car parks. Figure 9 presents the parking occupancy in this area throughout each of the days surveyed.

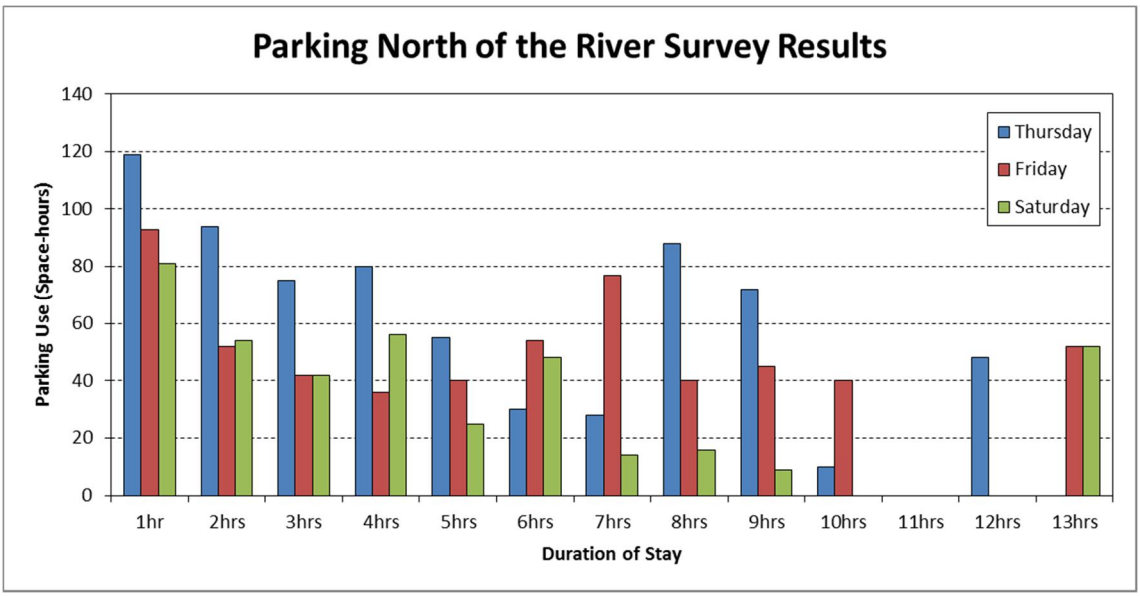
Figure 9 Parking North of the River (Parking Occupancy)



From Figure 9, there is a significant amount of space capacity in the area, with the maximum parking occupancy representing around 60% of the total supply. However, it is noted that parking activity within the Tamar Marine laneway has increased since the surveys were undertaken such that the supply is exceeded and parking is impacting on use of the laneway.

The use of parking in this area across the day is presented in Figure 10. Around 60 to 70% of parking activity in the area is longer term (greater than 3 hours) on the weekday surveys, with the majority of this use being stays greater than 6 hours. As demonstrated below, there is a general trend of shorter term parking on the Saturday.

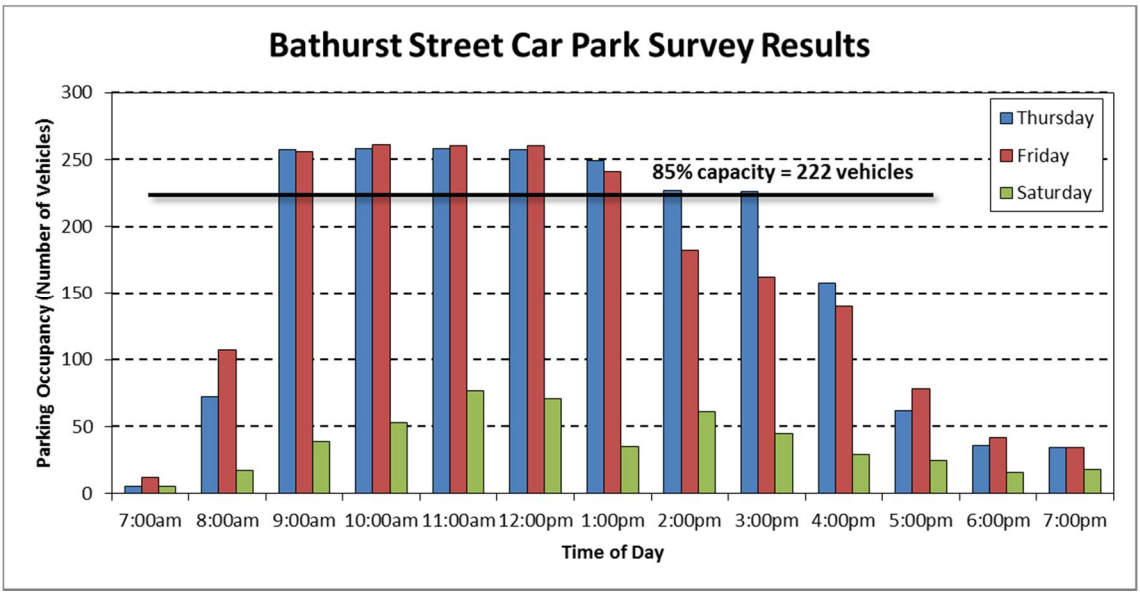
Figure 10 Parking North of the River (Parking Use)



Bathurst Street Car Park

The Bathurst Street Car Park contains 261 parking spaces, including 2 accessible parking spaces. Figure 11 presents the parking occupancy in the car park throughout each of the days surveyed.

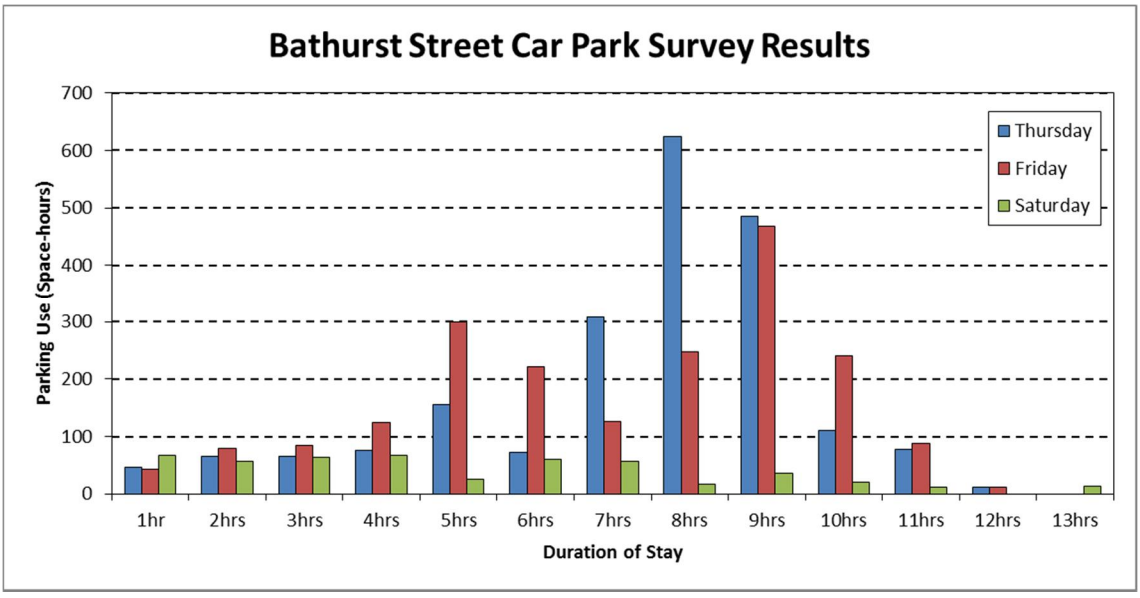
Figure 11 Bathurst Street Car Park (Parking Occupancy)



From Figure 11, it is clear that on weekdays, the car park is essentially full from 9:00 am to 1:00 pm, with parking occupancy dropping off through the afternoon and into the evening. There is a large amount of spare capacity on Saturday, with more than 70% of spaces unoccupied throughout the day.

The use of parking in this area across the day is presented in Figure 12. This profile is indicative of longer term (all day) parking which is encouraged through the pricing structure, where all day parking costs $4.00 per day.

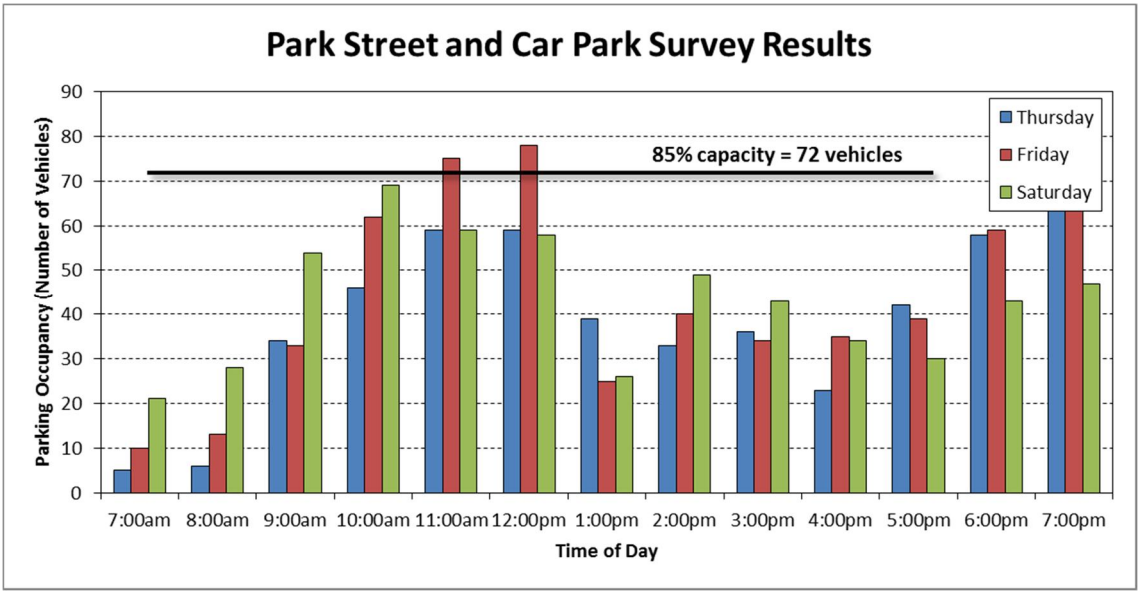
Figure 12 Bathurst Street Car Park (Parking Use)



Park Street and Car Park

This area encompasses on-street parking along both sides of Park Street (90 degree parking on the northern side) and the Royal Park car park, which contains 50 spaces. The majority of parking in this area is voucher controlled with a 3 hour time limit (Monday to Friday). Figure 13 presents the parking occupancy in this area throughout each of the days surveyed.

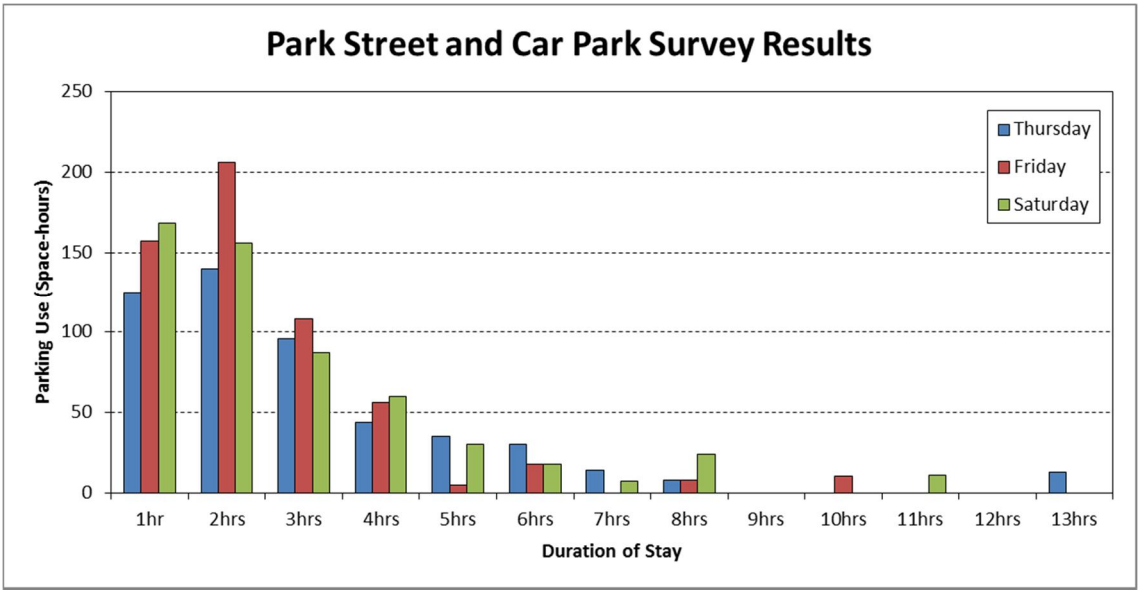
Figure 13 Park Street and Car Park (Parking Occupancy)



From Figure 13, parking occupancy approaches capacity in the late morning period, dropping off significantly through the afternoon, and increasing again in the early evening.

The use of parking in this area across the day is presented in Figure 14. Around 70-80% of all parking activity in Park Street and the car park is short term parking, having duration of stay less than 3 hours, however there is some incidence of longer term parking which may indicate non-compliance with existing parking controls.

Figure 14 Park Street and Car Park (Parking Use)



3. Strategic Parking Assessment

3.1 Key Strategic Parking Objectives

It is acknowledged that it is not considered reasonable, nor is it practical, to provide sufficient parking to cater for the maximum demand for the precinct without compromising the amenity and attractiveness of the area.

Furthermore, any material increase in the parking supply would serve to encourage driving of private cars over other transport modes through an increased expectation of finding a parking space, which would then lead to an increased level of congestion and no real improvement in parking availability.

In light of the above, the key strategic parking objectives for the precinct are as follows:

- *Improve sharing of existing parking facilities through operational changes.*

  The premise behind shared parking is that different land uses generate parking demand at different times of the day. That is, a single parking space will be used by multiple vehicles for different purposes over the course of a regular day. Improved sharing of parking facilities can be achieved through user restrictions and varying time limits.

  In particular, reducing time limits can encourage increased turnover, allowing more unique visitors to the area to use the available parking.

- *Reduce demand for parking within the precinct and improve alternative access methods*.

  The total demand for parking within the Study Area can be reduced through methods such as supply restriction and pricing. Visitors to the precinct should be encouraged to park in a range of locations in the wider area and high quality footpath links and cycle paths should be provided between the Study Area and parking.

- *Modestly increase the total supply of short-term parking in the area.*

  The total supply of parking in the Study Area should not be increased significantly, so as not to artificially increase demand, however there should be allowance to modestly increase the supply of short term parking through expansion of existing car parks or conversion of currently underutilised space to new car parking. The overall shortfall of disability parking in the Study Area should be addressed.

3.2 Balancing the Needs of Land Uses

There are several different types of land use within the Study Area, including recreation, tourism, business and retail, education and employment, each of which have different visitation patterns and parking needs. The needs of various land uses are described in the following sections:

Recreation

Cataract Gorge, along with Kings Park and various walking trails around the Study Area, attract trips by recreational visitors to the precinct. Recreational visitors include all types of users including walkers and joggers, parents with prams, dog walkers and mobility impaired people. While some would be willing to park further away and walk or jog a small distance to the Study Area, provided there are good footpath connections, most recreational visitors desire parking much closer.

The parking demand for recreational use is typically spread throughout the day with minor peaks in the late morning (10:00 am to 12:00 pm) and early evening (5:00 pm onwards) periods, with duration of stay typically being short to medium term parking (less than 4 hours).

Tourism

Cataract Gorge attracts a significant number of trips from tourists. The proposed redevelopment of the Penny Royal complex would also generate parking demand associated with tourism. Tourists include all types of users, including families, and typically expect to be able to park near their destination. During the seasonal peak period, however, tourists would not necessarily expect to find the most convenient parking spaces available.

Parking associated with tourism typically peaks during the seasonal holiday period, coinciding with peak visitor numbers to Tasmania, spread across weekends and weekdays. Parking would be medium term (2 to 4 hours) or longer.

Business and Retail

There are a number of stores, restaurants and hotels located along Bridge Road and Paterson Street, within the Study Area, that would attract trips falling under the business and retail category. These uses attract all types of users and have relatively stringent parking requirements with patrons generally expecting to be able to park either right outside, or very close to, their destination.

Parking demand for business and retail use is spread throughout the day, however in considering the demand within the Study Area, being predominantly restaurants, the peak would be during the evening. Short term parking (less than 2 hours) is generally appropriate for these uses.

Education

Launceston College is located within the Study Area and generates a demand for student parking. While most students would be able to walk a moderate distance from their vehicle to the College, increased difficulty with parking may correlate with a lower attendance at classes, and it is therefore important that parking for students remains convenient and relatively close to the College.

Student parking is typically medium to long term (3 hours or more) and peak demand would be during the school hours of 9:00 am to 3:00 pm. After 3:00 pm, the demand for parking would drop off substantially, allowing the parking spaces to be shared with other land uses as required.

Employment

The Launceston Central Activities District (CAD), of which the Study Area forms a small part, generates significant demand for commuter parking. Commuter parking is generally long-term, all day parking with duration of stay greater than 7 hours and high utilisation between the hours of 8:00 am and 6:00 pm.

There is evidence to suggest that some locations within the Study Area are currently being used for long term commuter parking, such as the West Tamar Walking Trail car park and the Penny Royal (quarry site) car park as well as the unrestricted areas of on-street parking. The goal for this precinct is not to provide for long term commuter parking, rather to provide short to medium term parking intended to cater for the specific uses located within the Study Area.

Summary

Table 1 provides a summary of the different parking demand patterns of land uses within the Study Area.

Table 1 Summary of Parking Demand Patterns

Land Use Category	Peak Time of Day	Typical Duration of Stay	Comment
Recreation	Late morning, early evening	Short to medium term (<4 hours)	Parking moderately close to destination (<500 metres)
Tourism	All day during seasonal peak	Medium to long term (>3 hours)	Parking close to destination (<100 metres)
Business/Retail	Mostly evening	Short term (<2 hours)	Parking close to destination (<100 metres)
Education	Morning and early afternoon	Medium to long term (>3 hours)	Parking moderately close to destination (<1 km)
Employment	All day	Long term (>7 hours)	Parking within walking range (<2 km)

3.3 Parking Demand Assessment

There are a few key generators of additional future parking demand which have been identified during the course of this study. These are:

- Launceston College

  The College currently has around 1,400 enrolments with estimated car usage of approximately 20%. Growth in students is generally tied to the population growth rate in the Launceston area. On the basis of a 0.7% p.a. growth rate[1], the College could reasonably expect to reach up to 1,500 students in 10 years, corresponding to an additional 20 students desiring parking in the surrounding area at various times of the day although not all simultaneously.

- Penny Royal Redevelopment

  The *Penny Royal Redevelopment – Stage 1A and 1B Traffic Impact Assessment* (GHD, 2014) states that there would be a peak parking demand for up to 88 spaces on-site and in the immediate area, and up to an additional 69 customer vehicles in the wider network.

- "Sky Lift" Development

  A future stage of the Penny Royal Redevelopment includes the construction of a new "Sky Lift" connecting from the Penny Royal site to Cataract Gorge. While only limited details of the proposal are available at this stage, an allowance of 30 simultaneously parked vehicles has been added to parking demand forecasts to account for this component.

Over time, as these uses attract more visitors to the area, there will be a need to provide additional parking, to better manage existing parking, or to investigate alternative modes of travel, in order to cater for the increasing demand for parking.

In addition to the generation of new parking demand, the level of long-term parking activity which is currently occurring within the Tamar Marine laneway has increased since the

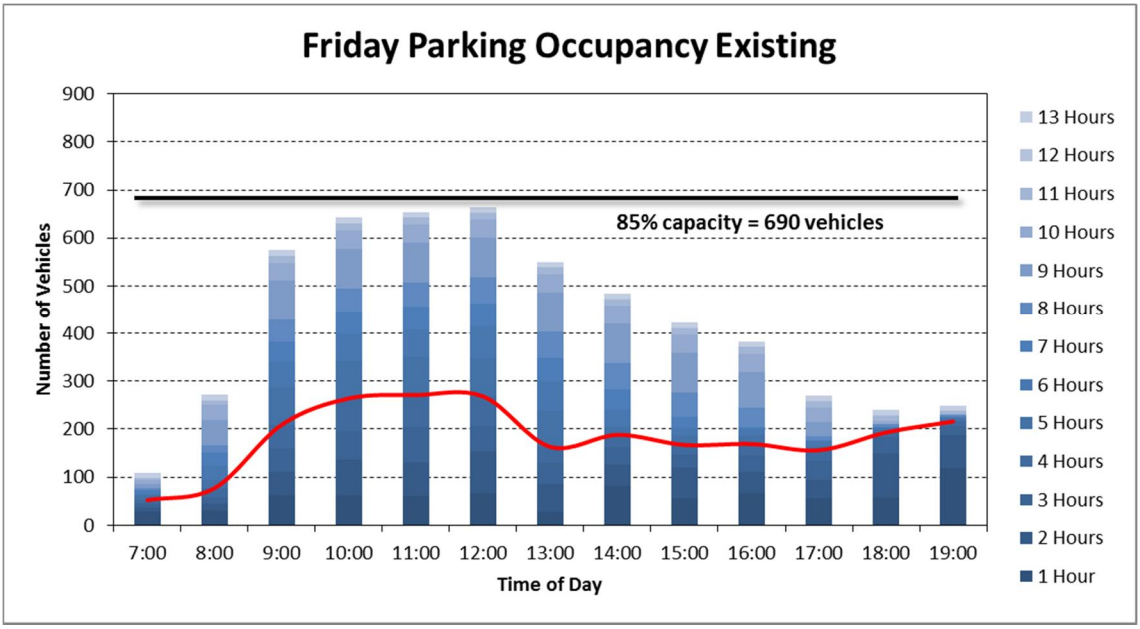
[1] Growth rate sourced from Australian Bureau of Statistics (ABS)

November 2014 surveys were undertaken and should be captured in future parking demand assessment.

3.4 Parking Provision Target

The existing parking occupancy across the whole study area, as surveyed on Friday 7 November, 2014, is presented in Figure 15. The data is broken down by duration of stay and the red line represents the level of short to medium term parking demand (less than 4 hours). Note that, as discussed in Section 2.3.1 of this report, the parking occupancy currently approaches practical capacity (85% of total capacity) between 10:00 am and 12:00 pm.

Figure 15 Existing Parking Occupancy (Friday)

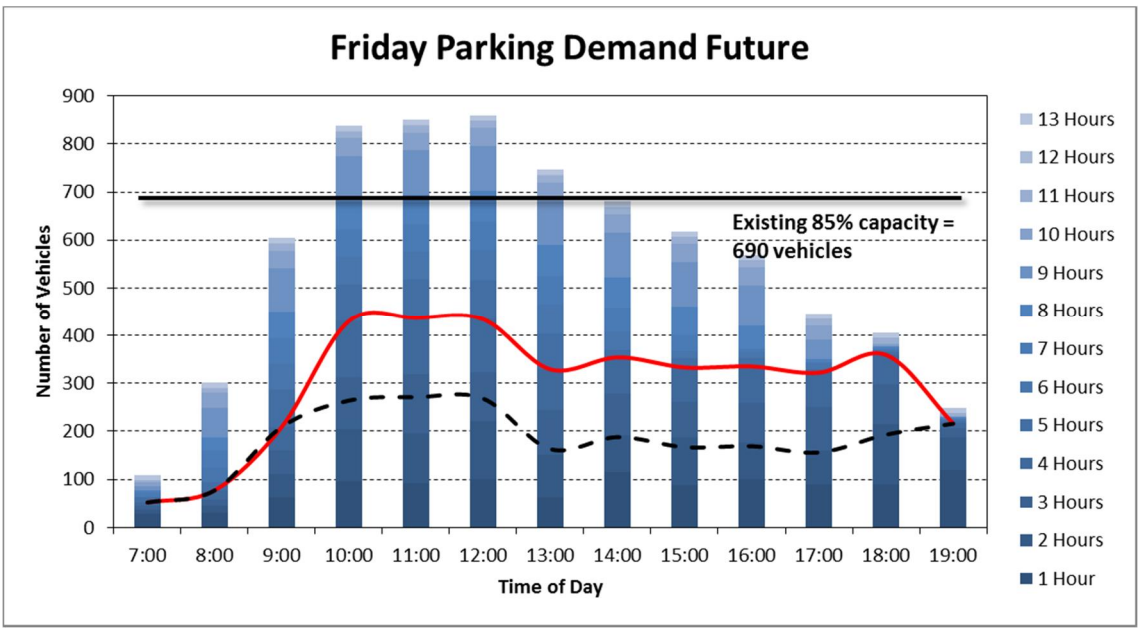


The methodology for estimating future parking demand is as follows:

- Addition of approximately 25 vehicles which are currently parking informally for long durations within the Tamar Marine laneway and were not previously captured during the surveys.
- Removal of long-term parking from Penny Royal (quarry site) car park.
- Addition of approximately 190 vehicles desiring parking for short to medium term duration (less than 4 hours) between the hours of 10:00 am and 7:00 pm to represent Penny Royal redevelopment, growth in Launceston College enrolments and background growth.

On the basis of the above, the estimated future parking demand for the precinct is presented in Figure 16. The red line represents the level of short to medium term parking demand (less than 4 hours) under the future conditions.

Figure 16 Future Parking Demand (Friday)



From Figure 16, the total demand is anticipated to reach around 875 parking spaces, noting that the current supply of parking is 812 parking spaces. A summary of existing and future parking demand is presented in Table 2.

Table 2 Summary of Parking Demand and Supply

Time Restriction	Existing		Future		
	Demand (midday Friday)	Supply	Demand (midday Friday)	Supply (maintain 90% peak capacity)	Parking provision target
Public parking					
≤ 2 hours	124	60	200	222	100
3 - 4 hours	114	134	220	244	350
> 4 hours	341	497	375	417	300
Total	*579*	*691*	*795*	*883*	*750*
Restricted parking (e.g. Penny Royal Mill site, TRC Hotel)					
Total	*85*	*121*	*85*	*121*	*121*
Grand Total	***664***	***812***	***880***	***1,004***	***871***

Table 2 introduces the concept of a “Parking provision target” which is the level of parking supply that is considered reasonable to aim for. Note that this does not necessarily equal the supply required to maintain a parking occupancy less than 90% of total capacity. The parking provision target for each time restriction has been determined as follows:

- Long term parking (> 4 hours)

  From Table 2 there is currently a significant oversupply of long term parking within the Study Area. The demand for long term parking at the peak time (12:00 pm Friday) is approximately 375 spaces compared to the supply of 500. It is recommended that the supply of long term parking be significantly reduced by converting to short and medium term parking.

  Note that some long term parking, in the order of around 120 vehicles, would be displaced away from the Study Area and would need to park elsewhere or these users explore other modes of transport.

- Medium term parking (3 – 4 hours)

  The supply of medium term parking should be increased to around 350 parking spaces in order to cater for the anticipated demand. This can be achieved by converting long term parking to medium term parking. Note that medium term parkers may also use unrestricted parking where available.

- Short term parking (≤ 2 hours)

  The supply of short term parking should be increased to around 100 parking spaces. While the demand for short term parking is higher than this (approximately 200 vehicles), the provision of excess short term parking can preclude some users from parking within the area when short term parking demand is light and medium term demand is heavy. Note that short term parkers may also use medium term and unrestricted parking where available.

Based on the above, it is considered appropriate to seek to increase the total supply of short-medium term parking within the study area by approximately 60 parking spaces and to convert approximately 200 unrestricted parking spaces to short and medium term parking.

3.5 Displacement of Long Term Parking

The recommendation of the previous section of this report to convert approximately 200 currently unrestricted parking spaces to short and medium term parking will result in some displacement of long term parking from the Study Area. While much of the unrestricted parking is currently used for short to medium term duration, there will be a need to provide new long term parking in a relatively convenient location or to provide alternative transport options for long term parkers.

From Table 2:

- The demand for long term parking will reach a peak of approximately 375 parking spaces at midday on the Friday;
- In order to maintain the supply such that the peak capacity is around 90% this would require 417 parking spaces;
- The target provision for long term parking (> 4 hours) within the Study Area is 300 spaces.

Based on the above, there would be a displacement of approximately 120 long term parkers from the Study Area. That is, in order to replace the long term parking spaces that are lost as a result of the recommended changes, around 120 long term spaces (or equivalent) would need to be provided elsewhere.

