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## **Hastings District Council**

### Hastings Inner City Residential Parking Review

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May 2018

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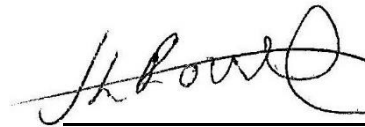
### Quality Assurance Statement

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# 1. Introduction

TDG has been requested by the Hastings District Council (“the Council”) to examine and review the current inner city parking conditions of Hastings, in relation to the Council’s desire to understand the potential impacts on current parking patterns if the Council was to exempt residential developments in the Central Commercial Zone (“CCZ”) from requiring on-site parking.

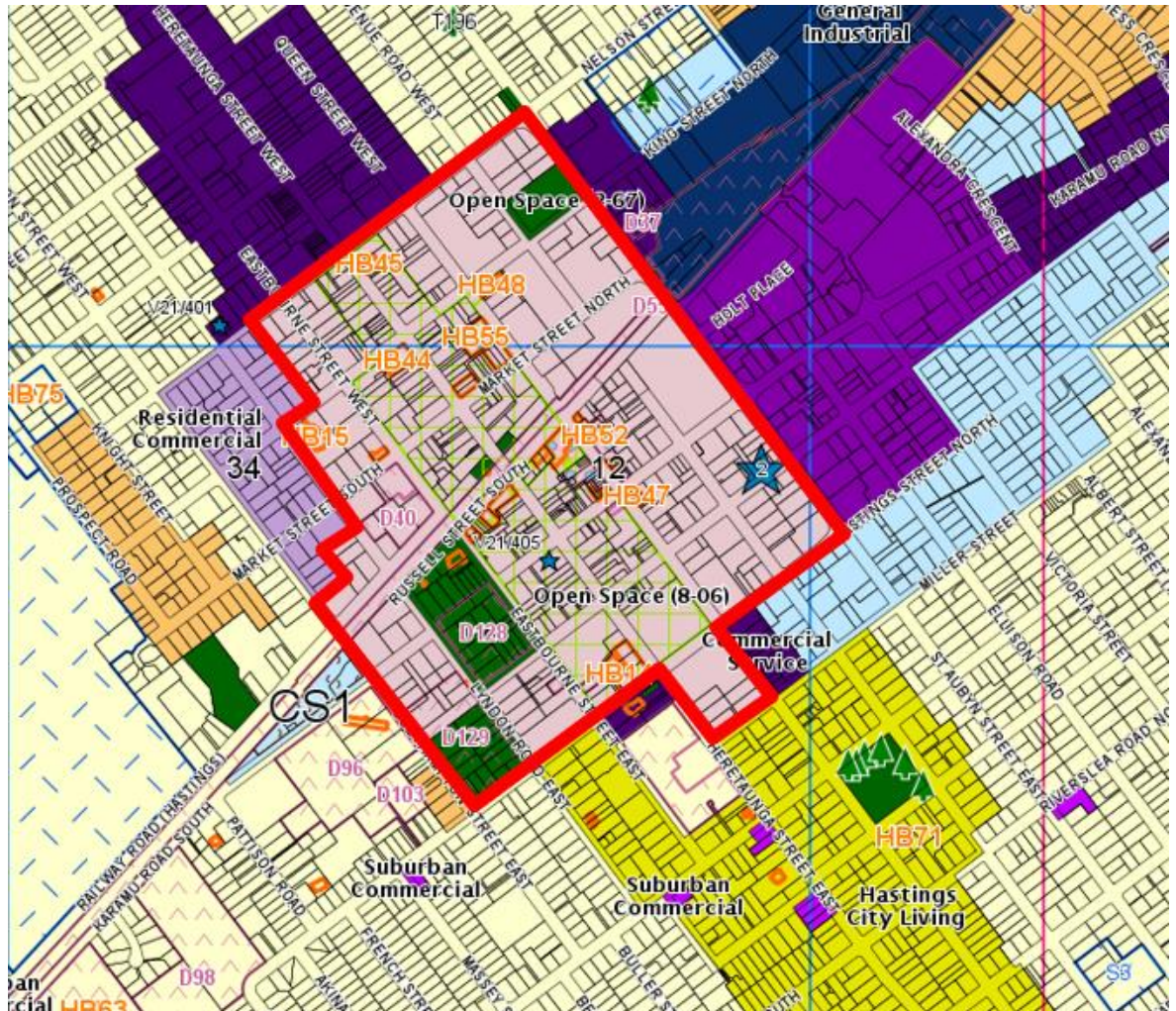
This Parking Review Report (“the Report”) captures the following:

- background and context – why a review is required of current inner city parking in relation to forecast parking demand resulting from residential development sites identified within the CCZ;
- an outline of the study area;
- review of, and findings from existing data sources. This review includes an outline of potential apartment yields