Note that this only includes parking with duration greater than 4 hours. Those drivers currently parking within the Study Area for between 3 and 4 hours are assumed to adjust their parking duration to fit within the 3 hour time limit rather than be displaced.

4. Assessment of Options

4.1 List of Options

Sections 4.1.1 and 4.1.2 briefly outline the key features and justification for the operational improvements and new infrastructure options that have been identified as part of this study.

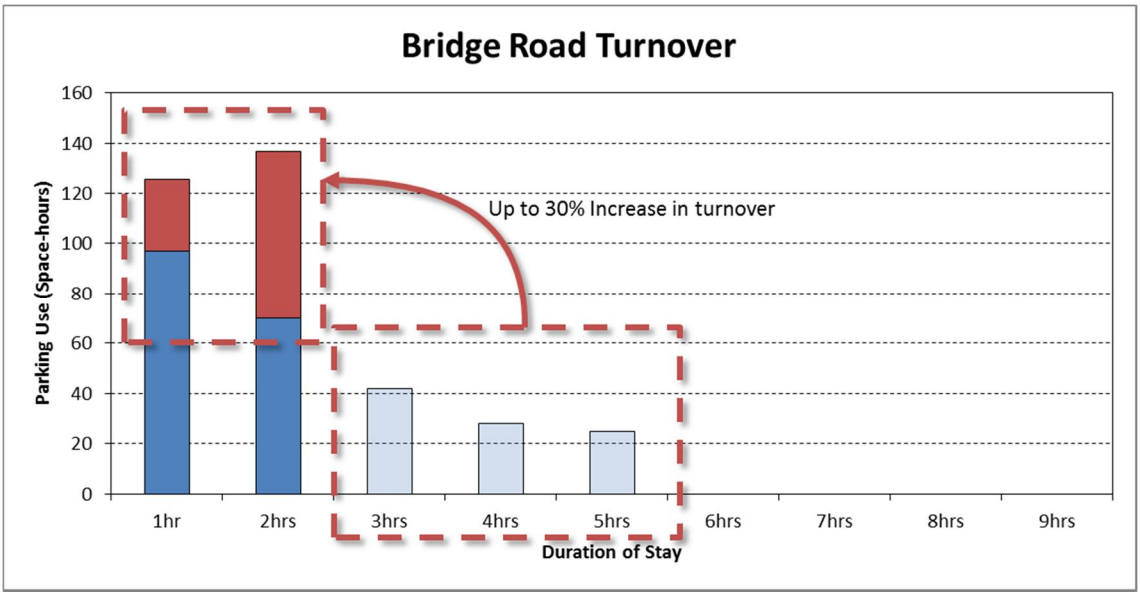
4.1.1 Operational Changes

Option 1 – Reduce Time Limits on Bridge Road

The existing parking use indicates that the majority of existing parking on Bridge Road (around 65%) is used for short stays with duration of 2 hours or less. The survey data also suggests that there is an issue involving compliance with parking controls, with approximately 22% of all parking use (space-hours) recorded exceeding the existing time allowance (typically 3 hours) along Bridge Road and Paterson Street (west of Margaret Street).

Option 1 involves reducing the time limit along Bridge Road from 3 hours to 2 hours. There are a total of 17 parking spaces which would be impacted. The reduced time limit could increase the total parking space turnover by up to 30% based on existing use. This effect is shown graphically in Figure 17 where spaces currently occupied for 3 hours or longer are instead occupied for 1 or 2 hours, allowing more individuals to make use of each space.

Figure 17 Bridge Road Turnover



The reduced time limit should be implemented in conjunction with Option 2, which involves installing parking meters along Bridge Road and Paterson Street. While not necessarily impacting on the total parking supply, there would be an effective improvement in parking turnover due to the improved ability for Council to enforce time limits.

Option 2 – Bridge Road and Paterson Street Parking Meters

As described above, the survey data suggests that around 22% of all parking use (space-hours) exceeded the existing time allowance (typically 3 hours) along Bridge Road and Paterson Street (west of Margaret Street).

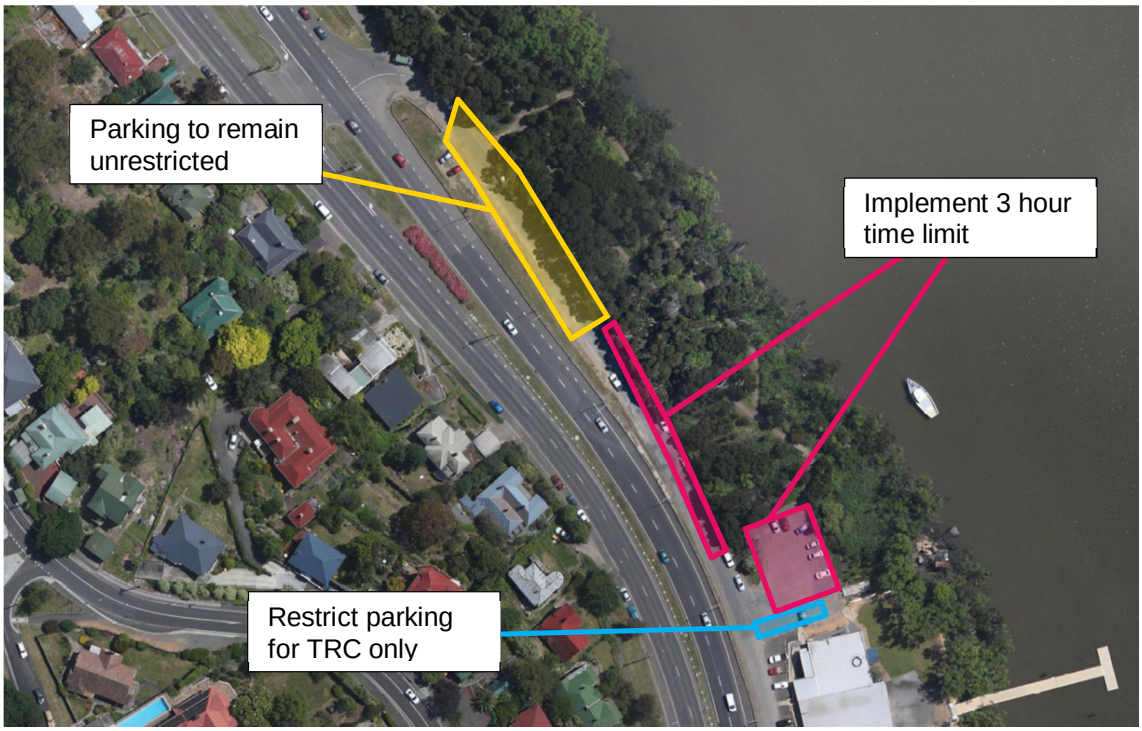
Option 2 involves installing parking meters along Bridge Road and Paterson Street to aid with enforcement of 2 hour or 3 hour time limits. The chosen pricing structure should be carefully considered in order to discourage parking for people visiting areas outside the Study Area (for example, Launceston CBD) while not discouraging parkers from accessing those businesses and services within the precinct.

Option 3 – Tamar Marine Laneway and West Tamar Walking Trail Car Park

The parking survey indicates that the Tamar Marine laneway and the West Tamar Walking Trail car park are currently being used for long-term parking with an estimated 60-70% of all parking use in the area having duration of stay greater than 3 hours on weekdays.

Option 3 involves implementing a 3 hour time limit on Council owned components of the West Tamar Walking Trail car park as well as some of the parallel parking along the Tamar Marine laneway as shown in Figure 18 totalling approximately 30 parking spaces. It is noted that one row of parking within the car park is located on land owned by the Tamar Rowing Club and this parking should be signed for use by the Club to ensure it remains available for their activities.

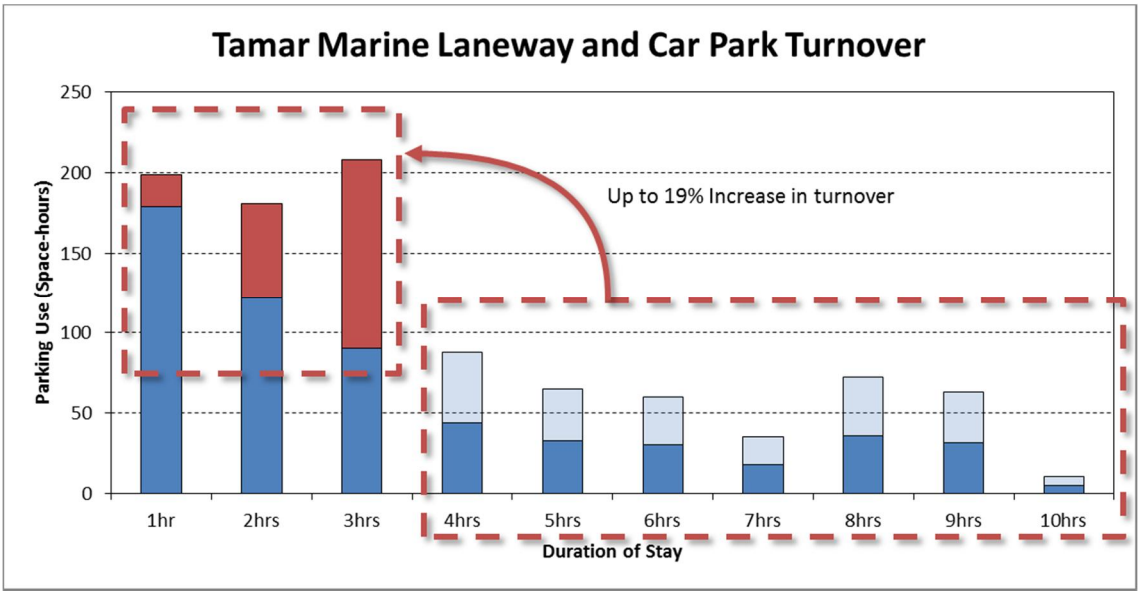
Figure 18 Proposed Time Restrictions



Base image source: LISTMap, DPIPWE

The implementation of 3 hour time limits in the areas shown in Figure 18 would improve parking turnover and aid in serving nearby land uses such as the West Tamar Walking Trail and Cataract Gorge, as well as local businesses in the Study Area. It is estimated that parking space turnover could be increased by up to 19%. This effect is shown graphically in Figure 19.

Figure 19 Tamar Marine Laneway and Car Park Turnover



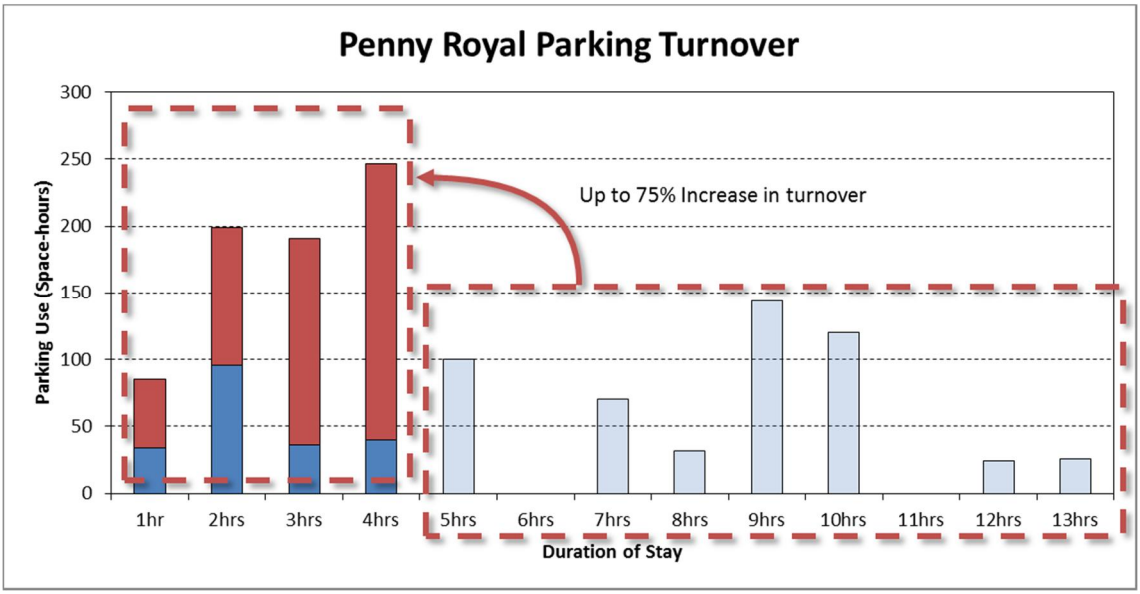
One of the main issues associated with the West Tamar Walking Trail car park, and the Tamar Marine Laneway, is flooding and drainage. Any formalisation of car parking through the implementation of time limits or other design changes would need to be accompanied with appropriate warning signage regarding potential flooding.

It is noted, however, that implementing a time limit would improve the situation compared to the existing conditions as a lower duration of stay reduces the chance that a parked vehicle would be caught by rising water levels.

Option 4 – Penny Royal (Quarry Site) Car Park

All day parking (duration greater than 7 hours) currently makes up around 58% of all parking at the Penny Royal quarry site car park. Option 4 involves implementing voucher parking and a 4 hour time limit (half day) which could increase parking space turnover by up to 75% based on the existing use. This effect is shown graphically in Figure 20.

Figure 20 Penny Royal Car Park Turnover



Option 5 – Introduce Time Restrictions on West Tamar Highway (outbound)

Option 5 involves converting existing unrestricted on-street parking along West Tamar Highway (travelling northbound) to medium term parking (3 hours). This parking is located close to the Cataract Gorge pedestrian entrance and good connection is available to uses within the Study Area via Kings Bridge.

The extent of parking to be converted can be varied. For example, 100 metres would result in approximately 15 spaces being affected and 200 metres would result in approximately 30 spaces being affected. Given the presence of residences along this stretch of road, a Residential Parking Zone (permit zone) may also need to be applied.

Note that the on-street parking along West Tamar Highway that is considered as part of this option is located in a 70 km/h speed zone, which is greater than the urban speed limit of 60 km/h, and as such parking control is the responsibility of the Department of State Growth.

Option 6 – Introduce Time Restrictions at Bathurst Street Car Park

Option 6 involves the conversion of some parts of Bathurst Street car park from unrestricted voucher parking to medium term parking (3 hours). The current breakdown of short to medium parking usage in Bathurst Street car park is as follows:

- Less than 2 hours 5.3%
- Less than 3 hours 8.6%
- Less than 4 hours 12.6%
- Less than 5 hours 20.0%

If one of the four parallel parking aisles within the car park is converted to medium term parking, approximately 50 parking spaces (or 21% of supply) would be affected.

Summary of Operational Improvements

The above options attempt to address the current oversupply of unrestricted parking, and shortfall of short to medium term parking, within the Study Area. Note that the target for conversion is up to 200 parking spaces (see Section 3.4). If all options outlined in this section are implemented the total conversion would be:

- Up to 180 parking spaces converted from unrestricted, or long term, to medium term; and
- 17 parking spaces converted from medium term to short term.

Note that this is at the expense of the long term parking supply which would result in around 40 currently long term parked vehicles being displaced from the Study Area and needing to park elsewhere.

A summary of options is presented in Table 3.

Table 3 Summary of Operational Changes

ID	Description	Advantages	Impacts	Design Considerations	Number of Spaces
1	Convert existing 3P spaces on Bridge Road (total of 17 spaces affected) to 2P	Increase turnover of parking on Bridge Road by up to 30% Increase effective parking supply by around 5 vehicles Short term parking (< 2 hours) is considered more appropriate for many businesses in the area	Longer stays up to 3 hours would be relocated to Paterson Street or other	Existing 1P (5 spaces) and 1/4P (2 spaces) could also be converted to 2P if appropriate	17 spaces
2	Install parking meters along Bridge Road and Paterson Street	Improves enforcement of time limits to ensure adequate turnover of parking Discourages parking on-street to access services outside of the precinct	Payment for parking may discourage potential visitors to the precinct	Chosen pricing structure should be carefully considered not to discourage parkers from accessing businesses and services within the precinct	-
3	Implement 3P restrictions at Tamar Marine laneway and West Tamar Walking Trail car park	Increase turnover of parking in this area by up to 19% Increase effective parking supply by around 15 vehicles	Loss of long term parking for city commuters	One row of parking should be reserved for Tamar Rowing Club Extent of parking to be converted to 3P to be confirmed	30 spaces
4	Implement voucher parking and 4P restrictions at Penny Royal (quarry site) car park	Increase turnover of parking in the car park by up to 75% Increase effective parking supply by around 49 vehicles	Loss of long term parking for city commuters Payment may discourage potential visitors to the precinct	Chosen pricing structure should be carefully considered not to discourage parkers from accessing businesses and services within the precinct	69 spaces

ID	Description	Advantages	Impacts	Design Considerations	Number of Spaces
5	Implement 3P restrictions at West Tamar Highway (outbound)	Parking is located close to Cataract Gorge and other uses in the Study Area via Kings Bridge	Reduction in supply of unrestricted parking for commuters Possible impacts on parking for residents	Consider implementation of a residential parking zone (permit zone)	15 to 30 spaces
6	Implement 3P restrictions in parts of Bathurst Street car park	Parking is located within a reasonable walking distance of uses within the Study Area (approximately 500 metres)	Reduction in supply of unrestricted parking for commuters	Extent of parking to be converted	~50 spaces
				Total number of spaces converted from unrestricted, or long-term, to short-term	**Up to 180 spaces**

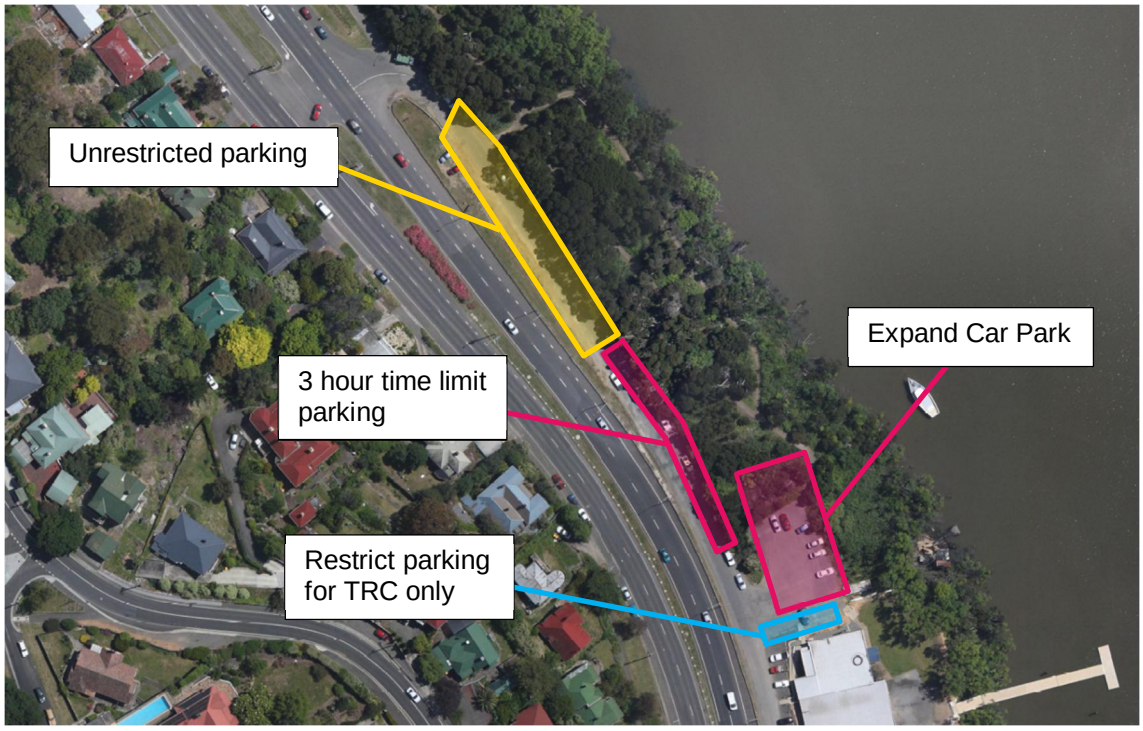
4.1.2 New Short to Medium Term Car Parking Infrastructure

Option 7 – Expand West Tamar Walking Trail Car Park

This option involves expanding the existing West Tamar Walking Trail car park to the north, and realigning the car parking modules, to provide an additional 12 car parking spaces. These spaces should be subject to the same controls as the remainder of the car park (see Option 3 to implement 3P restrictions).

The proposed car park expansion is shown in Figure 21. Note that one row of parking should be reserved for use by the Tamar Rowing Club only.

Figure 21 Option 7 – Expand West Tamar Walking Trail Car Park



Base image source: LISTMap, DPIPWE

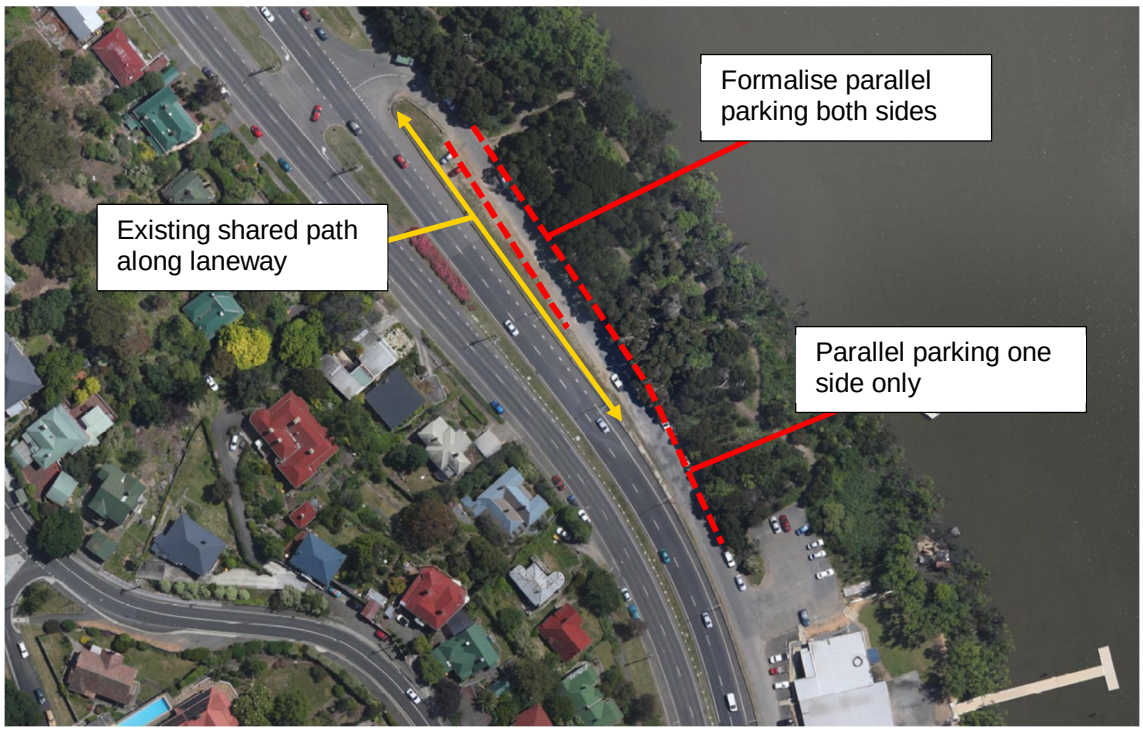
As discussed in Section 4.1.1, one of the main issues associated with the West Tamar Walking Trail car park, and the Tamar Marine Laneway, is flooding and drainage. Any formalisation of car parking through the implementation of time limits or other design changes, such as this expansion, would need to be accompanied with appropriate warning signage regarding potential flooding.

It is noted, however, that implementing a time limit would improve the situation compared to the existing conditions as a lower duration of stay reduces the chance that a parked vehicle would be caught by rising water levels.

Option 8 – Formalise Parking along Tamar Marine Laneway

This option involves formalising parking along the Tamar Marine laneway to ensure efficient use of the available space. These spaces could be subject to a combination of unrestricted and 3 hour time limited parking as discussed in Section 4.1.1. The option is presented in Figure 22.

Figure 22 Option 8 – Formalise Parking along Laneway



Base image source: LISTMap, DPIPWE

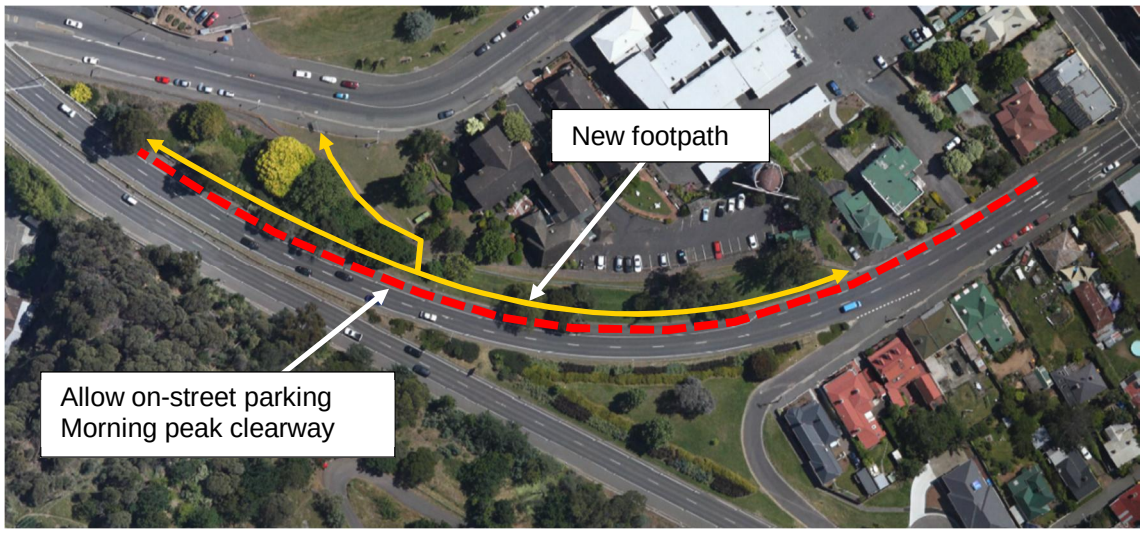
As shown, there is an existing shared path which has recently been constructed along the edge of the Highway. There is a need to provide a clear width of 6.0 metres along the laneway to ensure access by large vehicles including long kayak trailers and occasional truck deliveries.

Parallel parking should be provided on both sides of the laneway until the point where there is insufficient space available to maintain the laneway width of 6.0 metres.

Option 9 – On-street Parking along West Tamar Highway (Inbound)

This option involves reinstating on-street parking along West Tamar Highway travelling towards Launceston, utilising the existing shoulder, and providing a new footpath connection to Bridge Road. A morning peak clearway can be maintained to ensure Highway operation is not impacted. There is space for up to 40 parallel on-street parking spaces to be provided as shown in Figure 23.

Figure 23 Option 9 – Parking along West Tamar Highway (Inbound)



Base image source: LISTMap, DPIPWE

Given the function of the Highway, the curvature of the road and the high traffic volumes travelling into the City along this route, there are several other operational changes, for example speed limit reduction, that may be required in order to ensure a safe environment for on-street parking activity.

Option 10 – Second Level on Penny Royal Car Park (Quarry Site)

This option involves constructing a second level on the Penny Royal (quarry site) car park to increase the total supply. Due to the space requirements of ramps, parking aisles, columns and pedestrian access to the upper level, the option would only increase supply by around 15 parking spaces. The Penny Royal (quarry site) car park is shown in Figure 24.

Figure 24 Option 10 – Second Level on Penny Royal Car Park

Base image source: LISTMap, DPIPWE

Option 11a – New Car Park (90 spaces) at Zig Zag Reserve

JAC Group have proposed a concept for a new 90 space car park associated with the Sky Lift to be located within Zig Zag Reserve, south of the Penny Royal site, and accessed via a new connection to West Tamar Highway. The new car park and access road are shown in Figure 25.

Although it is located just outside the Study Area, the new car park would provide a supply of around 90 parking spaces, with pedestrian connectivity through the Penny Royal site to Bridge Road, available to uses within the Study Area. The proposal will require further investigation including, but not limited to:

- Horizontal and vertical roadway alignment
- Traffic impacts of new access road connection to West Tamar Highway
- Environmental and visual amenity impacts of construction
- Detailed benefit-cost assessment

A preliminary feasibility assessment has been undertaken by GHD in parallel to this current study which has identified several key design constraints associated with the proposal.

Figure 25 Option 11a – New Car Park (90 spaces) at Zig Zag Reserve

Base image source: JAC Group

Option 11b – New Car Parks (60 spaces) at Zig Zag Reserve

JAC Group have proposed an alternative Sky Lift car park option which includes three new 20 space car parks associated with the Sky Lift to be located within Zig Zag Reserve, south of the Penny Royal site. Access to the three car parks would be via Brisbane Street West (Brisbane Way) which is a steep, winding road adjacent to the site, with a new connection to West Tamar Highway. The new car parks and access are shown in Figure 26.

Although located just outside the Study Area, the new car parks would provide a supply of around 60 parking spaces, with pedestrian connectivity through the Penny Royal site to Bridge Road, available to uses within the Study Area. As with the previous option, the proposal will require further investigation including, but not limited to:

- Horizontal and vertical roadway alignment
- Traffic impacts of new access road connection to West Tamar Highway
- Environmental and visual amenity impacts of construction
- Detailed benefit-cost assessment

A preliminary feasibility assessment has been undertaken by GHD in parallel to this current study which has identified several key design constraints associated with the proposal.

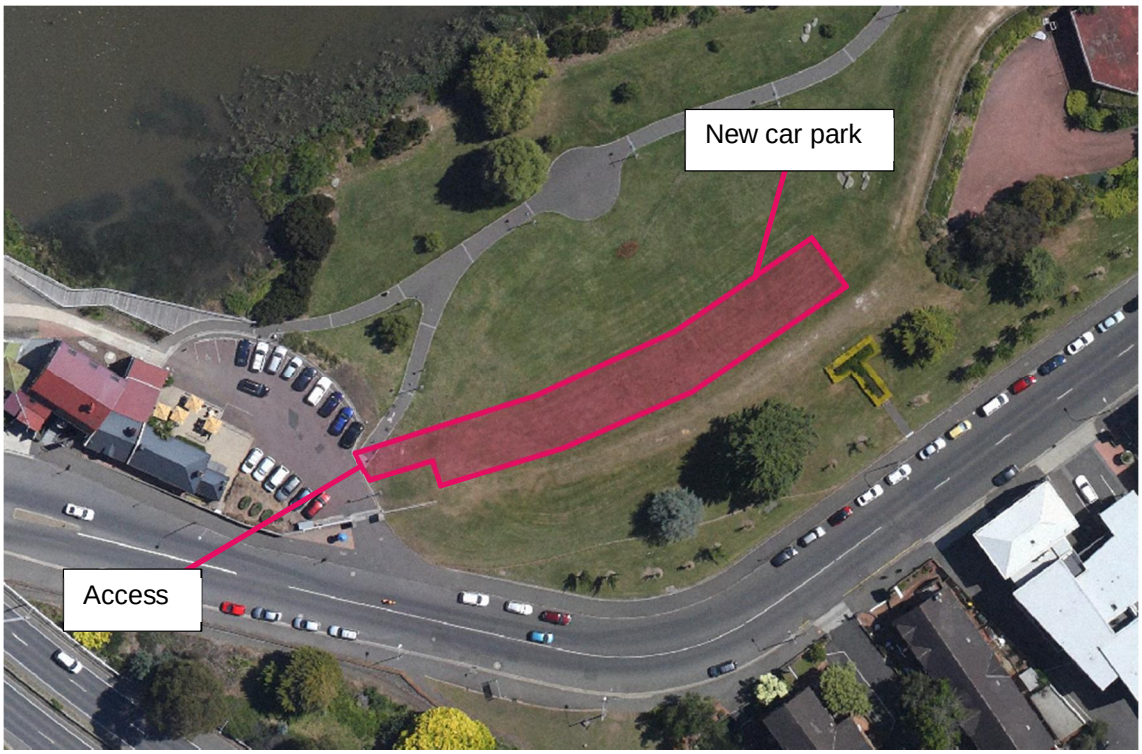
Figure 26 Option 11b – New Car Parks (60 spaces) at Zig Zag Reserve

Base image source: JAC Group

Option 12 – New Public Car Park at Kings Park (West)

This option involves constructing a new public car park near the western end of Kings Park, along the top of the levee bank, as shown in Figure 27. The car park would be accessed via the existing Stillwater driveway and could potentially supply up to 30 short-term, 90 degree angle parking spaces.

Figure 27 Option 12 – New Public Car Park at Kings Park (West)



Base image source: LISTMap, DPIPWE

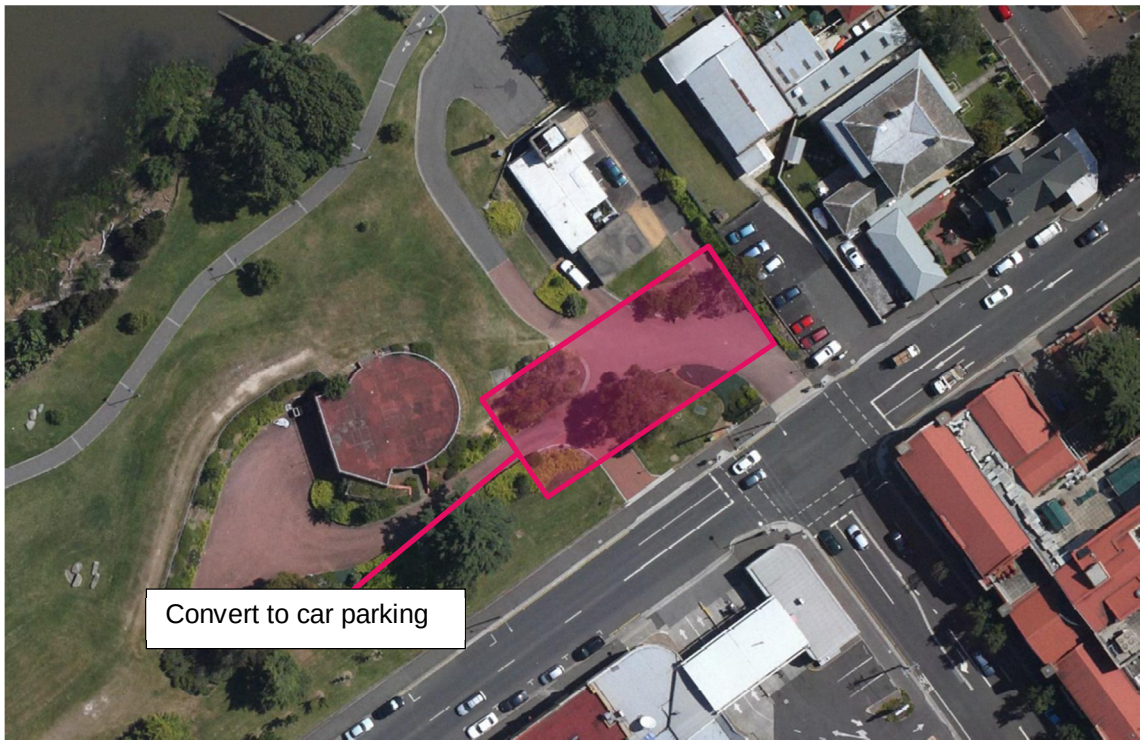
The intent is for the new car park to be located just below the top of the levee bank, complete with retaining wall, utilising part of the currently underused area of Kings Park. By recessing the car park into the bank, it can be partially hidden from view while looking from Paterson Street, however there would be resistance to any significant loss of grassed area within Kings Park.

The existing Stillwater car park access is narrow, with restricted sight distance, and may not be suitable for additional traffic volumes without modifications such as widening of the flood gate.

Option 13 – New Public Car Park at Kings Park (East)

This option involves converting the existing driveway and turning area for the Margaret Street Pump Station into a public car park as shown in Figure 28. It is anticipated that around 29 short-term parking spaces can be provided which is consistent with the objectives to modestly increase the supply of short-term parking within the Study Area.

Figure 28 Option 13 – New Public Car Park at Kings Park (East)



Base image source: LISTMap, DPIPWE

The new car park would be conveniently located close to service and attractions, with good pedestrian connection to Paterson Street and Bridge Road via Kings Park. The car park would use the existing access at the intersection of Paterson Street and Margaret Street. Modification to the traffic signals may be required to incorporate the access into the intersection with pavement loop detectors to control access.

It is noted that the car park would remove some grassed area and vegetation in Kings Park, however this area is currently not well utilised and amenity impacts can be mitigated by planting a buffer between the car park and Paterson Street, and by converting existing bitumen to grassed area north of the car park.

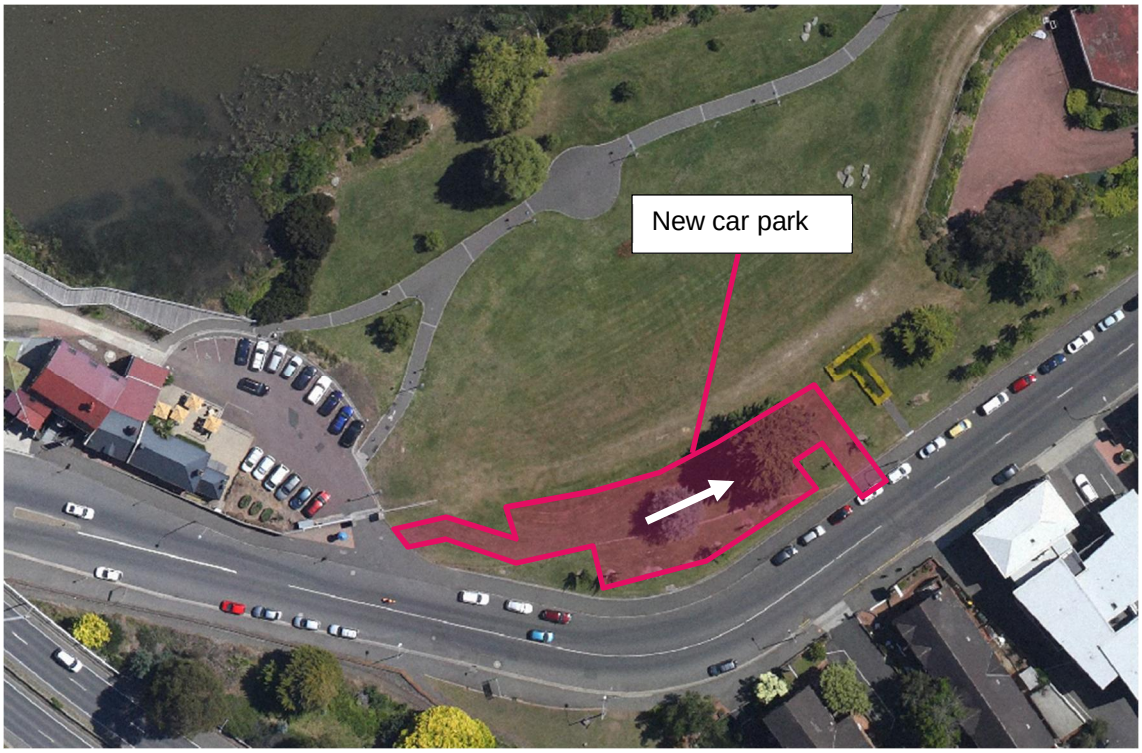
Maintenance access, including occasional truck access, would need to be maintained for the Margaret Street Pump Station which may require closure of the car park at some times.

Option 14 – New Public Car Park along Paterson Street

This option involves constructing a new row of 90 degree angle parking alongside Paterson Street. The car park would be accessed via a new one-way parking aisle connecting to the

Stillwater car park access and Paterson Street as shown in Figure 29. Around 32 short-term parking spaces can be provided.

Figure 29 Option 14 – New Public Car Park along Paterson Street



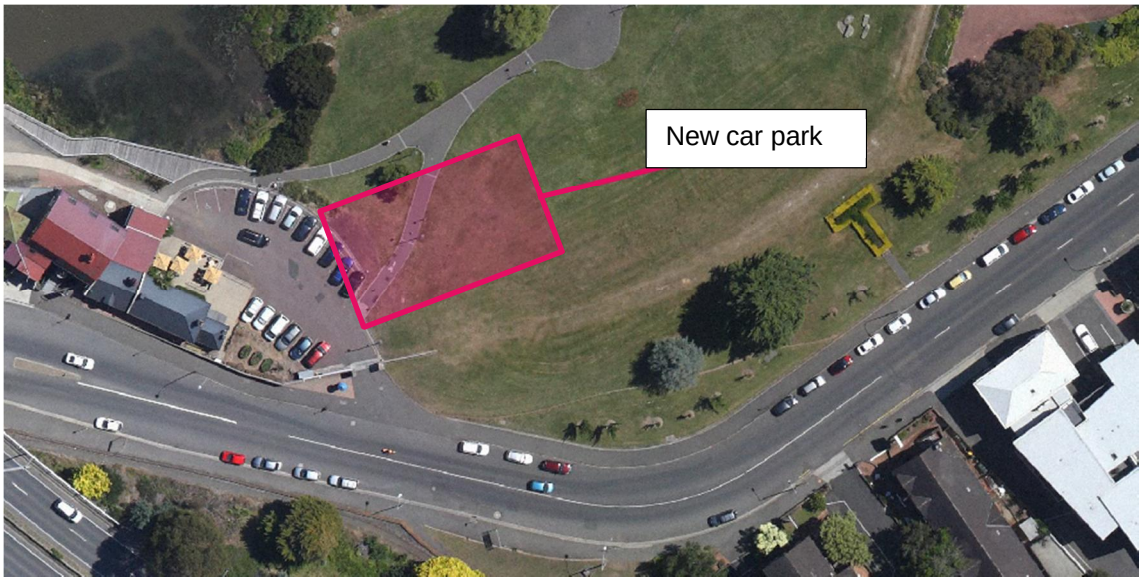
Base image source: LISTMap, DPIPWE

A new retaining wall, up to 2.5 metres high, would be required on the Paterson Street side of the flood levee in order to provide enough width for parking spaces and manoeuvring.

Option 15 – Expand Stillwater Car Park

This option involves expanding the existing Stillwater car park into Kings Park as presented in Figure 30 to provide an additional 40 parking spaces. The modifications would include reconfiguration of the existing car park and additional parking taking up approximately 850 m^2 of Kings Park.

Figure 30 Option 15 – Expand Stillwater Car Park



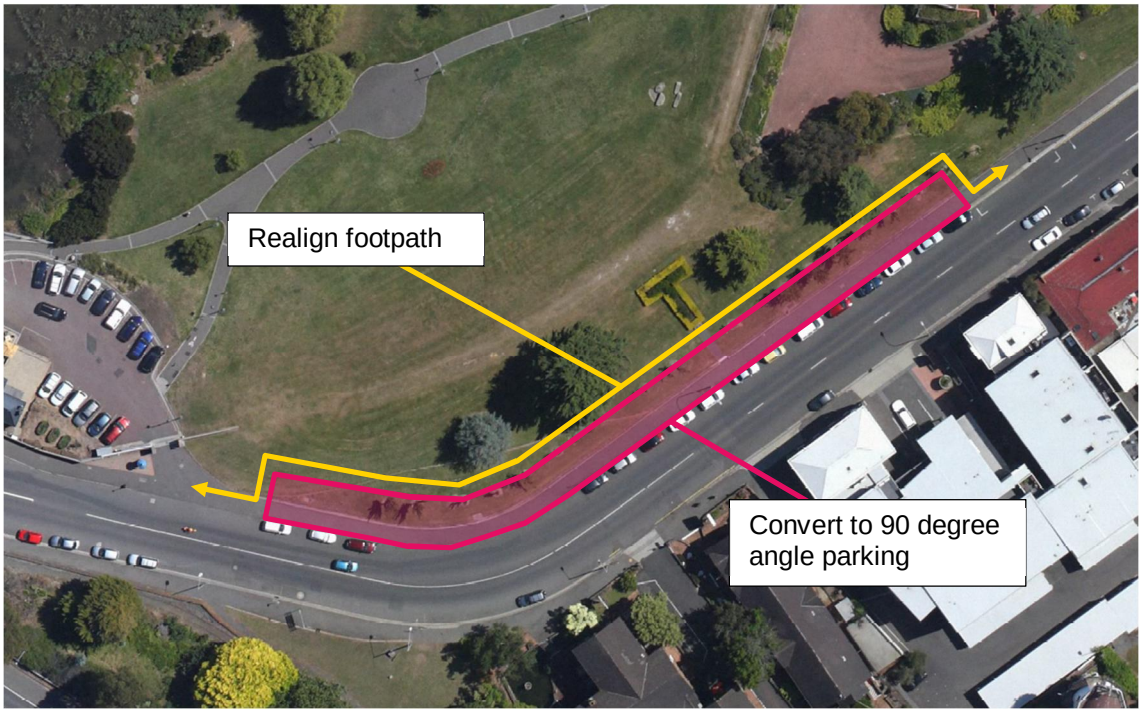
Base image source: LISTMap, DPIPWE

It would be accessed via the existing Stillwater car park access, however this access is narrow, with restricted sight distance, and may not be suitable for additional traffic volumes without modifications such as widening of the flood gate.

Option 16 – Convert Paterson Street to 90 Degree Angle Parking

This option involves converting the existing parallel on-street parking along the northern side of Paterson Street (near Kings Park) to 90 degree angle parking as presented in Figure 31. Use of angle parking can typically double the supply compared to parallel parking, thereby increasing the number of spaces by approximately 20.

Figure 31 Option 16 – Convert Paterson Street to 90 Degree Angle Parking



Base image source: LISTMap, DPIPWE

Given the function of Paterson Street and the relatively high traffic volumes using this road, the provision of 90 degree angle parking would require additional manoeuvring space to allow vehicles to almost pull completely out of a parking space without encroaching into the nearby traffic lane.

Table 4 List of Opportunities for New Short to Medium Term Car Parking Infrastructure

ID	Description	Advantages	Impacts	Design Considerations	Effective Supply
7	Expand West Tamar Walking Trail car park	Expansion of existing car park with established vehicle and pedestrian access Good connection to walking trails and the Study Area	Car park would require clearing of a small part of the reserve	Parking should be free, however consider implementing time restrictions as per Option 3 Any formalisation of car parking would likely require warning signage regarding potential flooding	12 spaces
8	Formalise parking along Tamar Marine laneway	Make more efficient use of available space Can ensure adequate clear width along the laneway for delivery vehicles		Parking should be free, however consider implementing time restrictions as per Option 3 Any formalisation of car parking would likely require warning signage regarding potential flooding	-
9	Reinstate on-street parking along West Tamar Highway inbound	Increases parking supply without significant investment in new infrastructure – requires only line-marking and signage Good connection would be available to Bridge Road	On-street parking activity would impact on West Tamar Highway operation High traffic volumes and speeds could lead to deterioration of road safety performance	Parking should be free, however consider implementing time restrictions	40 spaces

ID	Description	Advantages	Impacts	Design Considerations	Effective Supply
10	Construct a second level on the Penny Royal (quarry site) car park	Additional parking supply within Study Area close to local attractions	Relatively high cost for a minor increase in parking supply Space requirements of ramps, columns, parking aisles and pedestrian access would result in loss of parking efficiency		15 spaces
11a	Construct new car park at Zig Zag Reserve accessed from West Tamar Highway	Significant increase in parking supply with connection to the Study Area	Potential traffic impacts on West Tamar Highway due to new intersection Environmental impacts and loss of a small part of the reserve High cost	Parking time restrictions and cost would need to be considered	90 spaces
11b	Construct new car parks at Zig Zag Reserve accessed from Brisbane Street West and West Tamar Highway	Significant increase in parking supply with connection to the Study Area	Potential traffic impacts on West Tamar Highway due to new intersection Environmental impacts and loss of a small part of the reserve High cost	Parking time restrictions and cost would need to be considered	60 spaces
12	New public car park at Kings Park (west)	Additional parking supply within Study Area close to local attractions Can be partially hidden from view from Paterson Street	Loss of park area within Kings Park Stillwater car park access may not be suitable for additional traffic volumes	Parking should be short term, voucher parking	30 spaces

ID	Description	Advantages	Impacts	Design Considerations	Effective Supply
13	New public car park at Kings Park (east)	Additional parking supply within Study Area close to local attractions	Minor loss in park area, however can be reinstated by grassing over existing bitumen area to the north Car park closure may be required at times to allow access to Margaret Street Pump Station	Parking should be short term, voucher parking Consider integrating car park access with Paterson Street/ Margaret Street signals	29 spaces
14	New public car park along Paterson Street	Additional parking supply within Study Area close to local attractions One-way traffic aisle creates simple access arrangement	High retaining wall (2.5 m) would be required on Paterson Street side of flood levee bank	Parking should be short term, voucher parking	32 spaces
15	Expand Stillwater car park	Additional parking supply within Study Area close to local attractions More efficient use of existing space	Reduction in park area by approximately 850 m^2	Parking should be short term, voucher parking	40 spaces
16	Convert Paterson Street to 90 degree angle parking	Additional parking supply within Study Area close to local attractions	Potential traffic and road safety impacts due to manoeuvring Additional manoeuvring space required to allow for adequate sight distance along Paterson Street for emerging vehicles	Parking should be medium term (3 hour) voucher parking	20 spaces

4.1.3 Options for Providing Longer Term Parking

Option 17 – Provide New Park and Ride Facility

Park and ride is a service that allows car drivers to park some distance from their destination, typically on the fringe areas of the city, and switch to public transport for some part of their journey.

In order for a park and ride system to be effective, the overall cost (including travel time cost) of the journey must be perceived as being less than that for a car only journey. The Austroads publication, *Guide to Traffic Management – Part 11: Parking* (2008) lists the following conditions for a successful park and ride system:

- A limited and high cost public car parking system packaged with limited private off-street free car parking in the central areas served by the park and ride system;
- A fast public transport service relative to the car;
- A frequent and reliable public transport service between the park and ride facility and the central area, with an adequate capacity, on-site security and providing a pleasant travelling environment;
- A competitive fare for the park and ride journey to and from the central area;
- Secure car and bicycle parking facilities located within a short walking distance to the park and ride bus stop; and
- Congested road conditions along routes into the central area.

Low availability and relatively high cost of city centre car parking is a crucial element in ensuring the success of a park-and ride system. Cheap, readily available city centre parking will discourage the use of park and ride.

In the context of the recommendations of this study, the Bridge Road / Kings Park area would limit the available long term car parking to some 120 spaces less than the anticipated demand.

Provided a suitable location can be found, an efficient park and ride system on the fringe of the city could cater for not only this demand, but also parking demand in the wider area, thereby reducing parking congestion and increasing the availability of parking within the Central Activities District.

The Austroads Guide lists several key factors which need to be considered in determining a suitable location for a park and ride facility including:

- The facility should be located in major traffic corridors, upstream of the traffic congestion points.
- The facility should be located within a short walking distance of bus stop/train station in travel corridors serviced by fast, reliable and frequent public transport services.
- The facility should not be located within 5-8 km of major destinations such as a town centre or central business district. Locating the facilties further away from the core regional centres also saves money due to lower land values.
- As motorists do not like backtracking, the facilities should be located on the destination side of the catchment area providing the majority of users with a direct route to the facility and then onto their destinations.
- The facility should be accessible and highly visible from major travel corridors to increase their attractiveness and awareness.

- The facilities should be located in areas with a high level of demand for at least one major destination.
- It is usually best to have several smaller park and ride facilities in different locations rather than one large one.
- The facility should be located within view of businesses or homes to improve security.

While no specific locations for a park and ride facility have been identified in this study, it is clear that from the above factors, an ideal location for a park and ride facility to service the Study Area and the Central Activities District would be somewhere along West Tamar Highway north of the Study Area.

Option 18 – Second Level on (part of) Bathurst Street Car Park

This option involves increasing the supply in the existing Bathurst Street car park by constructing a second level above part of the car park. There would be some loss of efficiency due to the space requirements of ramps and columns, however it is anticipated that supply can be increased by around 70 parking spaces. If the whole site is used, around 150 additional spaces can be provided. The new spaces would be subject to the same controls as the existing car park.

It is noted that significantly increasing parking supply within the Study Area is not in line with the strategic parking objectives as outlined in Section 3.1 of this report, with a preferred method of improving parking being to implement operational changes and modest increases in supply. However the aim of this option is to provide for the shortfall of long term parking, rather than short term parking, and should not necessarily be compared with those options in the previous section of this report (Section 4.1.2).

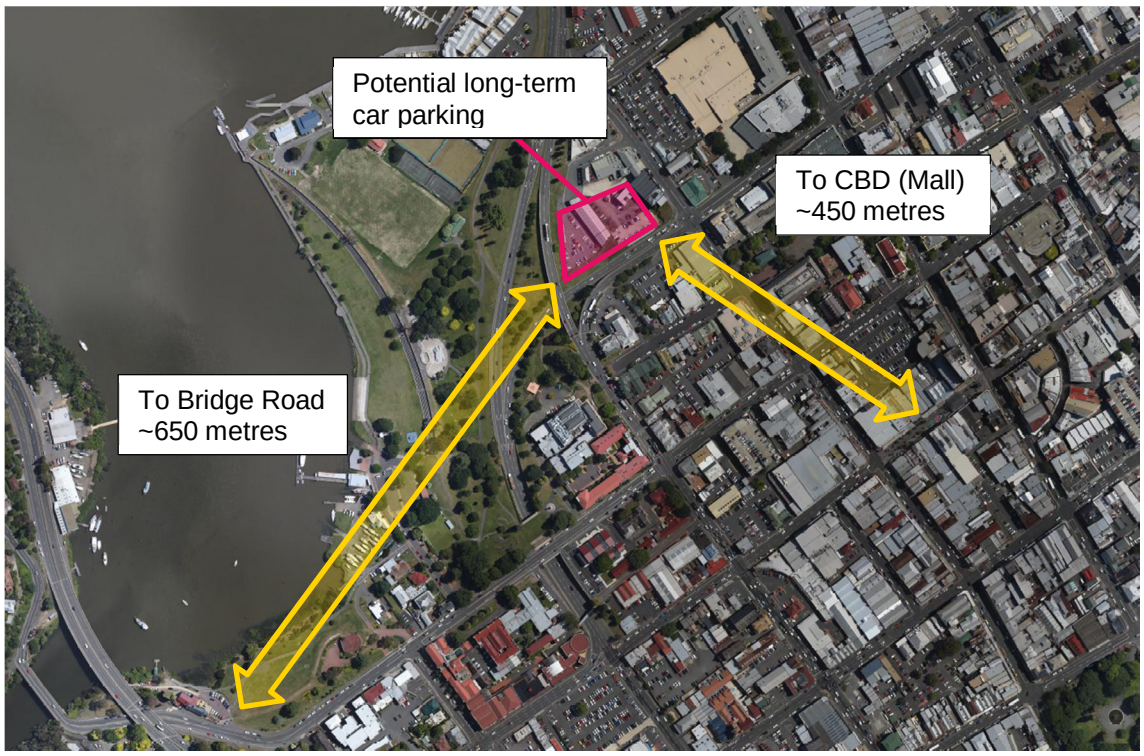
It is expected that the construction cost of the car park expansion will be high (in the order of $1.5M to $3.0M) and may preclude future development of the site.

Option 19 – New Private / Government Partnership

A new long-term car park could be developed by a partnership between Council and a private developer. This would allow a developer to monetise currently unused portions of land by providing all day parking for a fee as well as providing parking to cover the current long term parking shortfall within the Study Area and surrounds.

One potential option for such a partnership is the CH Smith development site, at Charles Street and Cimitiere Street. While this site is located outside the Study Area, it is within the bounds of the Central Activities District and could provide a supply of longer term parking for students and commuters, within a reasonable walking distance of the Launceston CBD.

Figure 32 Potential CH Smith Site Long-term Car park



Base image source: LISTMap, DPIPWE

Access to the site would be off Cimitiere Street and it is within a 450 metre walking distance of the Launceston CBD and within 650 metres of Bridge Road within the Study Area. While it is acknowledged that a new car park such as this would not necessarily service the land uses within the Study Area, it is anticipated that it could draw existing parking away from the Study Area, thereby freeing up parking spaces for local use.

Option 20 – General Improvement of Public Transport, Walking and Cycling

Over time, the general improvement in public transport services and walking facilities within the Greater Launceston area will instigate a behavioural shift towards use of public transport and other transport modes in preference to private car. This will reduce the level of demand for private car parking, or more specifically student and commuter parking, within the Study Area and the Central Activities District as a whole, however it is noted that general growth in population and employment over time will raise demand to current levels.

The *Draft Greater Launceston Metropolitan Transport Plan,* Department of State Growth, highlights several key strategic objectives for improving the bus network with the aim of ensuring that Greater Launceston has a safe, convenient, reliable and attractive bus system that provides a viable travel alternative to the car.

Table 5 Bus Network Objectives and Strategies

Objectives	Strategies
Increase bus patronage across the network and increase mode share for bus travel, particularly during peak times. Improve travel time, frequency and reliability of buses on the network, particularly on key corridors.	Develop new service standards for public transport provision. Create direct, simple and efficient route patterns that connect activity centres. Improve coordination and integration of services.

Objectives	Strategies
Optimise efficiency and effectiveness, and reduce redundancy in the network.	Develop bus stops that provide passenger amenity and are accessible, and support wider network improvements such as bus transfers and efficient route design. Ensure the design and management of our roads.

Note that relying on a mode shift to public transport will not alleviate the parking issues that currently exist within the Study Area. The improvement of public transport is a longer term vision which acknowledges that the future growth in population and employment and the resulting growth in parking demand across the Central Activities District as a whole is unsustainable.

Table 6 List of Opportunities for Providing Longer Term Car Parking

ID	Description	Advantages	Disadvantages	Design Considerations	Effective Supply
17	Provide new park and ride facility	Reduced demand for parking within the Study Area and the Central Activities District as a whole, allowing spaces within the study area to be used for short-medium stay parking		Cumulative cost of travel via park and ride (including travel time) would need to be more efficient than private car	Depends on demand
18	Construct a second level on part of Bathurst Street car park	Significant increase in parking supply with connection to the Launceston CBD and the Study Area	May preclude future development of the site High cost	Parking time restrictions and costs would need to be considered	70 to 150 spaces
19	New private / government partnership	Reduced cost to Council compared to other options due to partnership and potential monetisation of parking	Reliance on private organisation which would have different goals for provision of parking	CH Smith development site has been identified as a potential option	Up to 150 spaces
20	General improvement of public transport, walking and cycling	Improved use of alternative transport modes Reduced demand for parking within the Study Area and Central Activities District as a whole	Long term commitment Will not alleviate parking concerns in the short term Relies on change in attitude towards public transport and behavioural shift	Alignment with goals and objectives of the Greater Launceston Metropolitan Transport Plan	

4.2 Rapid Appraisal

A rapid appraisal of each of the new short to medium term parking infrastructure options has been undertaken to determine those options which would be most practical and efficient to proceed. Note that due to the different goals, long term parking options were not considered in this analysis. Each option was given a score against the criteria as summarised below:

- **Parking Supply**

  The total number of additional spaces provided by each option was rated according to the following scale:

  – 1 = ≤ 15 spaces,
  – 2 = 16 to 30 spaces, and
  – 3 = > 30 spaces.

  Weight: 15%

- **Convenience**

  The convenience afforded by new parking was rated based on the proximity to services, vehicular access and pedestrian access. For example, a new parking area very close to destinations (< 100 metres) and with good vehicular access would be given a rating of 3.

  Weight: 10%

- **Environmental and Amenity Impacts**

  Several options have significant impact on amenity and the environment, such as loss of park or reserve area, whereas other options are contained within currently underutilised or otherwise available land. Options were given a rating out of 3, where 0 represents significant impact on park area or visual intrusion and 3 represents little to no impact on environment or amenity.

  Weight: 15%

- **Traffic Impacts**

  The traffic impacts criteria takes into consideration such factors as traffic efficiency (congestion) and road safety. A score of 3 represents no impact on traffic performance whereas a score of 0 represents significant congestion and/or detriment to road safety performance.

  Weight: 30%

- **Cost**

  While no detailed costings were undertaken for most options at this stage of the assessment, a rough estimate could be undertaken based on the scale of acquisition and/or construction work that would be required. Ratings were given as follows:

  – 0 = Very high cost (< $1,000,000)
  – 1 = High cost ($500,000 to $1,000,000)
  – 2 = Medium cost ($100,000 to $500,000)
  – 3 = Low cost (< $100,000)

  Weight: 30%

The weighted total score of each option is summarised in Table 7. Detailed scoring is provided in Appendix C.

Table 7 Rapid Appraisal

Option		Number of spaces	Score
7	Expand West Tamar Walking Trail car park	12 spaces	2.5
8	Formalise parking along Tamar Marine laneway	0 spaces	2.4
13	New public car park at Kings Park (east)	29 spaces	2.3
14	New public car park along Paterson Street	32 spaces	2.3
9	Reinstate on-street parking along West Tamar Highway inbound	40 spaces	1.9
15	Expand Stillwater car park	40 spaces	1.8
16	Convert Paterson Street to 90 degree angle parking	20 spaces	1.8
10	Construct a second level on the Penny Royal (quarry site) car park	15 spaces	1.4
12	New public car park at Kings Park (west)	30 spaces	1.4
11b	Construct new car parks at Zig Zag Reserve accessed from Brisbane Street West and West Tamar Highway	60 spaces	1.3
11a	Construct new car park at Zig Zag Reserve accessed from West Tamar Highway	90 spaces	1.1

Options 7, 8, 13 and 14 are considered to have merit and are recommended for further investigation. Implementation of these four options would result in the creation of approximately 73 additional short to medium-term parking spaces within the Study Area.

4.3 Concept Design

Preliminary concept designs of the four options which scored the highest (Options 7, 8, 13 and 14 are provided in Appendix C. Note that Option 7 and Option 8 have been combined into a single option as they are closely related.

4.4 Cost Estimates

Preliminary construction estimates have been undertaken based on the preliminary concept designs. These are summarised in Table 8. A detailed breakdown of costs is provided in Appendix C.

Table 8 Preliminary Cost Estimates

Option		Supply	Cost	Average Cost per space
7	Expand West Tamar Walking Trail car park	12 spaces	$122,150	$10,180
8	Formalise parking along Tamar Marine laneway			
13	New public car park at Kings Park (east)	29 spaces	$209,270	$7,220
14	New public car park along Paterson Street	32 spaces	$210,770	$6,590
Total		**73 spaces**	**$585,190**	**$9,750**

5. Sustainable Transport Assessment

5.1 Review of Bus Stops

It is important that the provision of parking for cars does not negatively impact on access for buses, including draw-in and draw-out at bus stops. The locations of existing bus stops are shown in Figure 33.

Figure 33 Existing Bus Stops

Base image source: LISTMap, DPIPWE

There are no options presented in this report which would negatively impact on operation or safety of existing bus stops:

- The West Tamar Highway inbound stop is located downstream of any proposed modifications to the West Tamar Walking Trail car park (Option 7) or Tamar Marine laneway (Option 8)
- The Paterson Street inbound stop (near Margaret Street Pump Station) is located downstream of the area proposed to be converted to 90 degree angle parking (Option 17)
- All other stops are located a sufficient distance from options so as not to be impacted

The planning permit for Stage 1 of the Penny Royal Redevelopment includes the conversion of the existing loading zone directly outside Stillwater to be converted to a shared loading zone/bus zone in order to link with the existing pedestrian crossing at this location. The intent is for very short term bus parking only while loading passengers (less than 15 minutes) with longer bus parking / layover prohibited.

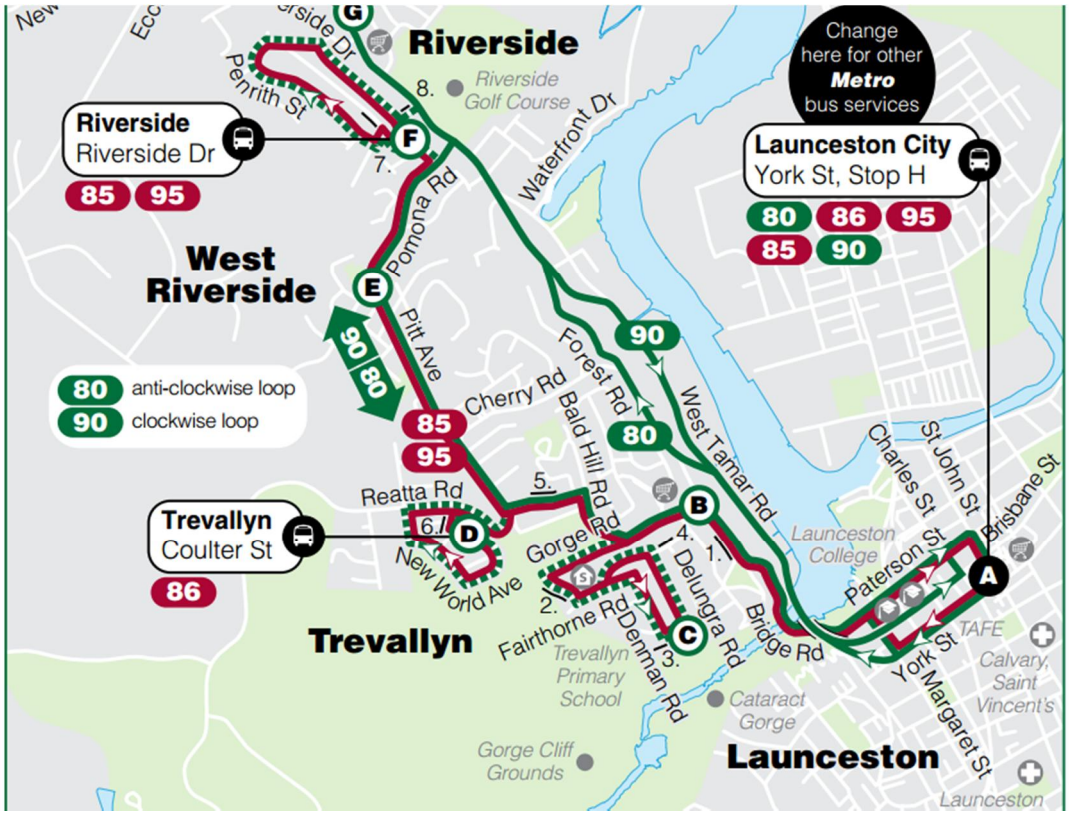
This change is supported and is not considered to impact on parking operation within the Study Area.

5.2 Review of Bus Routes

There is nowhere along Paterson Street (west of Margaret Street) or Bridge Road for a bus to turn around. Instead, buses which service this part of the Study Area, including Metro services, school buses and tourist coaches, must drive along Trevallyn Road and turn around in Trevallyn to return to Launceston. Note that Metro services which travel to Trevallyn typically continue through to Riverside, rather than turning around.

Metro operates 5 bus routes (80, 85, 86, 90 and 95) between Riverside and Launceston, via Trevallyn. These services travel through the Study Area via Bridge Road and Paterson Street as shown in Figure 34.

Figure 34 Metro Bus Routes



Source: Metro Tasmania (www.metrotas.com.au)

According to current timetabling information, around 36 Metro buses travel along Trevallyn Road each day on weekdays (two-way), and significantly fewer on weekends. In total, around 196 Metro buses travel up and down Trevallyn Road each week. The existing metro bus frequency along Trevallyn Road is typically around 2 to 3 buses per hour (two-way) throughout the day with minor peaks of 4 buses per hour between 8:00 and 9:00 am and between 4:00 and 5:00 pm. In addition, around 2 to 3 school buses travel up and down Trevallyn Road in the morning (8:00 to 9:30) and afternoon (2:30 to 4:00).

The proposed Penny Royal redevelopment will attract some trips by tourist buses. *The Penny Royal Redevelopment – Stage 1A and 1B, Traffic Impact Assessment* (GHD 2014) suggests that around 7.5% of all visitors to the site on peak days would travel by tourist coach. Based on the anticipated attendance as outlined in the TIA, this would result in up to 1 coach per day during the seasonal peak and significantly less than this during off peak (assumed 2 to 3 coaches per week).

Coaches dropping off at the Penny Royal will travel up Trevallyn Road and layover near Trevallyn Primary School, eventually turning around at the nearby turning facility and travelling back along Trevallyn Road to pick up passengers on Bridge Road. Note that the existing loading zone outside Stillwater would be converted to a part time loading zone / bus zone for this purpose.

Therefore, each coach dropping off and picking up at Penny Royal will add two new bus movements to Trevallyn Road, one in each direction. This represents an increase by 7.1% in the weekly bus movements on Trevallyn Road during the seasonal peak period and around 3.1% during the off peak.

Given the proposed opening hours of the Penny Royal, tourist coaches would typically drop passengers off after 10:00 am, thereby missing the morning peak period for both buses and general traffic on Trevallyn Road. That is, the number of buses on Trevallyn Road during the late morning period might increase from 2 buses per hour to 3 buses per hour, which is still lower than the number of buses during the morning peak.

It is possible that the passenger pick up time may coincide with the evening peak traffic period on Trevallyn Road; however existing bus movements in the evening peak are spread with school buses travelling between 2:30 and 4:00 pm and Metro buses peaking after 4:00 pm. Furthermore, coaches would be travelling in the direction opposite to peak traffic, thereby reducing any potential impacts on Trevallyn Road.

On the basis of the above, the addition of a single tourist coach travelling towards Trevallyn (late morning) and back towards Launceston (afternoon) would not have a material effect on Trevallyn Road.

5.2.1 Tiger Bus Service

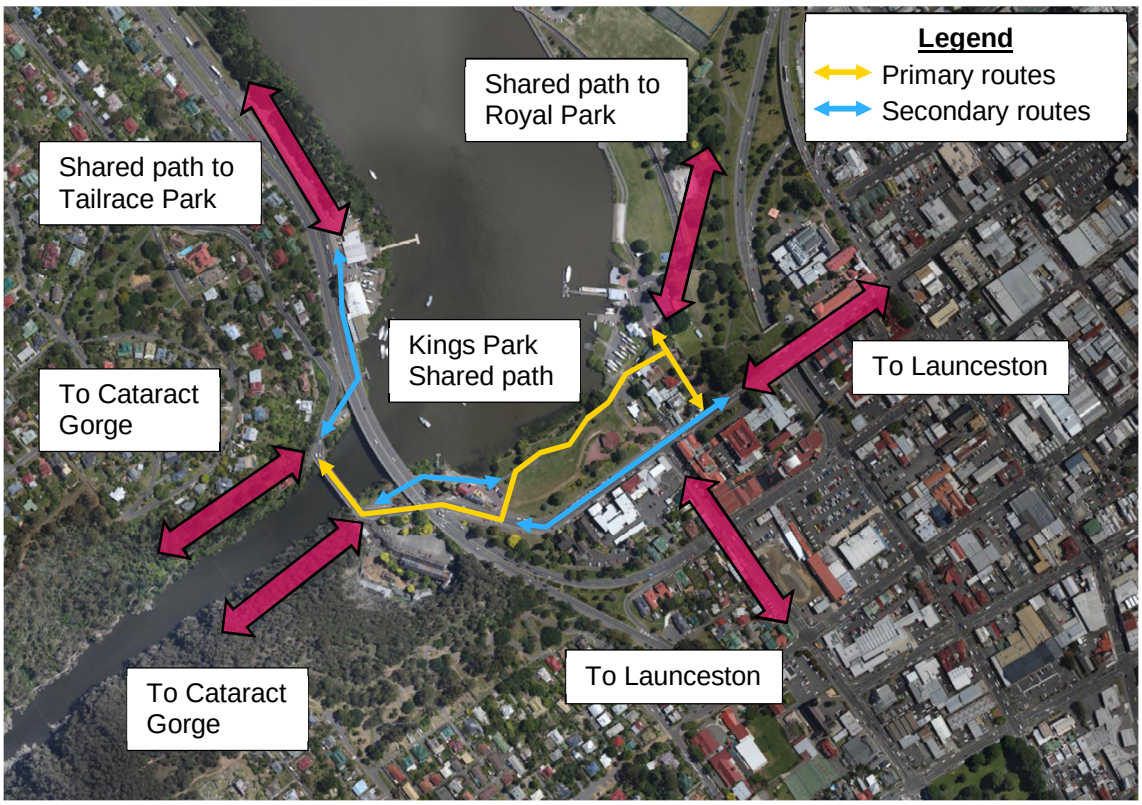
The City of Launceston FREE Tiger Bus service operates Monday to Friday all year round and on weekends during December. It provides a short commuter run at the beginning and end of the working day, between the City Centre and long term parking at Inveresk, and also provides convenient transport around the city and to key attractions throughout the day.

Currently, the *River Explorer Loop* travels northbound along Margaret Street, turning right onto Paterson Street and stopping outside the Art Gallery just outside of the Study Area. Accessibility for the Study Area could be further improved by utilising the existing bus stop on Margaret Street (near Paterson Street) for Tiger Bus services.

5.3 Review of Pedestrian and Cycling Routes

The main pedestrian and cycling routes to, from and within the Study Area are presented in Figure 35.

Figure 35 Pedestrian and Cycling Routes



Base image source: LISTMap, DPIPWE

5.3.1 Pedestrian Route Hierarchy

The Launceston City Council Pedestrian Strategy (LCC, 2013) outlines the following pedestrian route hierarchy within the Study Area:

Primary Routes

The primary pedestrian route travels along the Cataract Gorge main trail, Kings Bridge and Bridge Road, and the Kings Park shared path connecting to Royal Park. It also includes the full length of Park Street.

The minimum infrastructure provision for the primary route is a 1.8 metre footpath width, fully sealed, with shade at 30 metre intervals and seating every 500 metres. Accessible parking should be located within 50 metres of a point on the route. There are no specific requirements for the distance between road crossings, however pedestrian lights or median refuge are required if the crossing is greater than 10 metres.

Secondary Routes

The secondary pedestrian routes connect to the primary pedestrian route and include a shared path travelling under Paterson Bridge and connecting to the Tamar Marine laneway, as well as the recreational path connecting from Kings Bridge to Kings Park along the edge of the water. The streets within the Central Activities District are also considered secondary routes including Paterson Street (east of Margaret Street), Margaret Street, Brisbane Street and Bathurst Street.

The minimum infrastructure provision for secondary routes is a 1.5 metre footpath width, fully sealed (all weather for recreational trails), with shade at 50 metre intervals and seating every 1,000 metres. As with the primary routes, there are no specific requirements for minimum distance between road crossings, however pedestrian lights or median refuge are required if the crossing is greater than 10 metres.

Local Routes

All other footpaths are considered local pedestrian routes with a minimum sealed footpath width of 1.5 metres.

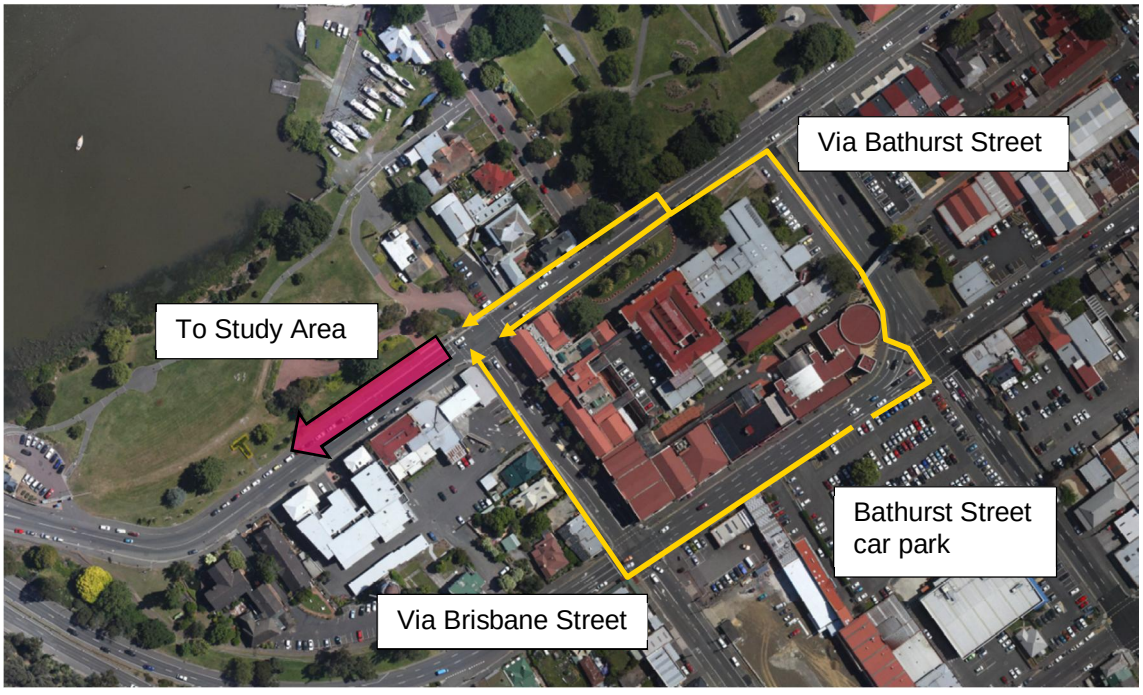
5.3.2 Pedestrian Route Assessment

Pedestrian connectivity to and from the Study Area, and within the Study Area, is generally direct and well suited to both recreational users and commuters. Controlled crossing opportunities are provided at signalised intersections (such as Paterson Street and Margaret Street) and several median refuge islands are provided along both Paterson Street and Bridge Road. There are, however, some existing issues regarding pedestrian connectivity which are addressed in the following sections.

Bathurst Street Car Park Connectivity

The pedestrian route from Bathurst Street car park to the Study Area has low amenity, with crossings of high volume roads (Brisbane Street and Margaret Street) as well as limited shelter and shade, and a generally unattractive walking environment. There are two main routes as shown in Figure 36.

Figure 36 Bathurst Street Car Park Pedestrian Routes to Study Area



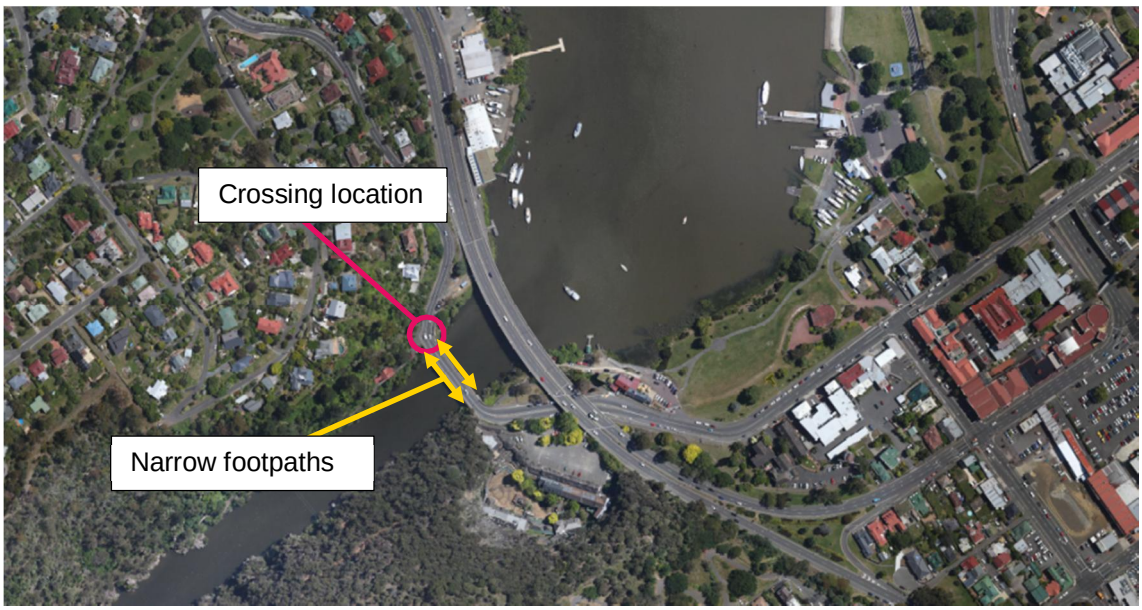
Base image source: LISTMap, DPIPWE

It is recommended that some measures be undertaken to improve the walking environment between Bathurst Street car park and the Study Area along one of these routes. This may include such measures as footpath widening, tree planting, provision of shelter and/or shade, and wayfinding signage.

Kings Bridge Footpath and Crossings

The footpaths on either side of Kings Bridge are narrow, and constrained by fencing on both sides. There is only just sufficient room for two pedestrians to pass side-by-side. Cyclists occasionally use the footpath in preference to cycling on Bridge Road. There is also an existing issue with regard to safety of pedestrians crossing at the northern end of the Bridge. The location is shown in Figure 37.

Figure 37 Kings Bridge Footpath and Crossings



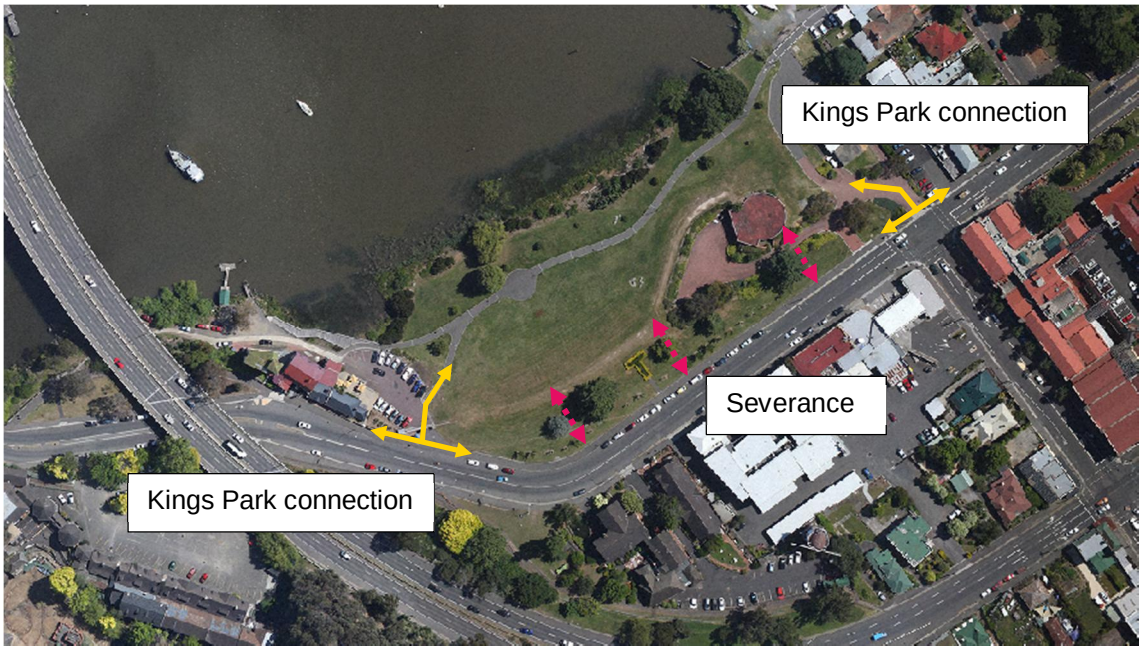
Base image source: LISTMap, DPIPWE

There is little that can be done to improve the current situation for pedestrians walking along Kings Bridge. The width of both footpaths are constrained by the bridge construction and required lane widths for general traffic. It is noted, however, that the bridge, and the Cataract Gorge entrance, are currently being considered as part of the Vision 2030 Cataract Gorge Reserve and Trevallyn Nature Recreation Area project being undertaken by Council, of which pedestrian access and amenity forms a major component.

Separation of Kings Park and Paterson Street

Kings Park is separated from Paterson Street by the flood levee. While connection is available at the western end of Kings Park (Stillwater car park) and the eastern end of Kings Park (Pump Station), there is still some level of severance, particularly for those businesses located on the southern side of Paterson Street. This is presented in Figure 38.

Figure 38 Kings Park Connectivity



Base image source: LISTMap, DPIPWE

It is recommended that a new footpath connection be provided between the existing footpath on Paterson Street and the shared path within Kings Park, over the flood levee bank, approximately central along Paterson Street. This could be undertaken in conjunction with Option 15 (New public car park along Paterson Street) to further improve connection to the new parking infrastructure.

Wayfinding Issues

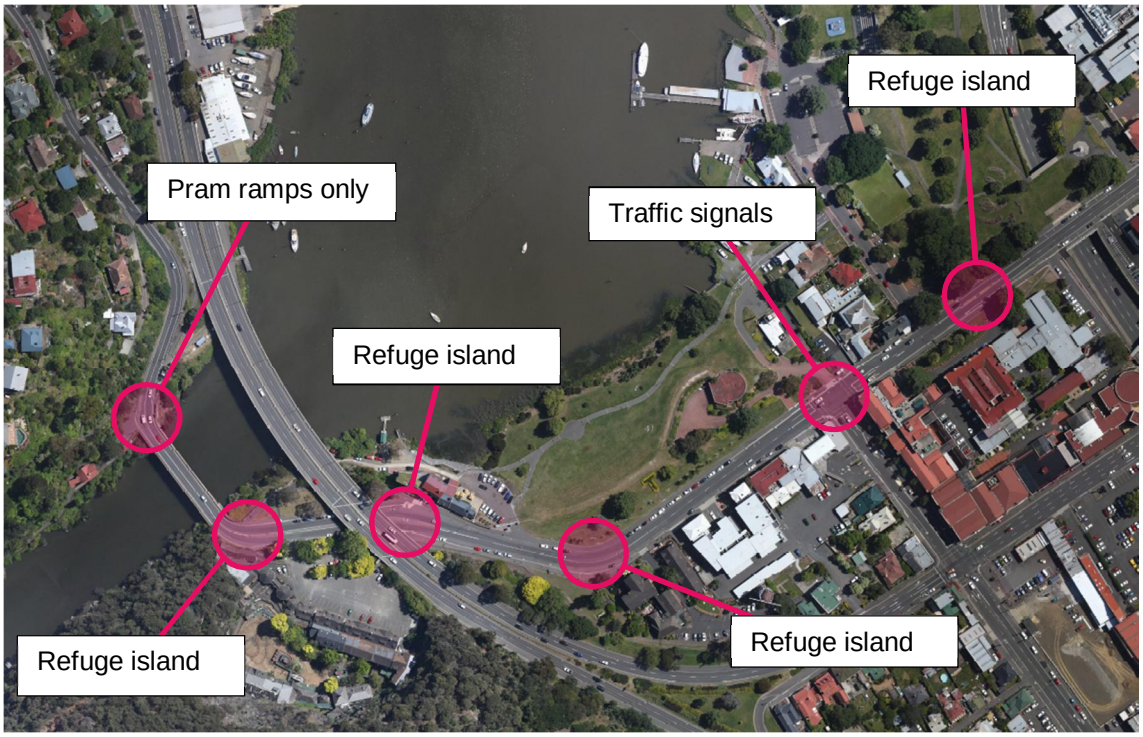
It is recommended that wayfinding signage be provided, directing pedestrians to the facilities within the Study Area from the car parking areas located in more distant, or less direct and intuitive, locations including:

- Bathurst Street car park
- Paterson Street (west) car park
- West Tamar Walking Trail car park

Paterson Street and Bridge Road Pedestrian Crossings

There are a total of 6 formal crossing locations along Paterson Street and Bridge Road within the Study Area. These are spaced relatively evenly at a distance of around 100 metres as shown in Figure 39.

Figure 39 Pedestrian Crossing Locations



Base image source: LISTMap, DPIPWE

An assessment of existing crossings has identified existing road safety concerns with the two crossings located at the northern and southern ends of Kings Bridge:

- The available sight distance at the refuge island at the southern end of Kings Bridge does not meet the recommended minimum for safe operation due to obstructions (road furniture) and the misalignment of the existing refuge island and pram ramps.
- The available sight distance at the crossing at the northern end of Kings Bridge does not meet the recommended minimum for safe operation due to the alignment of Trevallyn Road.

5.3.3 Options for Improving Pedestrian Access

More detail regarding existing pedestrian access and connectivity issues and potential options for improving pedestrian facilities can be found in the *Kings Park – Bridge Road Area Pedestrian Assessment* report which was produced in parallel to this current study. The options assessed in that report include:

- Improvements to existing pedestrian refuge island crossings;
- A new, pedestrian actuated signalised crossing located at the southern end of Kings Bridge;
- Barriers to prevent pedestrian crossings at the northern end of Kings Bridge;
- Implementation of a 40 km/h speed limit through some parts of the Study Area;
- A grade separated pedestrian crossing under the northern end of Kings Bridge;
- A new shared path attached to the east side of Kings Bridge; and
- A new shared path attached to the west side of Paterson Bridge (West Tamar Highway).

5.3.4 Accessible Parking

As noted in Section 2.2 of this report, there is an undersupply of accessible parking within the Study Area with only 4 dedicated spaces provided, representing around 0.5% of the total parking supply. Accessible parking should generally represent 1-2% of the overall supply in an area.

Table 2 recommends increasing the total supply of public parking within the Study Area from 691 to 750 parking spaces. This generates a demand for around 8 to 15 accessible parking spaces. Existing accessible parking is located as follows:

- Stillwater car park 1 space
- Park Street car park 1 space
- Bathurst Street car park 1 space

Note that 1 accessible parking space is also provided within the Officeworks car park, however this is not parking that is considered available for other uses within the Study Area.

From the above, it is recommended that an additional 5 to 12 accessible parking spaces be provided within the Study Area. Note that the new Penny Royal redevelopment will provide a total of 4 accessible parking spaces in the reconfigured car park which will contribute to the above recommendation.

In order to provide the recommended number of accessible parking spaces, all new car parking (new infrastructure) should include at least 1 accessible parking space. Some existing on-street parking should also be converted to accessible parking.

6. Conclusions

This report has documented a parking study which was undertaken of the Bridge Road – Kings Park area, with the primary purpose to assess the current level of demand for parking in the area against the existing supply, and to provide recommendations for better management of existing parking facilities and potential options for increasing the total supply of parking.

6.1 Existing Car Parking

Surveys of all public parking spaces within the Study Area were undertaken on Thursday 6 November, Friday 7 November and Saturday 8 November, between the hours of 7:00 am and 7:00 pm. The surveys recorded the location and partial number plate of all vehicles parked within the Study Area at hourly intervals to obtain a time-of-day profile of parking occupancy and duration of stay.

Excluding reserved and "special use" parking spaces (for example, boat trailers, bus zones and loading zones) there are currently a total of 812 on-street and off-street parking spaces within the Study Area including:

- 125 time limited parking spaces (3P and less),
- 372 voucher parking spaces (3P and long-term), and
- 315 unrestricted parking spaces.

Of these, 691 parking spaces are considered to be available for public use, with the remainder restricted for uses such as Officeworks customers, TRC Hotel patrons and other specific land uses.

The parking surveys revealed that on Friday, the busiest day surveyed, the total parking occupancy for the Study Area approached 85% of the total capacity (practical capacity) between 10:00 am and 12:00 pm. Parking occupancy on Thursday was slightly less and there was significant spare capacity on the Saturday. The parking survey data was aggregated into four main parking areas as follows:

- Penny Royal and Surrounds – Parking is relatively well utilised throughout the day, approaching the 85% capacity on the Friday in the mid-morning, and dropping off through the afternoon. Approximately 40% of all parking activity in Penny Royal and Surrounds area is taken up by longer term parking (greater than 3 hours) in the weekday surveys, compared to around 25% on the Saturday.
- Parking North of the River – There is a significant amount of space capacity in the area, with the maximum parking occupancy representing around 60% of the total supply. Around 60 to 70% of parking activity in the area is longer term (greater than 3 hours) on the weekday surveys, with the majority of this use being stays greater than 6 hours.
- Bathurst Street Car Park – It is clear that on weekdays, the car park is essentially full from 9:00 am to 1:00 pm, with parking occupancy dropping off through the afternoon and into the evening. There is a large amount of spare capacity on Saturday, with more than 70% of spaces unoccupied throughout the day. The duration of stay profile is indicative of longer term (all day) parking which is encouraged through the pricing structure, where all day parking costs $4.00 per day.
- Park Street and Car Park – Parking occupancy approaches capacity in the late morning period, dropping off significantly through the afternoon, and increasing again in the early evening. Around 70-80% of all parking activity in Park Street and the car park is short

term parking, having duration of stay less than 3 hours, however there is some incidence of longer term parking which may indicate non-compliance with existing parking controls.

6.2 Strategic Parking Assessment

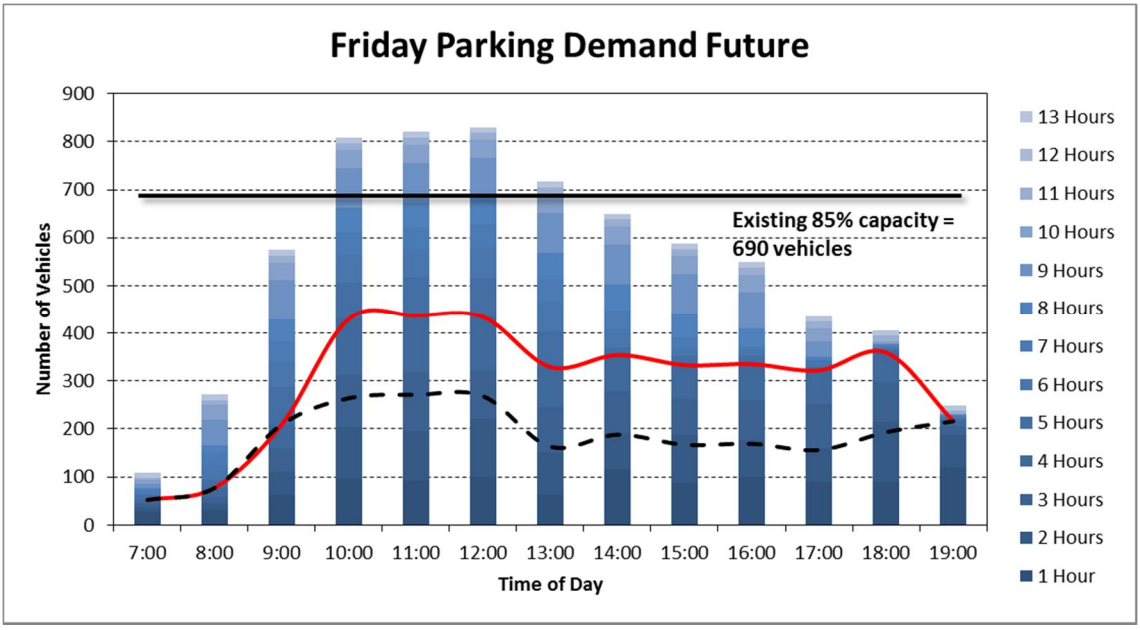
The key strategic parking objectives that have been adopted for the precinct are as follows:

- Improve sharing of existing parking facilities through operational changes.
- Reduce demand for parking within the precinct and improve alternative access methods.
- Modestly increase the total supply of short-term parking in the area.

It is acknowledged that there are several different types of land use within the Study Area, including recreation, tourism, business and retail, education and employment, each of which have different visitation patterns and parking needs.

The estimated future parking demand for a typical Friday, considered the peak demand, is presented in Figure 40. The red line represents the level of short to medium term parking demand (less than 4 hours) under the future conditions.

Figure 40 Future Parking Demand (Friday)



The total demand is anticipated to reach around 850 parking spaces, noting that the current supply of parking is 812 parking spaces. In considering future parking demand, and the level of parking which is considered reasonable to provide, the following parking provision targets have been determined:

- Short term parking (≤ 2 hours) — Increase from 60 to 100 spaces
- Medium term parking (3 - 4 hours) — Increase from 134 to 350 spaces
- Long term parking (> 4 hours) — Reduce from 497 to 300 spaces

Based on the above, it is considered appropriate to seek to increase the total supply of parking within the study area by approximately 60 short to medium-term parking spaces and to convert up to 200 existing unrestricted parking spaces to short and medium term parking.

6.2.1 Displacement of Long Term Parking

Note that the above parking provision targets would result in the displacement of around 120 long term parkers from the Study Area. That is, in order to replace the long term parking spaces that are lost as a result of the recommended changes, around 120 long term spaces (or equivalent) would need to be provided elsewhere.

6.3 Assessment of Options

The following options were considered to have merit and should be subject to further investigation:

Table 9 Assessment of Options

Option	Description	Number of Spaces
Operational Improvements		
Option 1	Convert existing 3P spaces on Bridge Road (total of 17 spaces affected) to 2P	17 spaces
Option 2	Install parking meters along Bridge Road and Paterson Street	-
Option 3	Implement 3P restrictions at Tamar Marine laneway and West Tamar Walking Trail car park	30 spaces
Option 4	Implement voucher parking and 4P restrictions at Penny Royal (quarry site) car park	69 spaces
Option 5	Implement 3P restrictions at West Tamar Highway (outbound)	15 – 30 spaces
Option 6	Implement 3P restrictions in parts of Bathurst Street car park	~50 spaces
New Infrastructure		
Option 7	Expand West Tamar Walking Trail car park	12 spaces
Option 8	Formalise parking along Tamar Marine laneway	0 spaces
Option 13	New public car park at Kings Park (east)	29 spaces
Option 14	New public car park along Paterson Street	32 spaces

Implementation of all of the above would result in:

- 180 long-term parking spaces converted to medium term parking
- Up to 73 new short to medium term parking spaces created

Preliminary concept designs of the four options which scored the highest (Options 7, 8, 13 and 14) are provided in Appendix C. Note that Option 7 and Option 8 have been combined into a single option as they are closely related. Preliminary construction estimates have been undertaken based on the preliminary concept designs. A detailed breakdown of costs is provided in Appendix C.

6.4 Sustainable Transport Assessment

The key findings are as follows:

- There are no options presented in this report which would negatively impact on operation or safety of existing bus stops.
- It is recommended that some measures be undertaken to improve the walking environment between Bathurst Street car park and the Study Area along one of these routes. This may include such measures as footpath widening, tree planting, provision of shelter and/or shade, and wayfinding signage.
- It is recommended that a new footpath connection be provided between the existing footpath on Paterson Street and the shared path within Kings Park, over the flood levee bank, approximately central along Paterson Street. This could be undertaken in conjunction with Option 15 (new public car park along Paterson Street) to further improve connection to the new parking infrastructure.
- It is recommended that wayfinding signage be provided, directing pedestrians to the facilities within the Study Area from the car parking areas located in more distant, or less direct and intuitive, locations including:
  - Bathurst Street car park
  - Paterson Street car park
  - West Tamar Walking Trail car park
- It is recommended that an additional 5 to 12 accessible parking spaces be provided within the Study Area. All new car parking (new infrastructure) should include at least 1 accessible parking space. Some existing on-street parking should also be converted to accessible parking.

6.5 Summary of Recommendations

The recommendations contained in this report will impact on short, medium and long term parking as well as bus services and pedestrian facilities. The anticipated changes in service provision are summarised in the following sections.

6.5.1 Short to Medium Term Parking

Short term and medium term parking have been defined as less than two hour duration and between 3 and four hour duration respectively. The demand for short to medium term parking within the Study Area is typically due to recreational, tourism and business/retail land uses. To a lesser extent, the Launceston College may generate some medium term parking.

The anticipated future demand for short term parking is approximately 200 parking spaces. Similarly, the demand for medium term parking is approximately 220 parking spaces. In order to cater for this demand it is recommended to provide a total of around 100 short term parking spaces (≤ 2 hour parking) and 350 medium term parking spaces (3 to 4 hour parking) within the Study Area.

This represents an increase in short to medium term parking by approximately 250 parking spaces at the expense of longer term parking.

6.5.2 Long Term Parking

This report recommends that some 200 existing unrestricted parking spaces (long term parking) be converted to short or medium term parking. Based on the existing parking supply and demand determined from parking surveys, there would be a displacement of approximately 120

long term parkers from the Study Area. That is, in order to replace the long term parking spaces that are lost as a result of the recommended changes, around 120 long term spaces (or equivalent) would need to be provided elsewhere.

While not specifically the focus of this report, four options have been identified which could cater for long term parking, or otherwise improve transport for existing long term parkers such as commuters and students:

- Provide new park and ride facility,
- Construct a second level on part of Bathurst Street car park,
- New car park developed as part of private / government partnership, and
- General improvement of public transport, walking and cycling.

6.5.3 Bus Services

The options presented in this report will not adversely impact on access for buses, including draw-in and draw-out as bus stops. The conversion of the existing loading zone directly outside Stillwater to a shared loading zone/bus zone is supported and is not considered to impact on parking operation within the Study Area.

The Penny Royal Redevelopment is anticipated to generate up to 1 tourist coach per day during the seasonal peak and significantly less than this during off peak (assumed 2 to 3 coaches per week). This represents an increase by around 7.1% in the weekly bus movements on Trevallyn Road during the seasonal peak period and around 3.1% during the off peak.

It is considered that bus accessibility for the Study Area could be further improved by utilising the existing bus stop on Margaret Street (near Paterson Street) for Tiger Bus services in addition to existing stops.

6.5.4 Pedestrian Facilities

Pedestrian connectivity to and from the Study Area, and within the Study Area, is generally direct and well suited to both recreational users and commuters. There are, however, some existing issues regarding pedestrian connectivity such as:

- Connectivity between Bathurst Street car park and the Study Area,
- Kings Bridge footpath and crossings,
- Separation of Kings Park and Paterson Street,
- Wayfinding, and
- Limited availability of accessible parking.

In addition to the above, the two existing crossings at either end of Kings Bridge are considered deficient with regard to the physical characteristics of the crossings and the available sight distance.

More detail regarding existing pedestrian access and connectivity issues and potential options for improving pedestrian facilities can be found in the *Kings Park – Bridge Road Area Pedestrian Assessment* report which was produced in parallel to this current study.

Appendices

Appendix A – Existing Parking Inventory

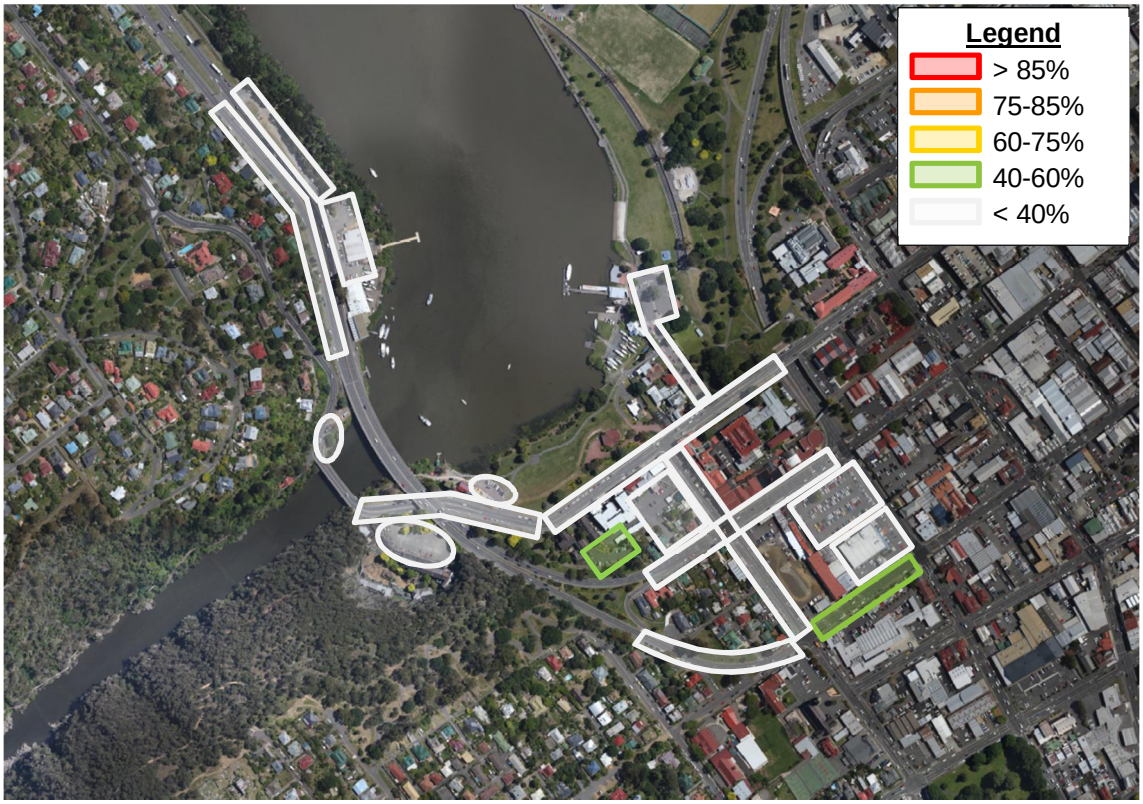
Location	Parking Controls	Parking Supply
Brisbane St East	Bus Zone/No Standing	-
	Total	**0**
Margaret St	15 min 8:30am-5:30pm Mon-Fri, 8:30am – 12pm Sat	2
	Bus Zone 8am-8:30am & 3:15-4pm School Days	12
	2P 8am-3:30pm Mon-Fri; Bus Zone 3:30-4pm School Days, Resident Permit Area D	3
	2P 8am-5pm Mon-Fri, Resident Permit Area D	3
	Total	**20**
York St	1/4P 8:30am-5pm Mon-Fri; 11am-4pm Sat-Sun	2
	Unrestricted	23
	Total	**25**
West Tamar Hwy South	Unrestricted	21
	Total	**21**
Brisbane St West	No Standing 8am-9:30am; Unrestricted	4
	2P 8am-5pm Mon-Fri, Resident Permit Area D	8
	Total	**12**
Margaret St North	¼ P Daily	4
	Clearway 8am-9:30am & 4pm-6pm Mon-Fri; Unrestricted	9
	Total	**13**
Paterson St	3P 8am-5pm Mon-Fri	16
	3P 9:30am-5:30pm Mon-Fri; Clearway 8am-9:30am Mon-Fri	12
	3P Meter 9am-5:30pm Mon-Fri, 9am-11:30am Sat	17
	P 5 min 8am-9am; 1/2 P Meter 9am-6:30 pm Mon-Fri, 9am-2pm Sat	6
	1/2P 8am-6:30pm Mon-Fri, 8am-2pm Sat	4
	Total	**55**
Bridge Rd	3P 8am-5pm Mon-Fri	17

Location	Parking Controls	Parking Supply
	1P 9am-5pm Mon-Fri	5
	1/4P 8am-6pm Mon-Fri, 8am-12pm Sat	2
	Total	**24**
Stillwater	2P	7
	Unrestricted	3
	Disabled	1
	Ritchies Mill Patrons only	4
	Still Water Kitchen Garden	3
	Total	**18**
TRC Hotel	Unrestricted	30
	Total	**30**
Penny Royal Hotel	Unrestricted	28
	Reserved	1
	Total	**29**
Trevallyn Rd	3P 8am-5pm Mon-Fri	2
	Total	**2**
Park St	3P 9am-5:30pm Mon-Fri	81
	5 min	1
	¼ P 9am-5:30pm Mon-Fri	2
	Disabled	1
	Vehicles with Boats and Trailers Only	2
	Total	**87**
Officeworks	1P (Tickets)	41
	Unlimited (Tickets)	21
	Reserved	16
	Disabled	1
	Total	**79**

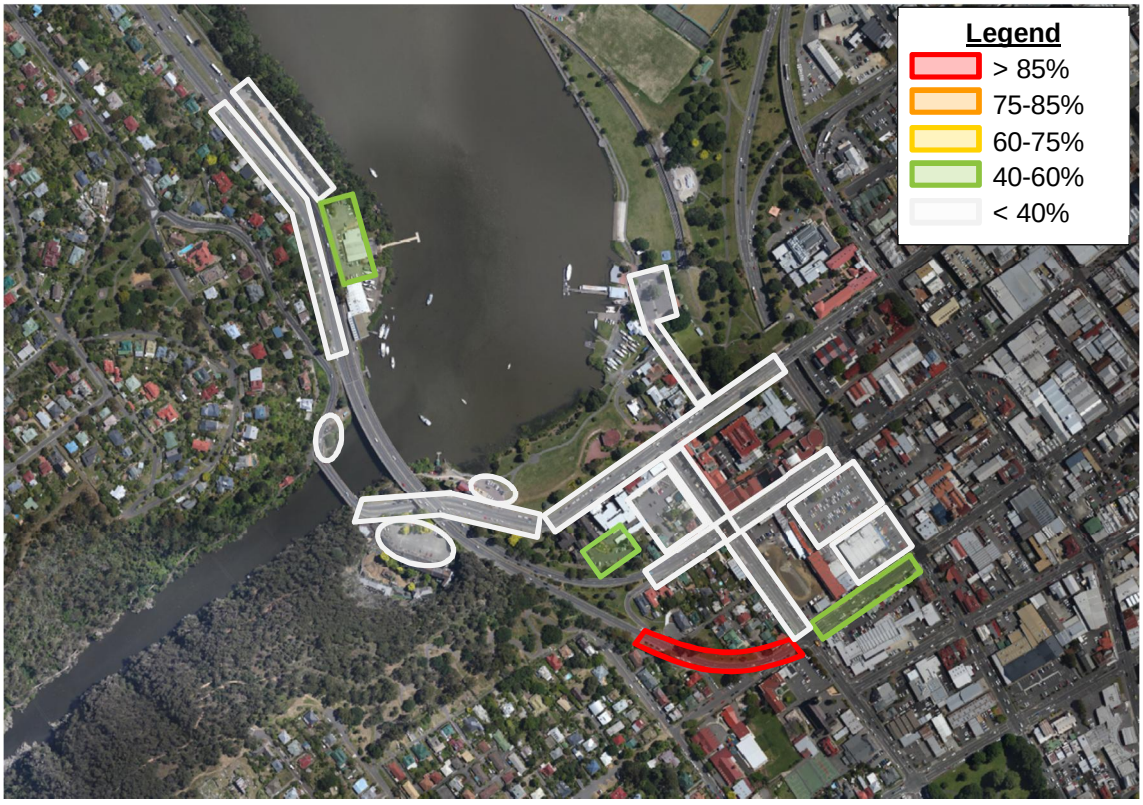
Location	Parking Controls	Parking Supply
Tamar Marine Laneway	Unrestricted	30
	Total	**30**
Tamar Marine Car Park	Unrestricted	48
	Total	**48**
West Tamar Hwy North	Unrestricted	49
	Total	**49**
Bathurst St Car Park	Unlimited (Tickets)	238
	Disabled	2
	Total	**240**
Penny Royal	Unrestricted	64
	Total	**64**
	Total Spaces in Study Area	**846**

Appendix B – Spatial Parking Distribution

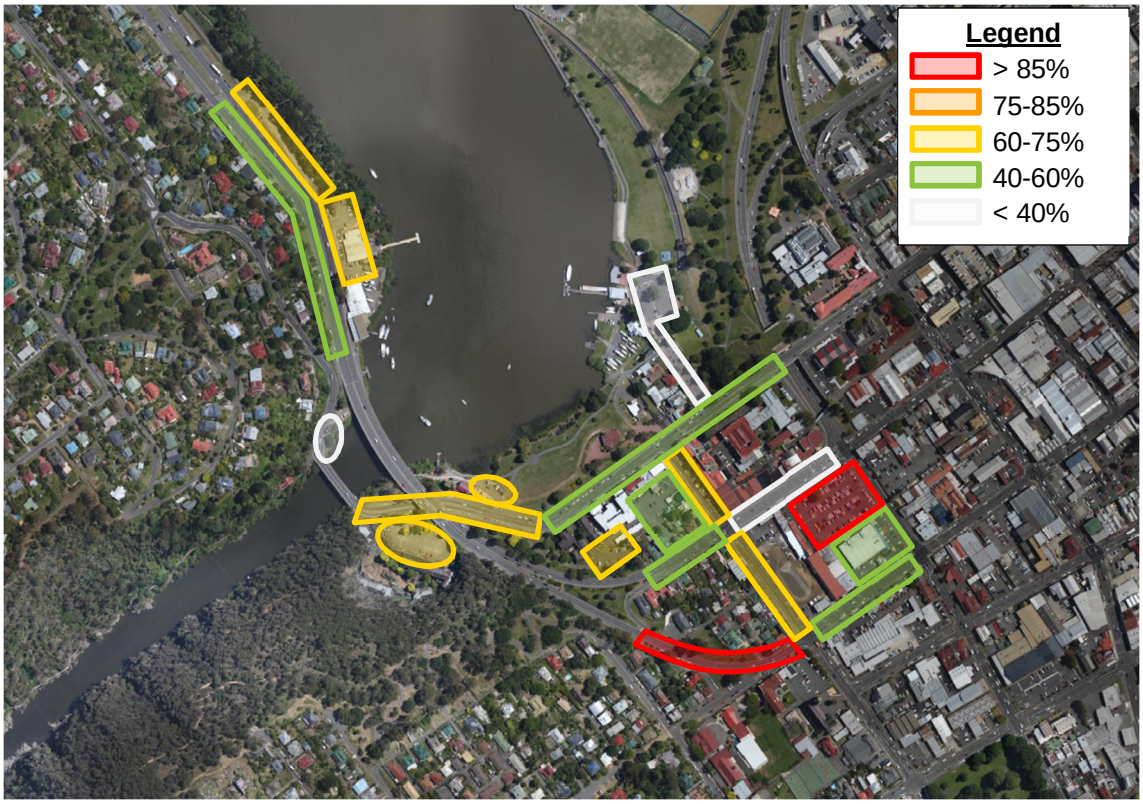
Parking Occupancy (%) at 7:00 am Thursday



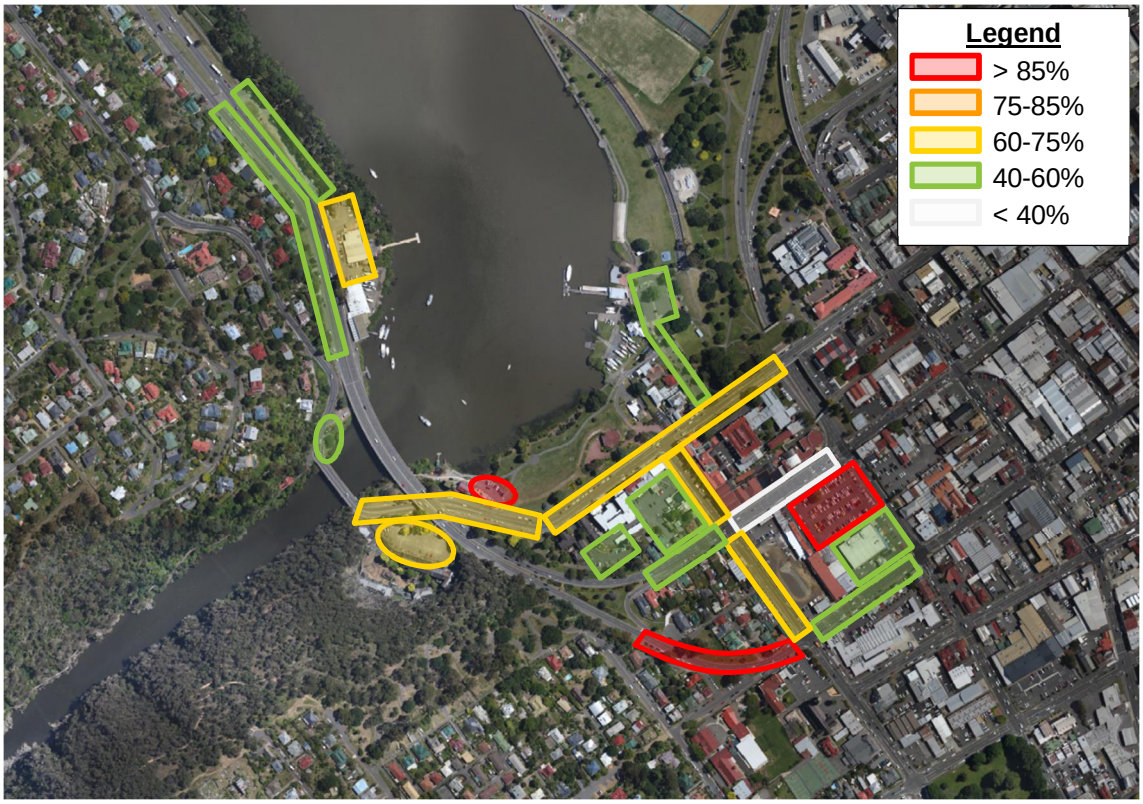
Parking Occupancy (%) at 8:00 am Thursday



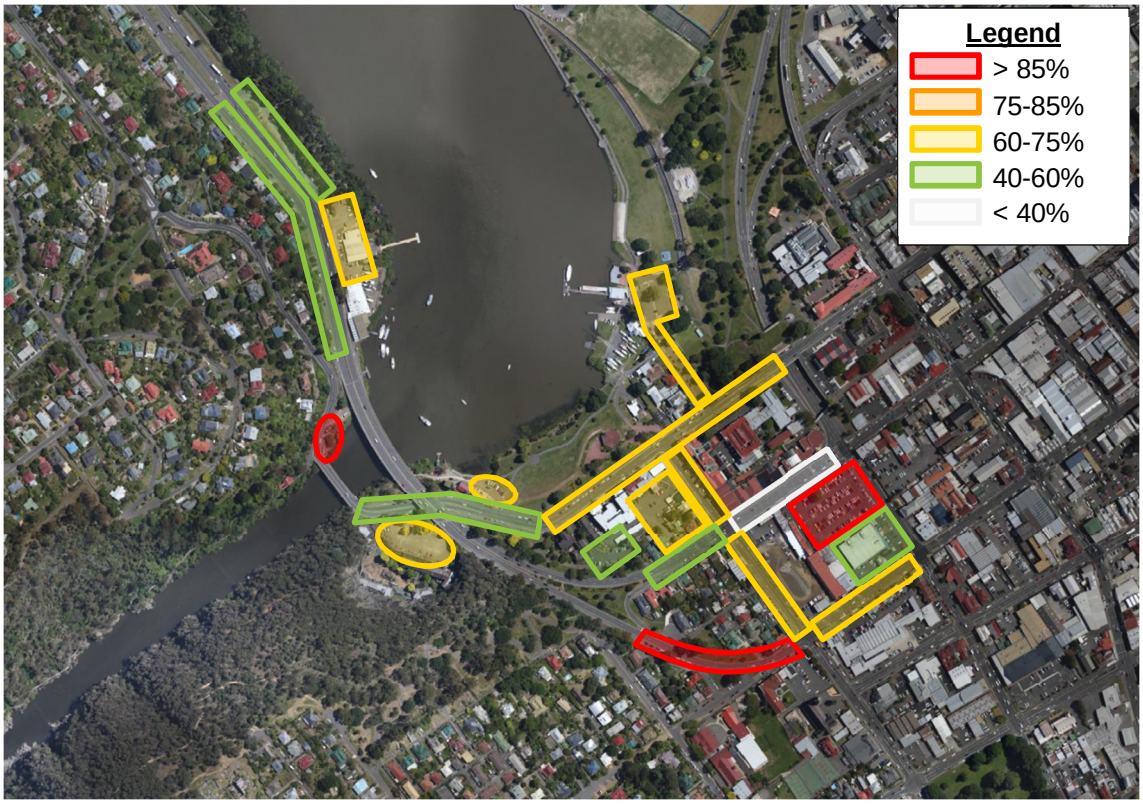
Parking Occupancy (%) at 9:00 am Thursday



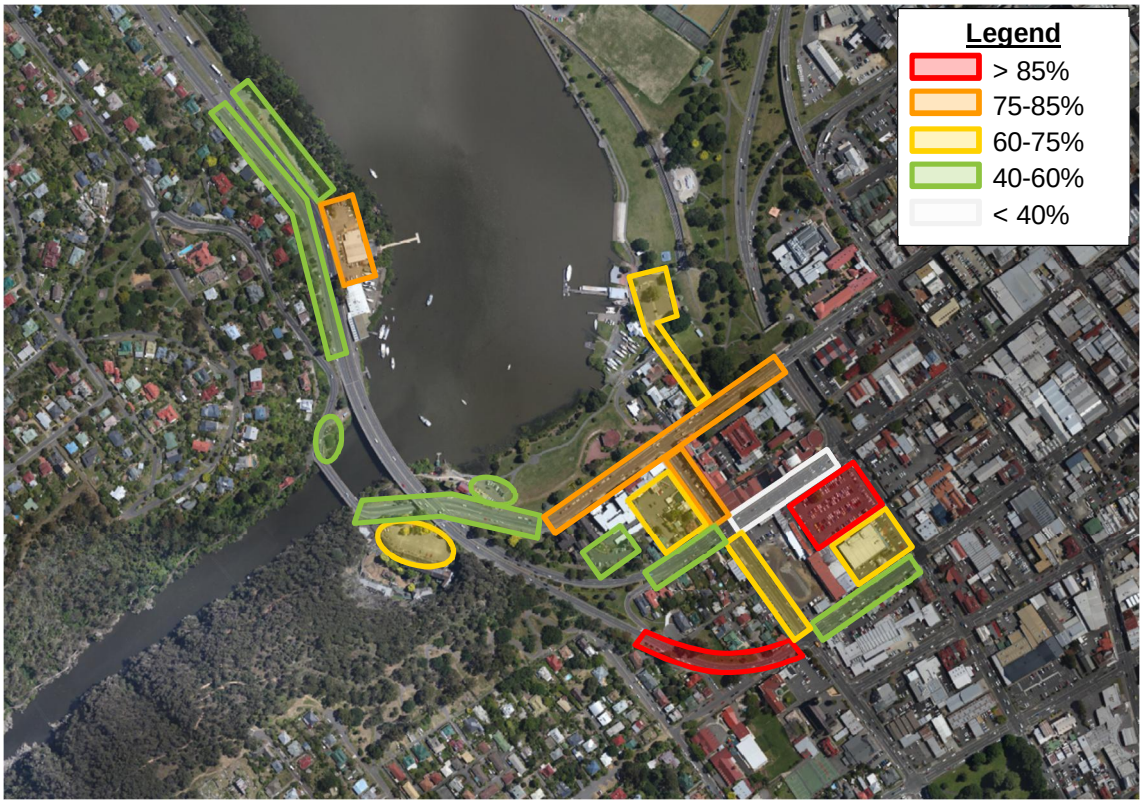
Parking Occupancy (%) at 10:00 am Thursday



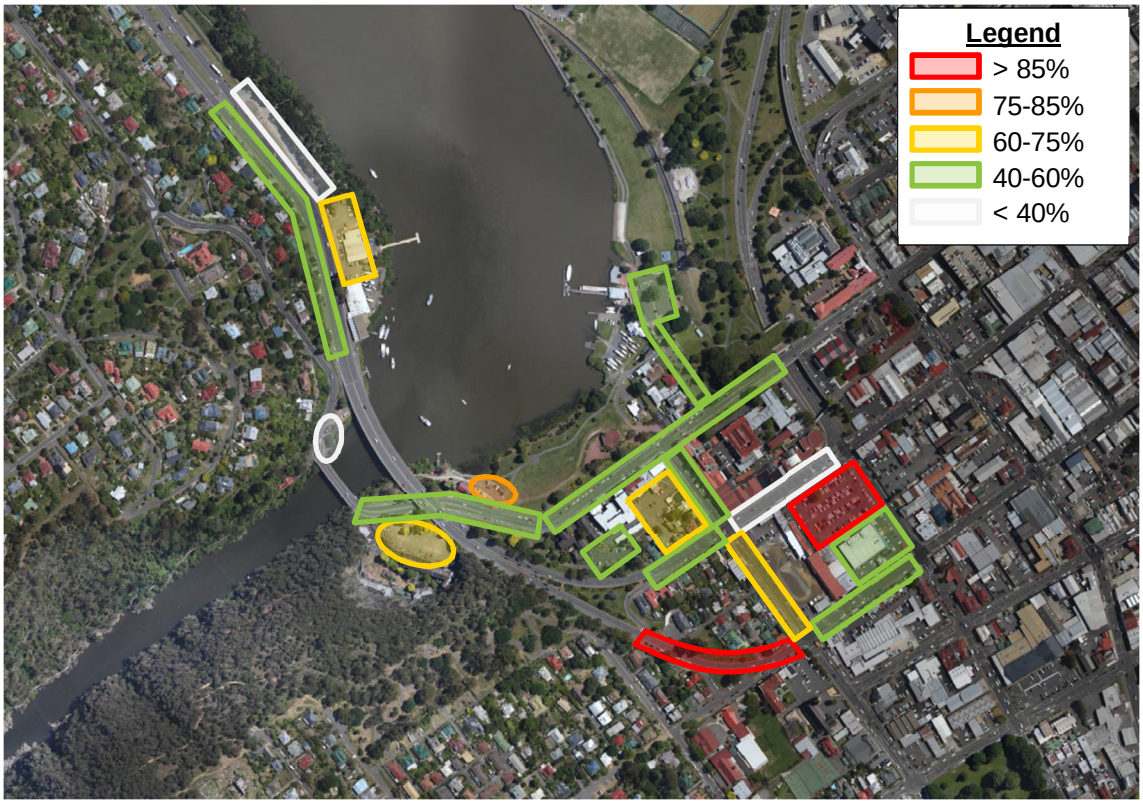
Parking Occupancy (%) at 11:00 am Thursday



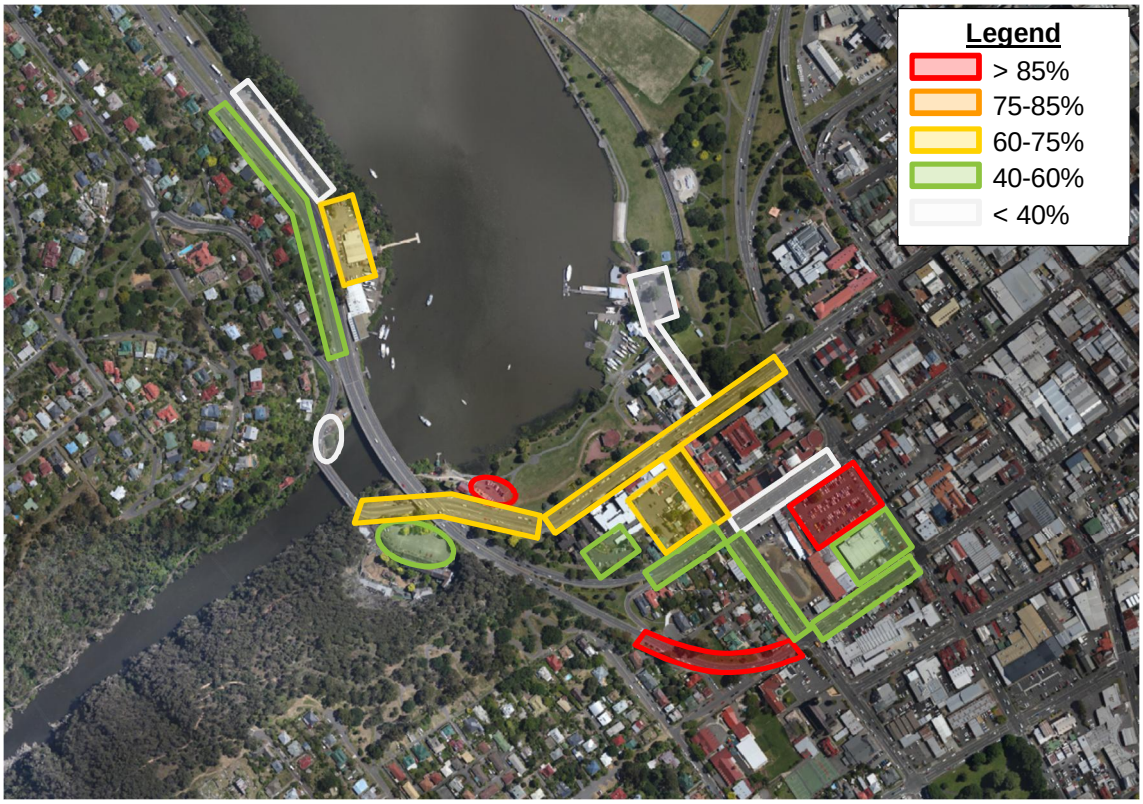
Parking Occupancy (%) at 12:00 pm Thursday



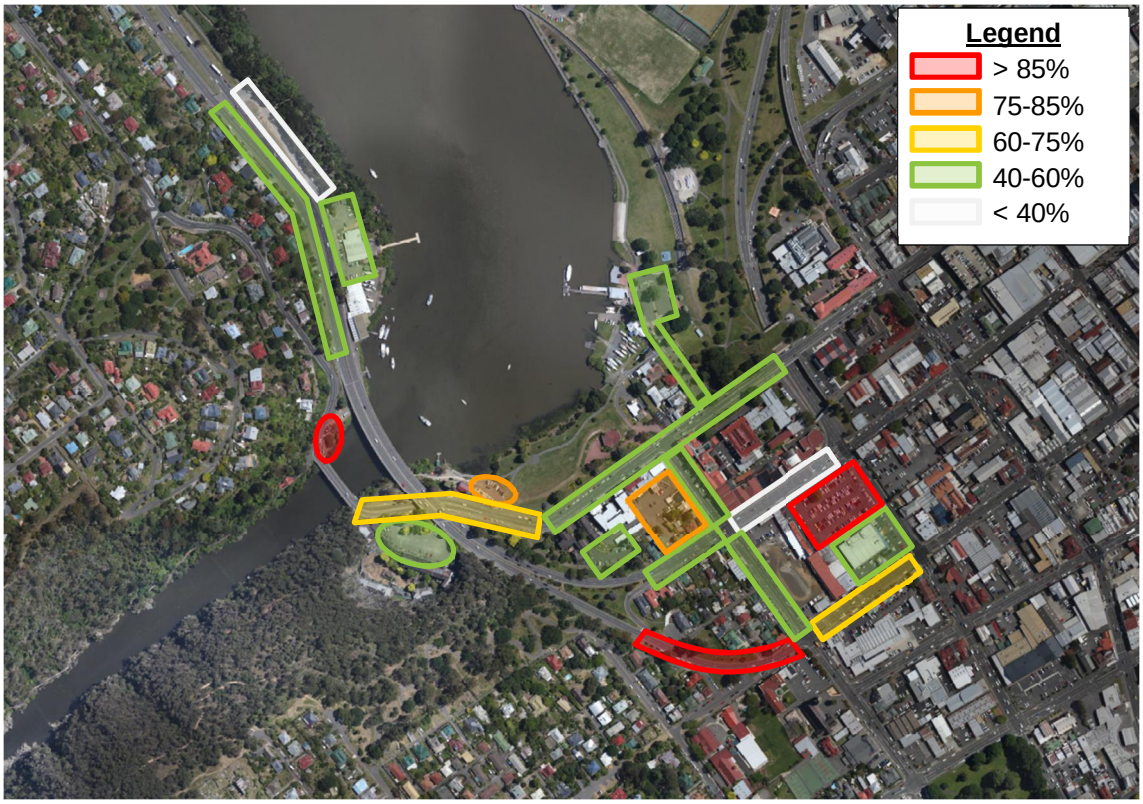
Parking Occupancy (%) at 1:00 pm Thursday



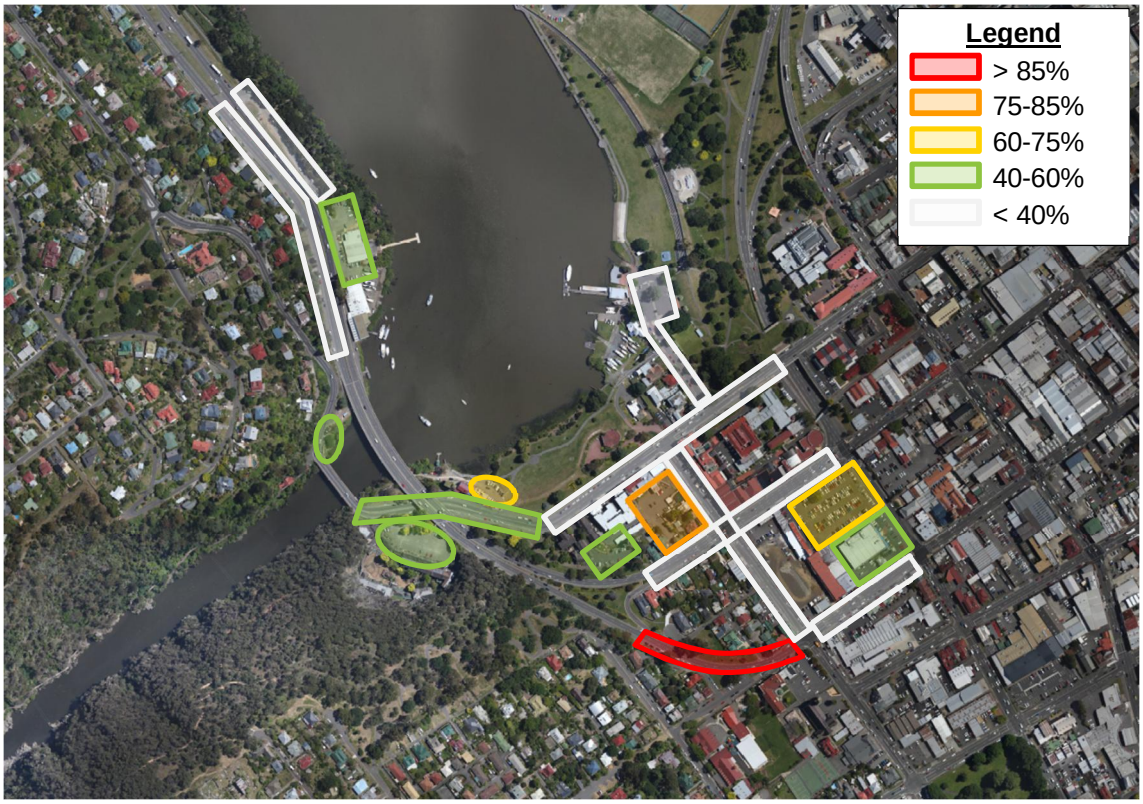
Parking Occupancy (%) at 2:00 pm Thursday



Parking Occupancy (%) at 3:00 pm Thursday

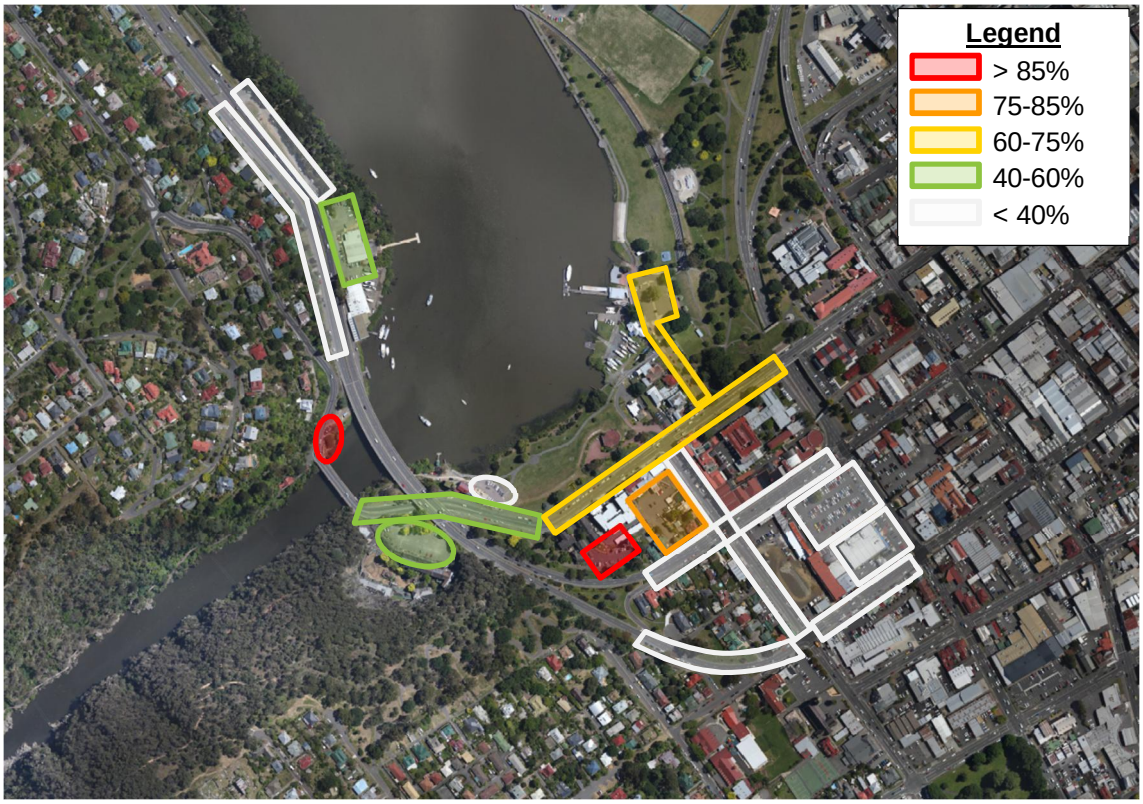


Parking Occupancy (%) at 4:00 pm Thursday

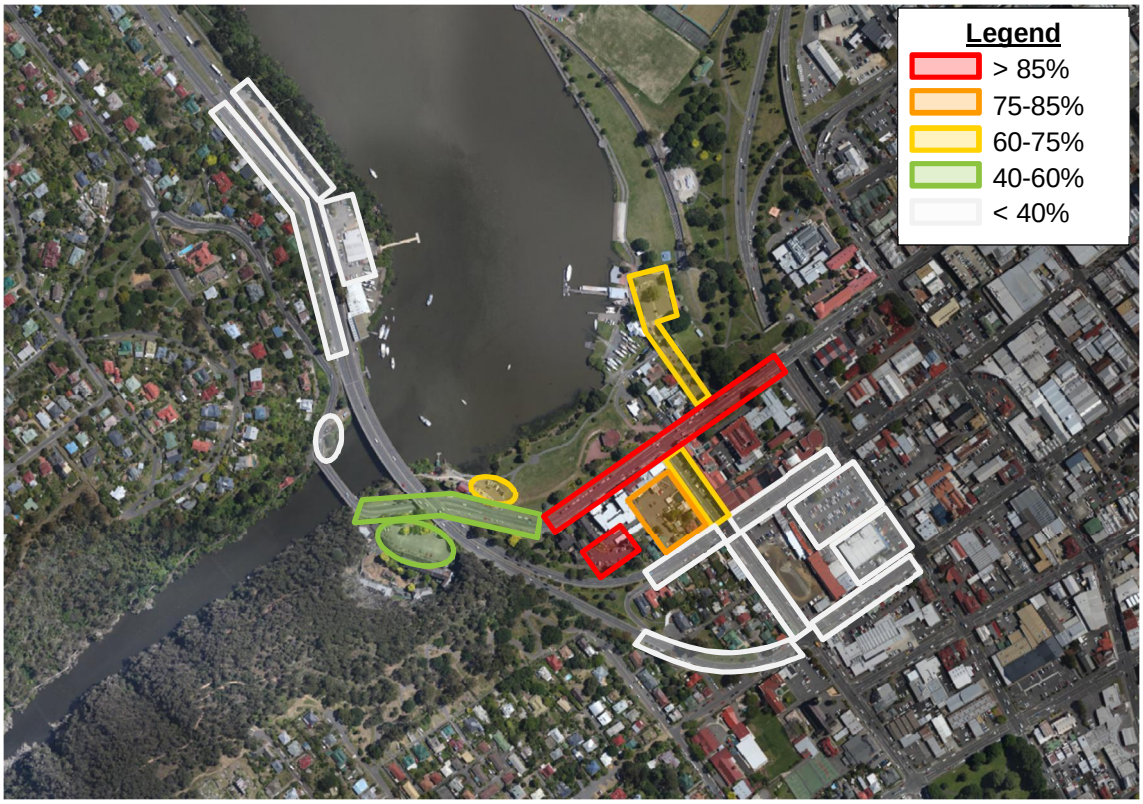


Parking Occupancy (%) at 5:00 pm Thursday

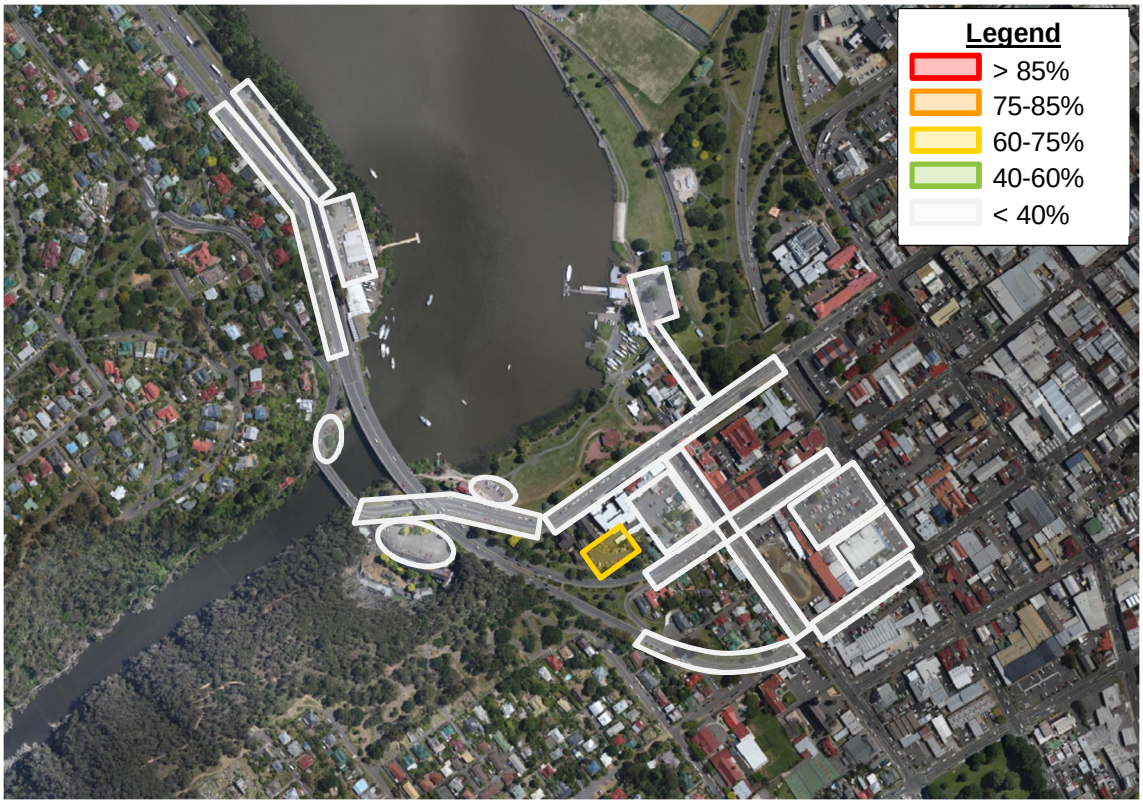
Parking Occupancy (%) at 6:00 pm Thursday



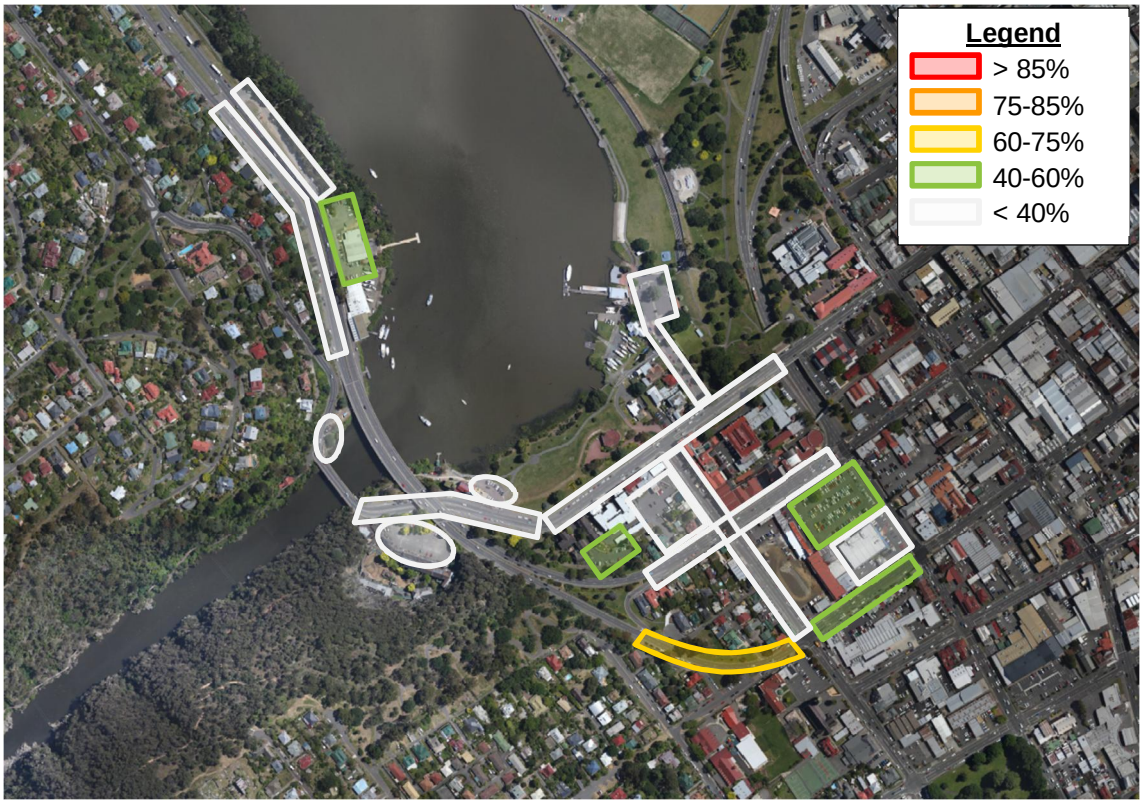
Parking Occupancy (%) at 7:00 pm Thursday



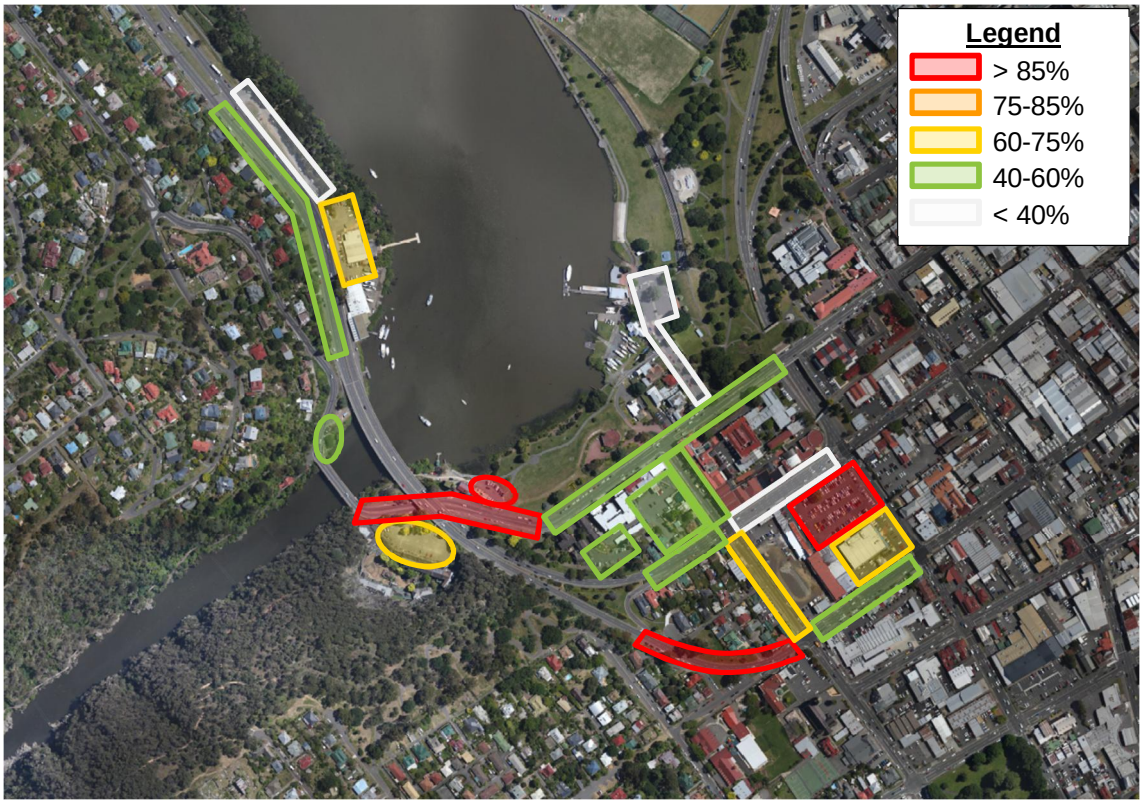
Parking Occupancy (%) at 7:00 am Friday



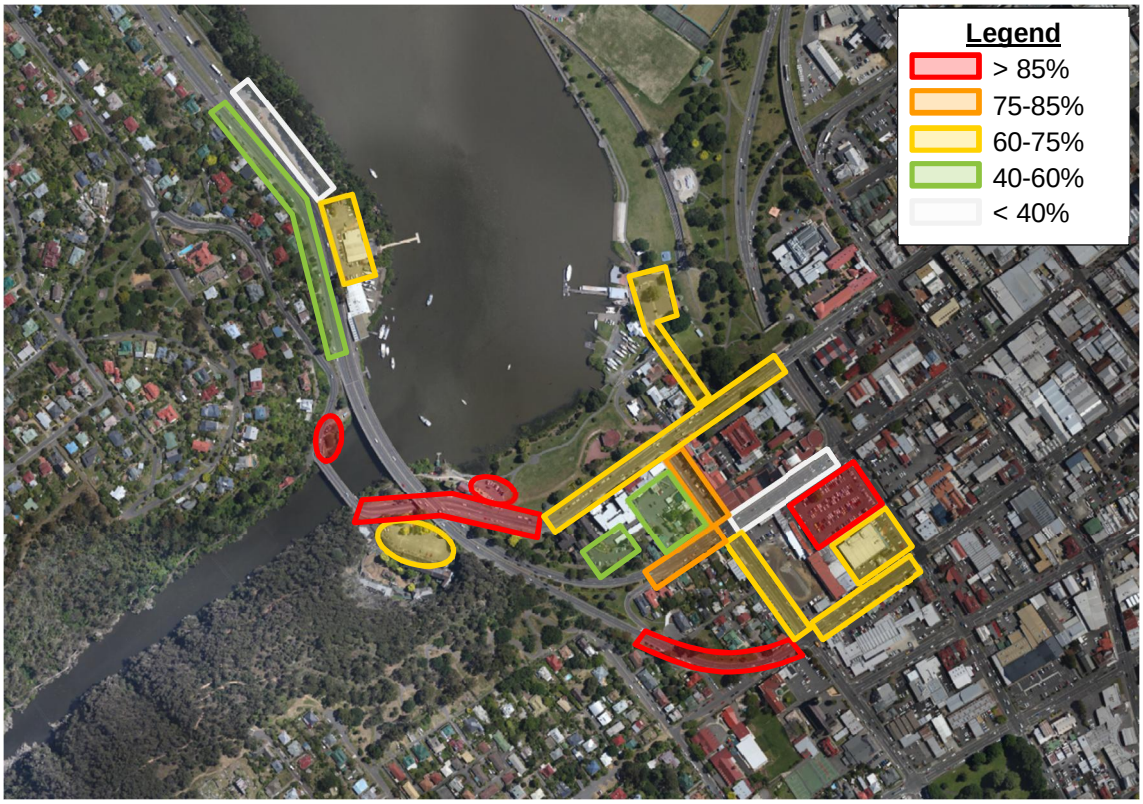
Parking Occupancy (%) at 8:00 am Friday



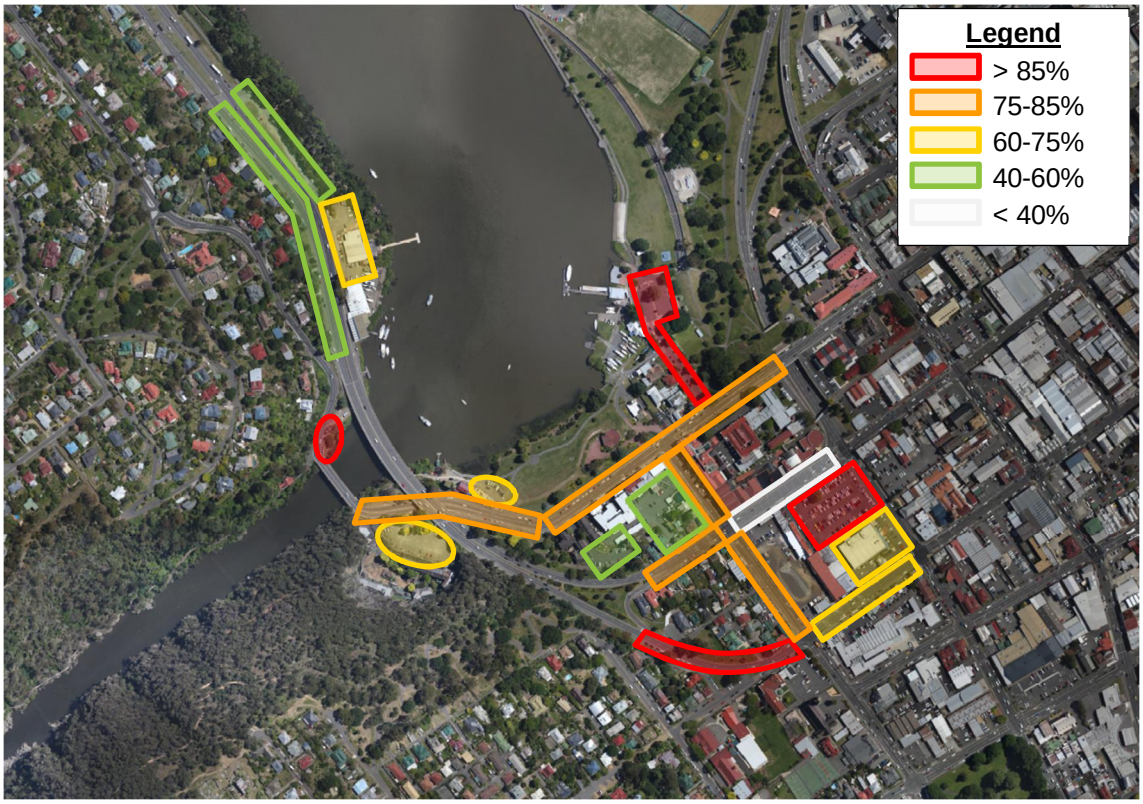
Parking Occupancy (%) at 9:00 am Friday



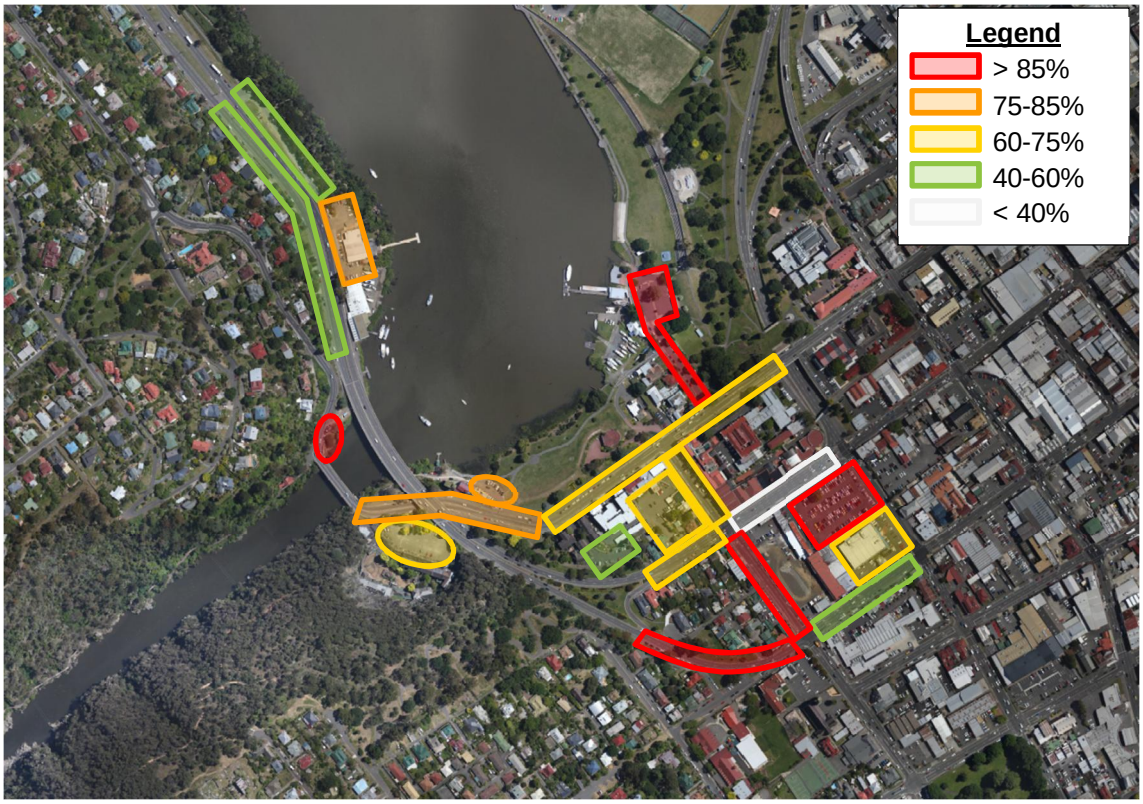
Parking Occupancy (%) at 10:00 am Friday



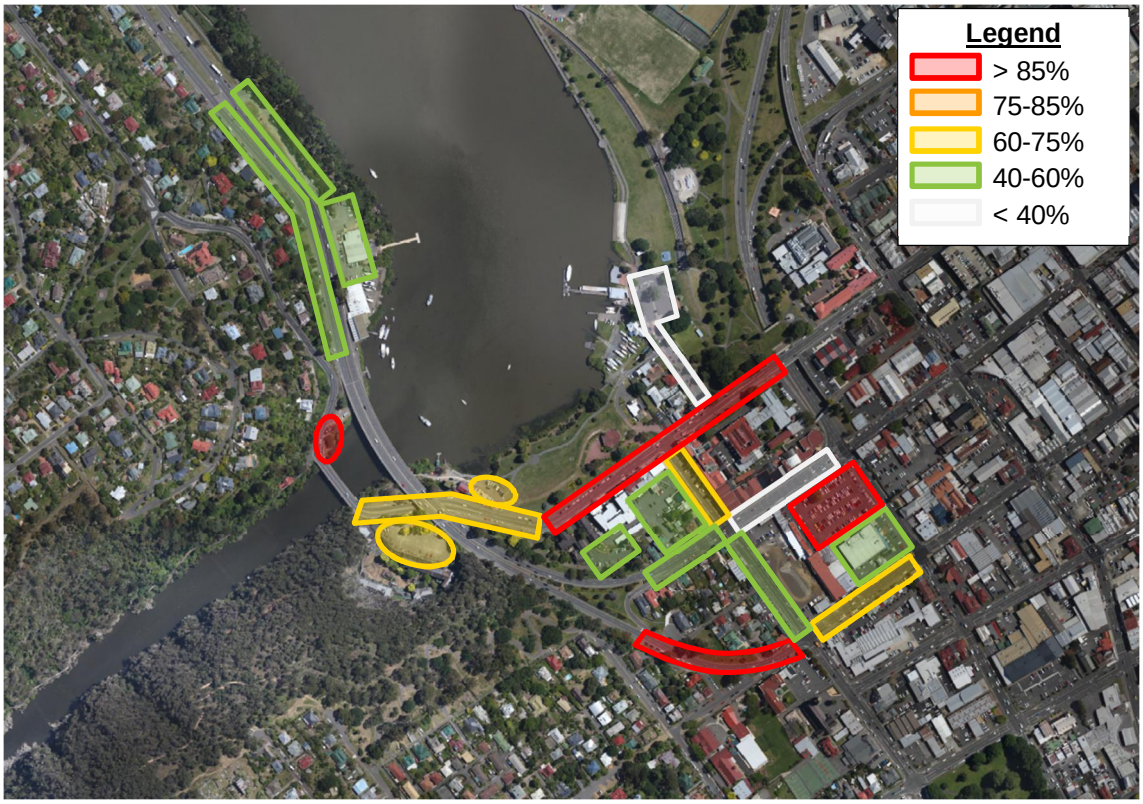
Parking Occupancy (%) at 11:00 am Friday



Parking Occupancy (%) at 12:00 pm Friday

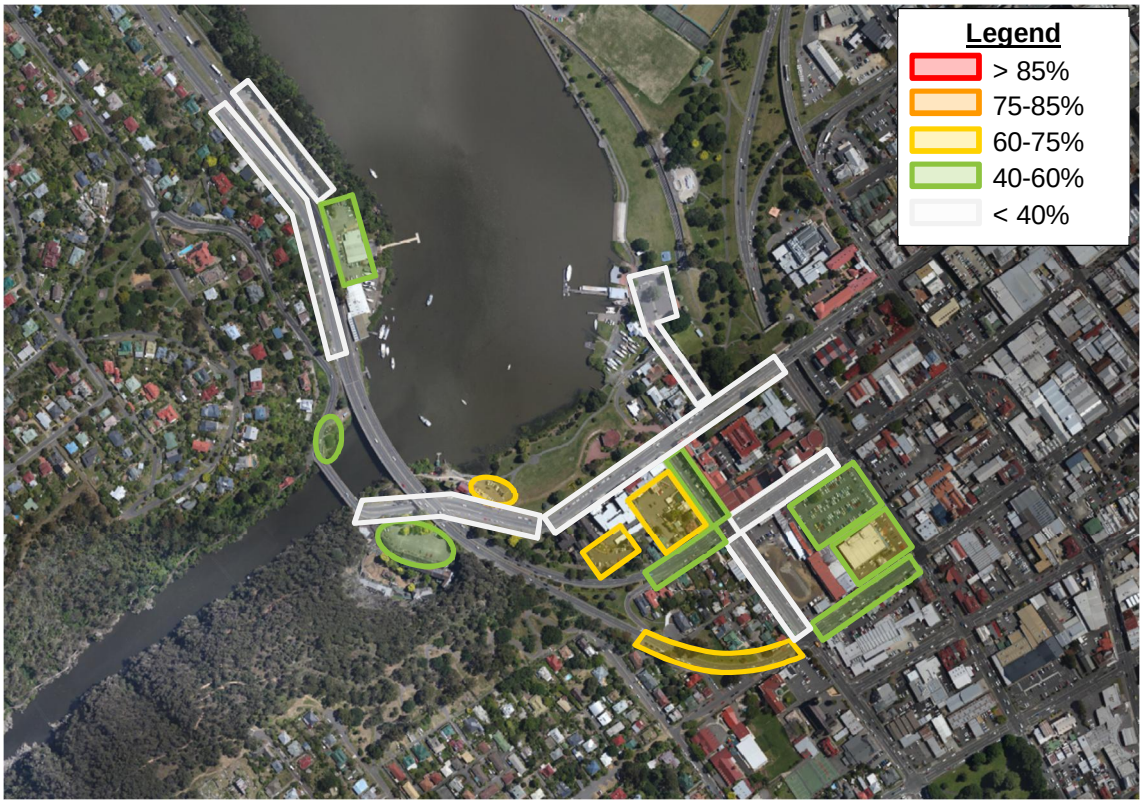


Parking Occupancy (%) at 1:00 pm Friday



Parking Occupancy (%) at 2:00 pm Friday

Parking Occupancy (%) at 3:00 pm Friday

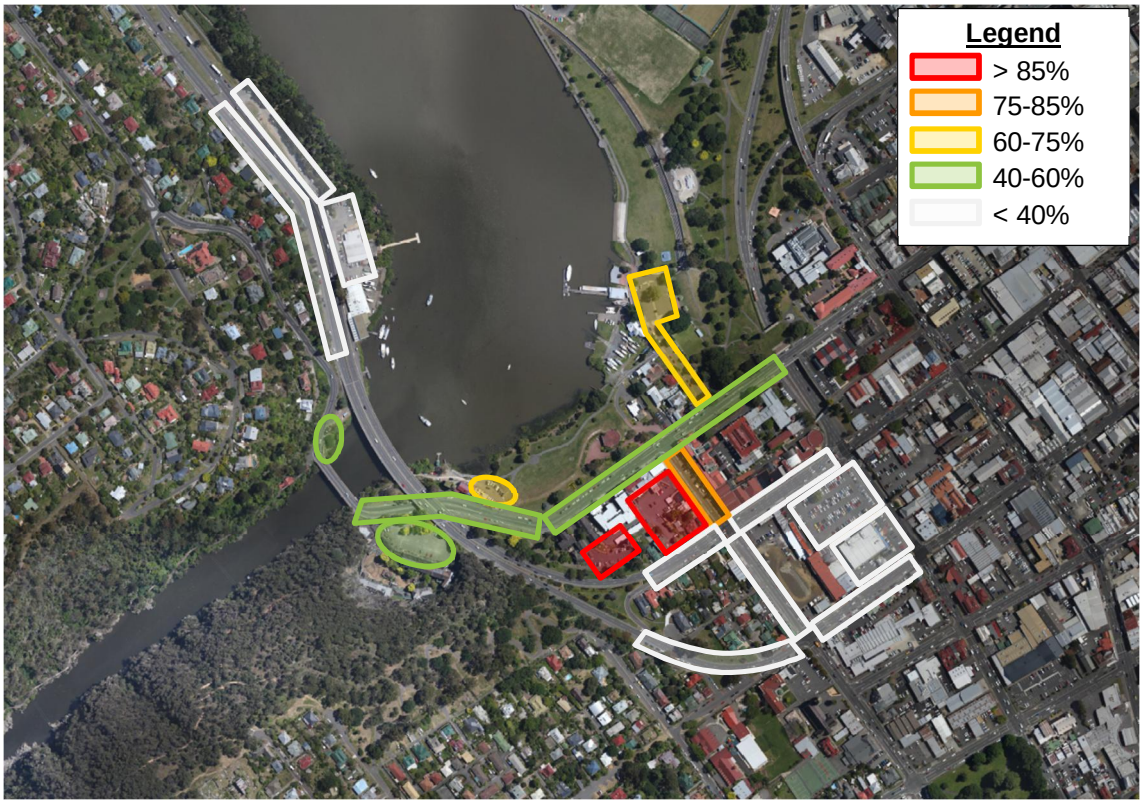


Parking Occupancy (%) at 4:00 pm Friday

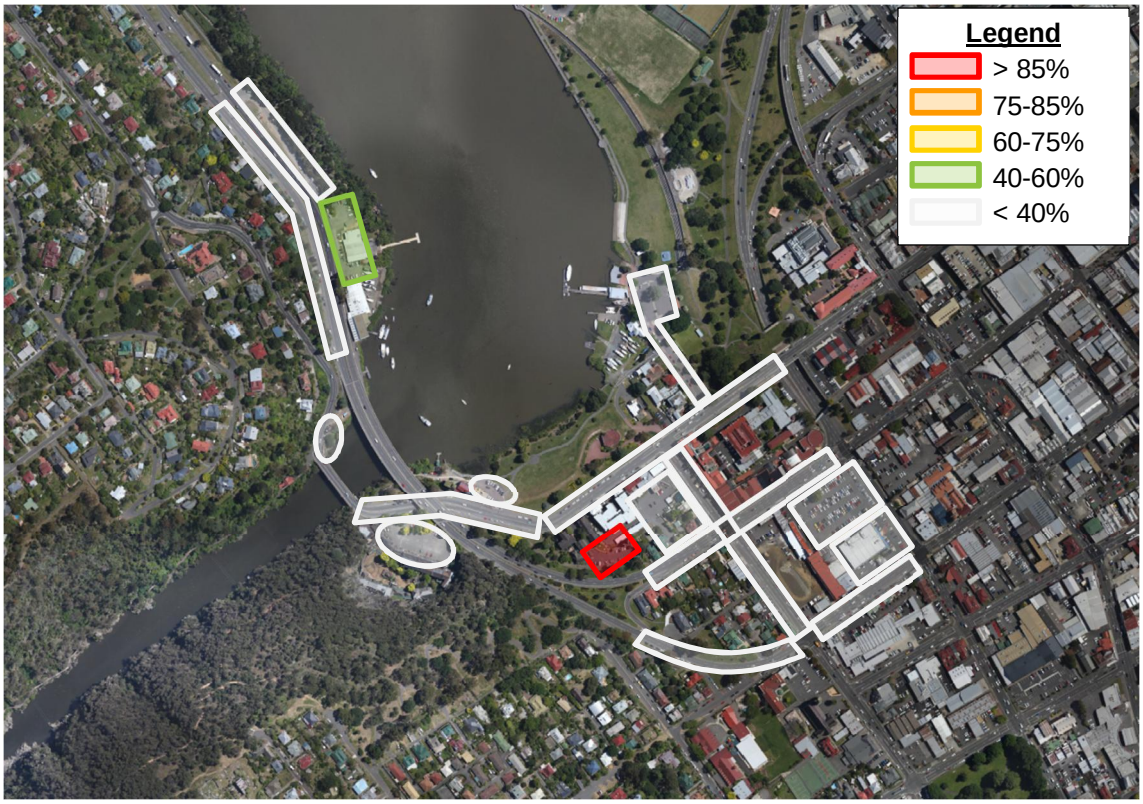
Parking Occupancy (%) at 5:00 pm Friday

Parking Occupancy (%) at 6:00 pm Friday

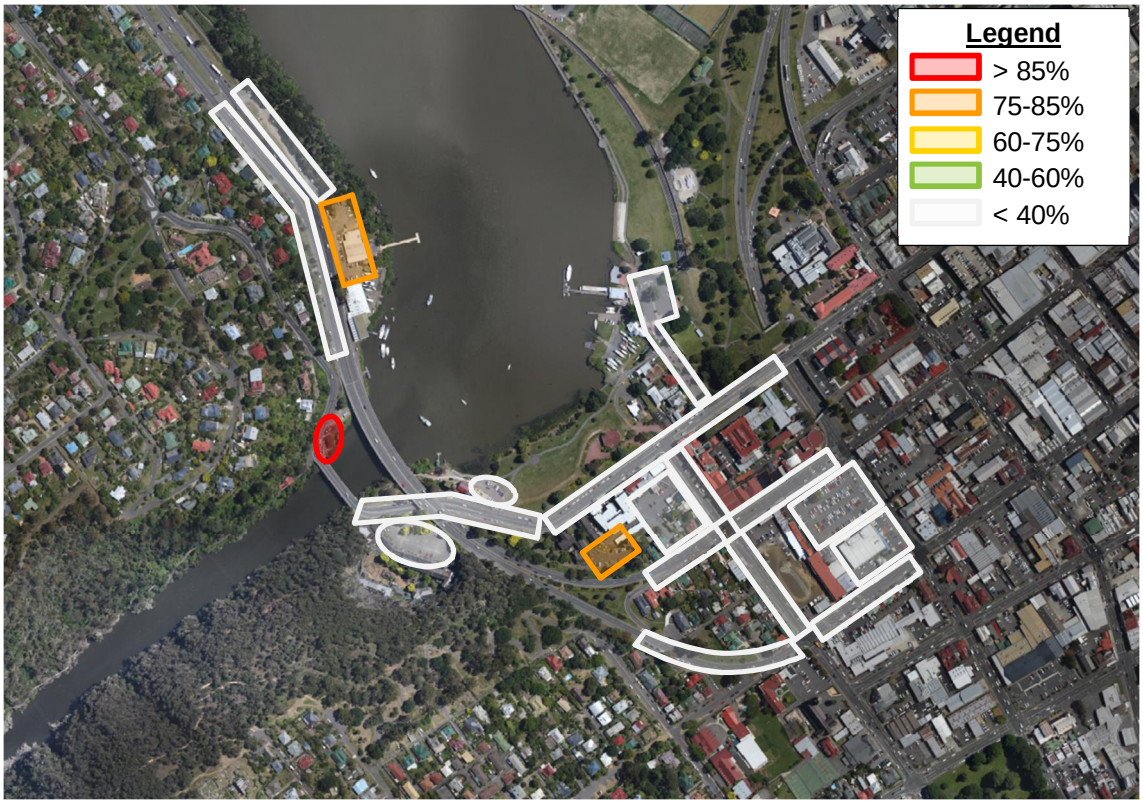
Parking Occupancy (%) at 7:00 pm Friday



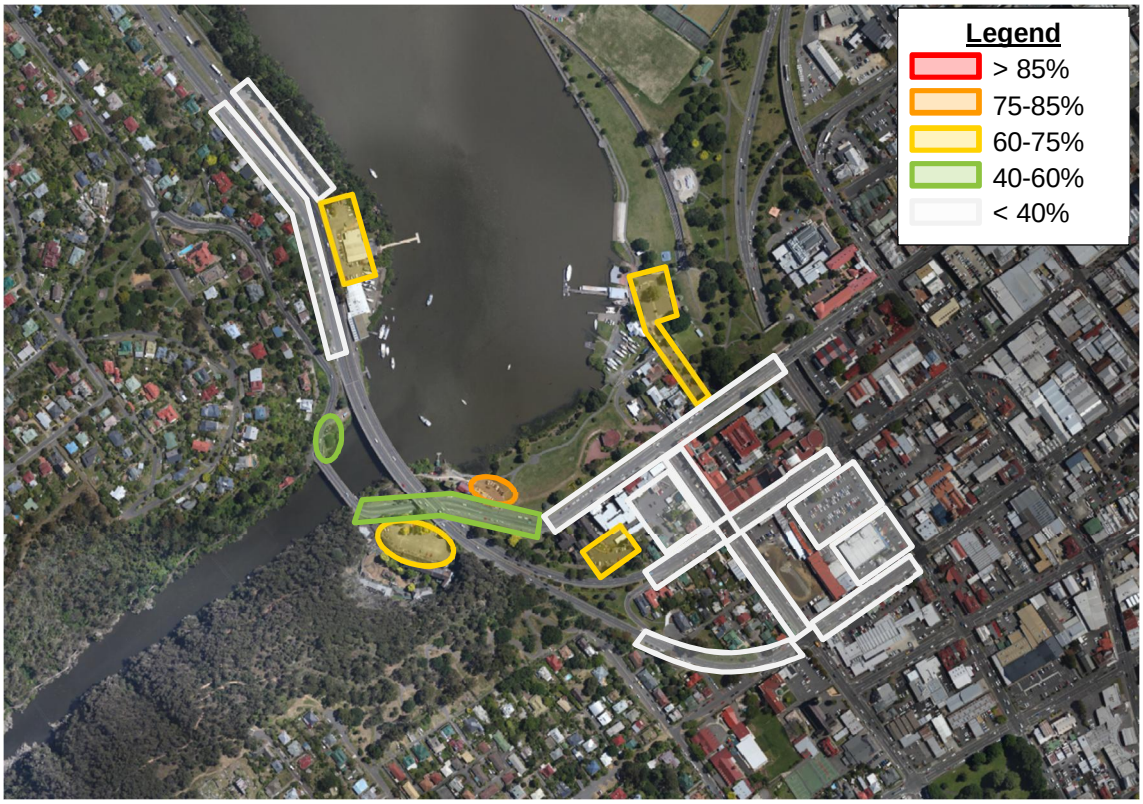
Parking Occupancy (%) at 7:00 am Saturday



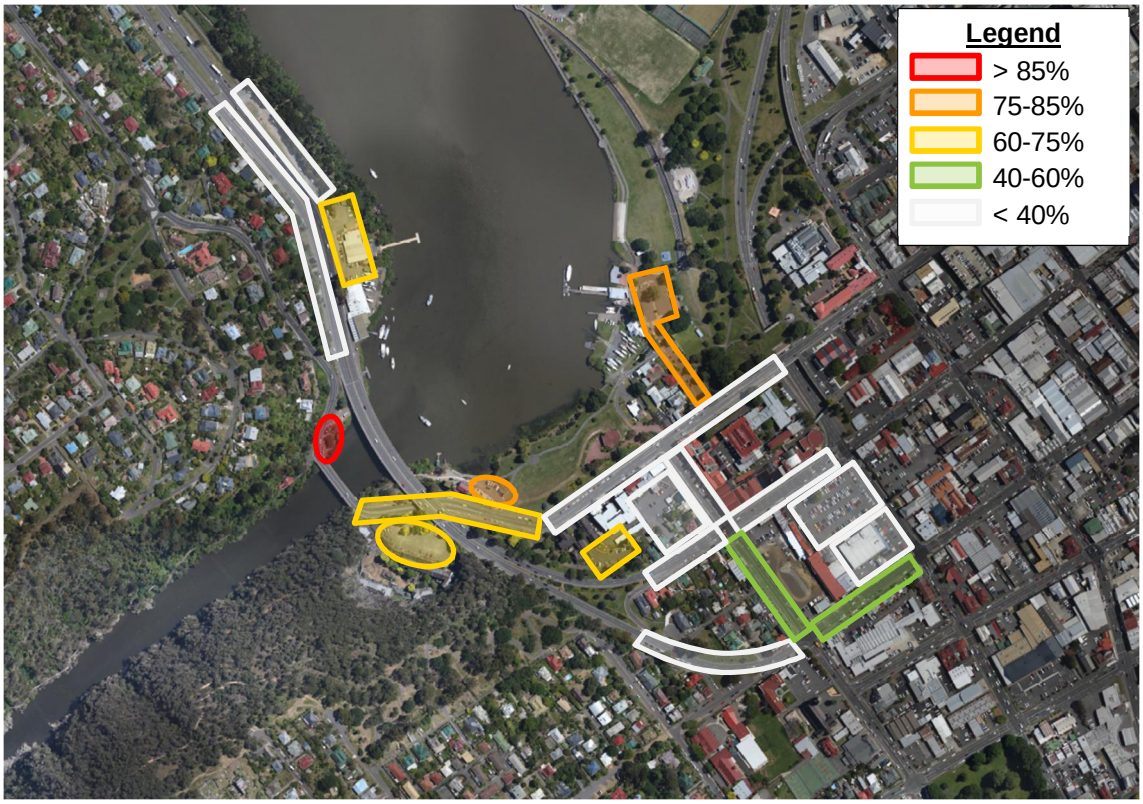
Parking Occupancy (%) at 8:00 am Saturday



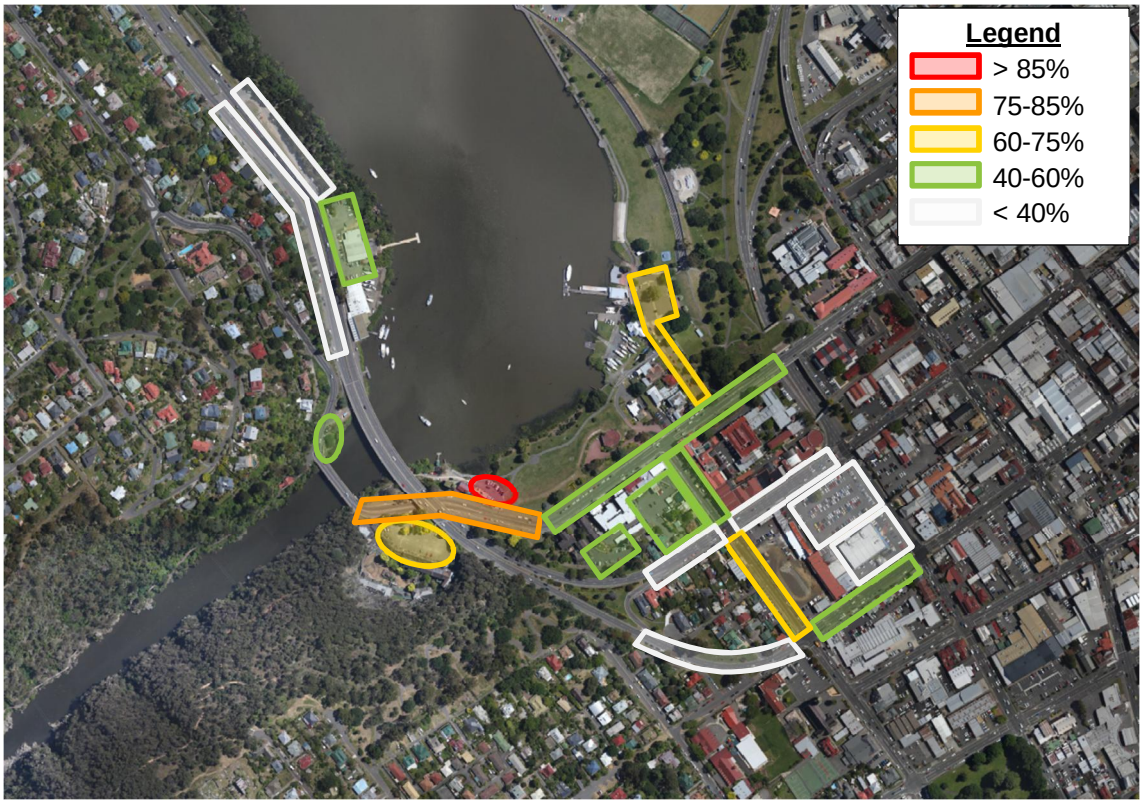
Parking Occupancy (%) at 9:00 am Saturday



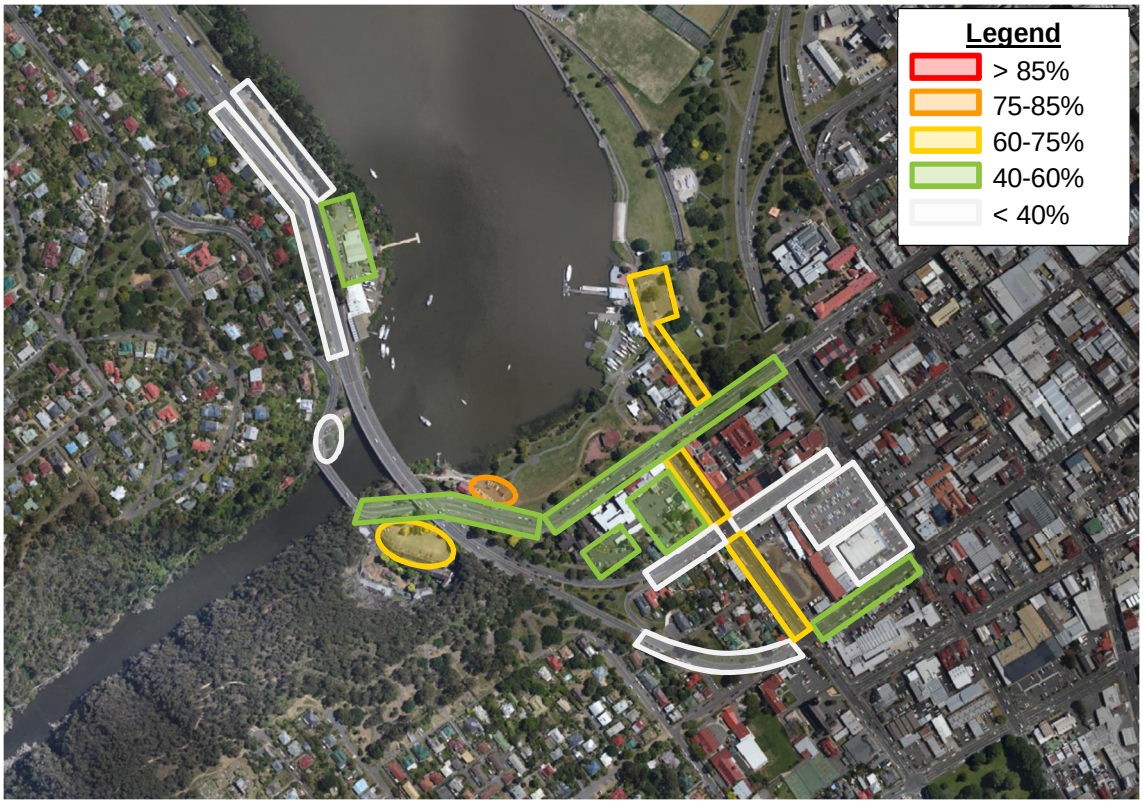
Parking Occupancy (%) at 10:00 am Saturday



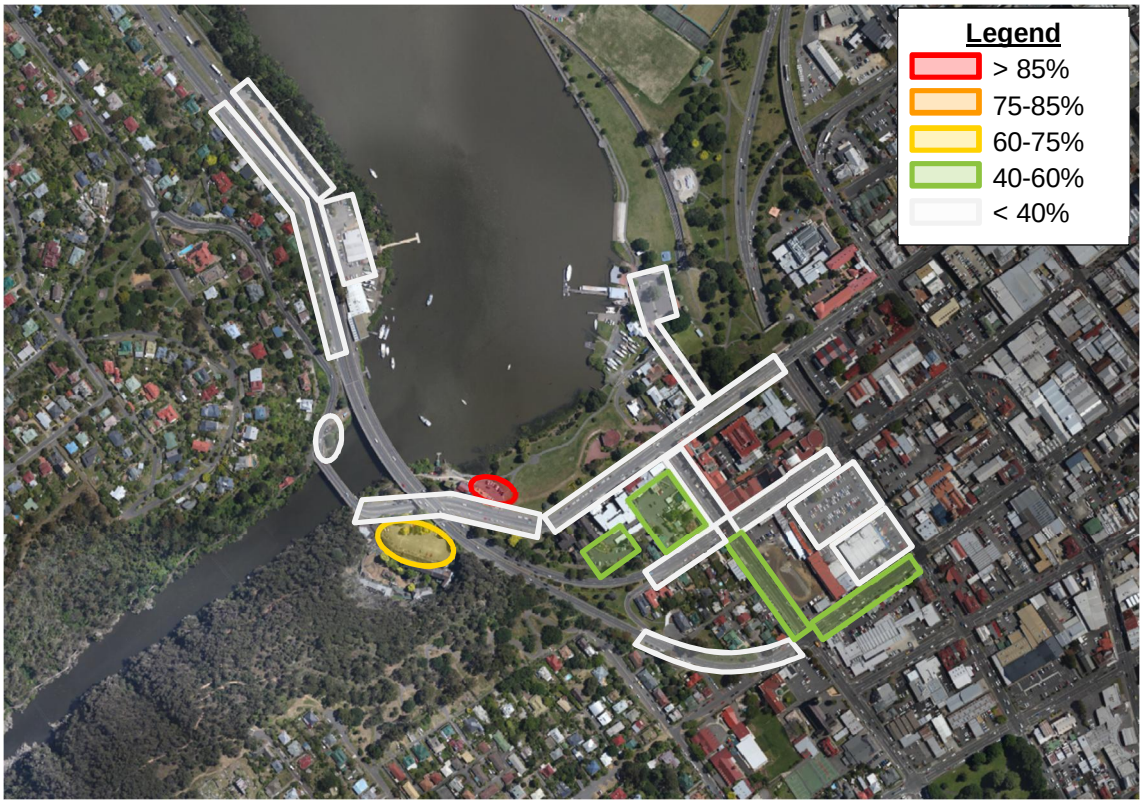
Parking Occupancy (%) at 11:00 am Saturday



Parking Occupancy (%) at 12:00 pm Saturday



Parking Occupancy (%) at 1:00 pm Saturday

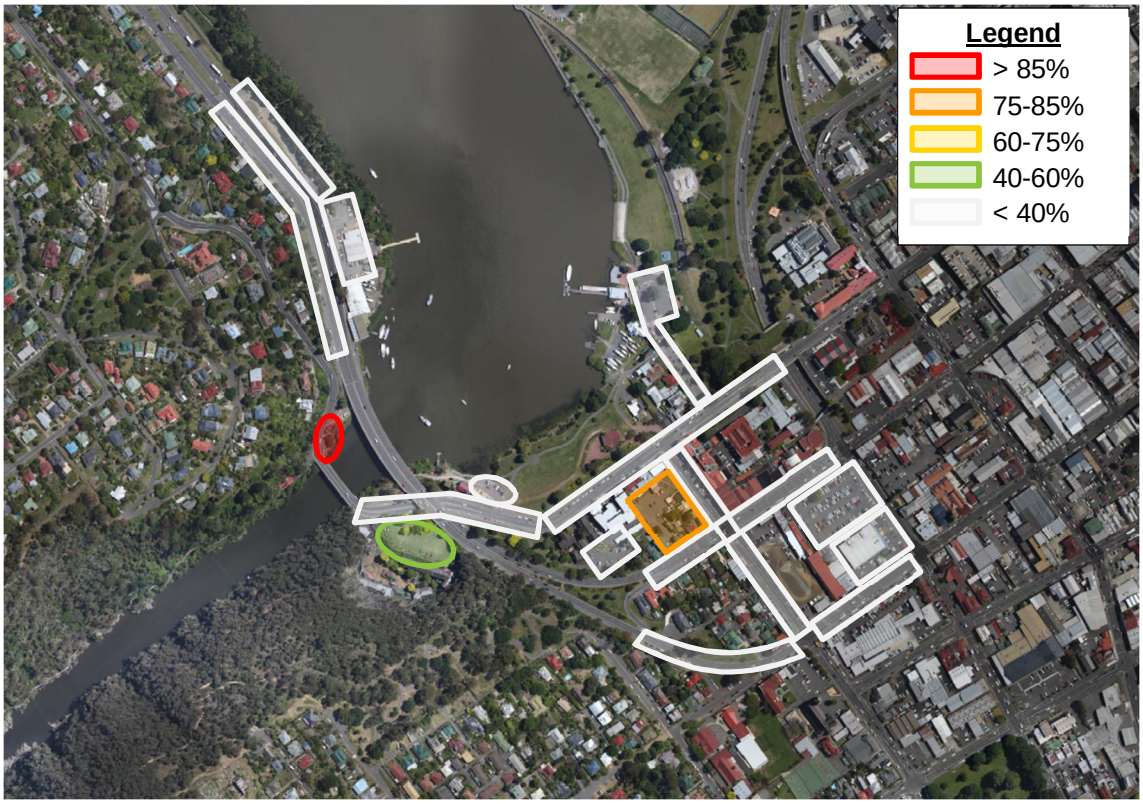


Parking Occupancy (%) at 2:00 pm Saturday

Parking Occupancy (%) at 3:00 pm Saturday

Parking Occupancy (%) at 4:00 pm Saturday

Parking Occupancy (%) at 5:00 pm Saturday



Parking Occupancy (%) at 6:00 pm Saturday

Parking Occupancy (%) at 7:00 pm Saturday

Appendix C – Rapid Appraisal Scoring

Option	Supply	Convenience	Amenity Impact	Traffic Impact	Cost	Score
	15%	**10%**	**15%**	**30%**	**30%**	
7. Expand West Tamar Walking Trail car park	1	1	3	3	3	**2.5**
8. Formalise parking along Tamar Marine laneway	0	1	3	3	3	**2.4**
13. New public car park at Kings Park (east)	2	3	3	2	2	**2.3**
14. New public car park along Paterson Street	3	3	2	2	2	**2.3**
9. Reinstate on-street parking along West Tamar Highway inbound	3	1	3	0	3	**1.9**
15. Expand Stillwater car park	3	3	1	2	1	**1.8**
16. Convert Paterson Street to 90 degree angle parking	2	3	2	1	2	**1.8**
10. Construct a second level on the Penny Royal (quarry site) car park	1	2	1	3	0	**1.4**
12. New public car park at Kings Park (west)	2	3	1	1	1	**1.4**
11b. Construct new car parks at Zig Zag Reserve accessed from Brisbane Street West and West Tamar Highway	3	2	2	1	0	**1.3**
11a. Construct new car park at Zig Zag Reserve accessed from West Tamar Highway	3	2	1	1	0	**1.1**

Appendix D – Concept Design and Cost Estimate

0 5 10 15m
SCALE 1:500 AT ORIGINAL SIZE

N

GHD

Launceston City Council
Kings Park - Bridge Road Area Parking Study
Option 13
Layout Plan

Job Number 32-17463
Revision B
Date JAN. '15

Figure C1

Level 2, 102 Cameron St, Launceston TAS 7250 Australia T 61 3 6332 5500 F 61 3 6332 5555 E lstmail@ghd.com W www.ghd.com

Plot Date: 12 February 2015 - 4:10 PM Plotted by: Mark Petrusma Cad File No: G:\32\17463\CADD\Drawings\32-17463-FIG_C1-C4.dwg

0 5 10 15m
SCALE 1:500 AT ORIGINAL SIZE

N

GHD

Launceston City Council
Kings Park - Bridge Road Area Parking Study
Option 14
Layout Plan

Job Number 32-17463
Revision B
Date JAN. '15

Figure C2

Level 2, 102 Cameron St, Launceston TAS 7250 Australia T 61 3 6332 5500 F 61 3 6332 5555 E lstmail@ghd.com W www.ghd.com

Plot Date: 12 February 2015 - 4:11 PM Plotted by: Mark Petrusma Cad File No: G:\32\17463\CADD\Drawings\32-17463-FIG_C1-C4.dwg

0 5 10 15m
SCALE 1:500 AT ORIGINAL SIZE

N

GHD

Launceston City Council
Kings Park - Bridge Road Area
Parking Study
Option 7 & 8
Layout Plan

Job Number 32-17463
Revision B
Date JAN. '15

Figure C3

Level 2, 102 Cameron St, Launceston TAS 7250 Australia T 61 3 6332 5500 F 61 3 6332 5555 E lstmail@ghd.com W www.ghd.com

Plot Date: 17 February 2015 - 10:58 AM Plotted by: Mark Petrusma Cad File No: G:\32\17463\CADD\Drawings\32-17463-FIG_C1-C4.dwg

KINGS PARK - BRIDGE ROAD PARKING STUDY

SCHEDULE OF RATES

(Rates are exclusive of GST)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	RATE $	AMOUNT $
	OPTION 13				
1.00	Preliminaries	1	item	5000.00	5,000.00
1.01	Excavate and disposal of existing kerb & channel etc.	150	m	25.00	3,750.00
1.02	Saw cut existing concrete pavement	2	m	50.00	100.00
1.03	Remove existing road pavers	400	m²	25.00	10,000.00
1.04	Excavation to subgrade	300	m²	25.00	7,500.00
1.05	Supply, spread and compact sub-base 1 material 150mm depth	750	m²	25.00	18,750.00
1.06	Supply, spread and compact base A material 150mm depth	750	m²	25.00	18,750.00
1.07	Supply all materials, plant and labour & lay new road pavers	750	m²	75.00	56,250.00
1.08	Supply all materials, plant and labour to construct concrete kerb & gutters	120	m	100.00	12,000.00
1.09	Topsoil & sow grass	100	m²	10.00	1,000.00
1.10	Linemarking				
a	Parking Bays	225	m	10.00	2,250.00
b	Holding Line	10	m	20.00	200.00
1.11	Precast wheel stops	26	each	50.00	1,300.00
1.12	Close off existing access	1	item	2000.00	2,000.00
1.13	Stormwater Drainage				
a	DN300 RCP	150	m	250.00	37,500.00
b	Grated Pits	5	each	1500.00	7,500.00
c	Connect to existing	1	each	300.00	300.00
1.14	Contingency (20%)				26,620.00
			TOTAL	**$**	**210,770.00**

no allowance for:

removal & installation of any underground service relocations
landscaping
street furniture, signage
carpark & security lighting
traffic signal modifications

KINGS PARK - BRIDGE ROAD PARKING STUDY

SCHEDULE OF RATES

(Rates are exclusive of GST)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	RATE $	AMOUNT $
	OPTION 14				
1.00	Preliminaries	1	item	5000.00	5,000.00
1.01	Excavate and disposal of existing				
a	kerb & channel etc.	20	m	25.00	500.00
b	landscaping, trees etc	1	item	5000.00	5,000.00
1.02	Saw cut existing concrete pavement	10	m	50.00	500.00
1.03	Retaining wall (approx 2.50m high)	150	m²	350.00	52,500.00
1.04	Excavation to subgrade	950	m²	25.00	23,750.00
1.05	Supply, spread and compact sub-base 1 material 150mm depth	950	m²	25.00	23,750.00
1.06	Supply, spread and compact base A material 150mm depth	950	m²	25.00	23,750.00
1.07	Supply all materials, plant and labour & lay new asphalt seal	800	m²	25.00	20,000.00
1.08	Supply all materials, plant and labour to construct concrete kerb & gutter	210	m	100.00	21,000.00
1.09	Topsoil & sow grass	200	m²	10.00	2,000.00
1.10	Linemarking				
a	Parking Bays	215	m	10.00	2,150.00
b	Holding Line	10	m	20.00	200.00
1.11	Precast wheel stops	32	each	50.00	1,600.00
1.12	Match to existing	2	item	2500.00	5,000.00
1.13	Stormwater Drainage				
a	DN300 RCP	60	m	250.00	15,000.00
b	Grated Pits	3	each	1500.00	4,500.00
c	Connect to existing	1	each	300.00	300.00
1.14	Contingency (20%)				35,550.00
			TOTAL	**$**	**242,050.00**

no allowance for:

removal & installation of any underground service relocations
landscaping
street furniture, signage
carpark & security lighting

KINGS PARK - BRIDGE ROAD PARKING STUDY

SCHEDULE OF RATES

(Rates are exclusive of GST)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	RATE $	AMOUNT $
	OPTION 7 & 8				
1.00	Preliminaries	1	item	5000.00	5,000.00
1.01	Excavate and disposal of existing landscaping, trees etc		item	5000.00	
1.02	Excavation to subgrade	500	m²	25.00	12,500.00
1.03	Supply, spread and compact sub-base 1 material 150mm depth	500	m²	25.00	12,500.00
1.04	Supply, spread and compact base A material 150mm depth	500	m²	25.00	12,500.00
1.05	Supply all materials, plant and labour & lay new asphalt seal	500	m²	25.00	12,500.00
1.06	Supply all materials, plant and labour to construct concrete kerb & gutter	380	m	100.00	38,000.00
1.07	Topsoil & sow grass	100	m²	10.00	1,000.00
1.08	Linemarking				
a	Parking Bays	270	m	10.00	2,700.00
1.09	Precast wheel stops	33	each	50.00	1,650.00
1.10	Match to existing	2	item	2500.00	5,000.00
1.11	Stormwater Drainage				
a	DN300 RCP	60	m	250.00	
b	Grated Pits	4	each	1500.00	
c	Connect to existing	1	each	300.00	
1.12	Contingency (20%)				18,800.00
			TOTAL	**$**	**122,150.00**

no allowance for:

removal & installation of any underground service relocations
landscaping
street furniture, signage
carpark & security lighting

GHD

Level 2, 102 Cameron Street Launceston
Tasmania 7250
T: (03) 6332 5500 F: (03) 6332 5555 E: lstmail@ghd.com

G:\32\17463\WP\21710.docx

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	M. Petrusma	T. Bickerstaff		T. Bickerstaff		18/2/2015

www.ghd.com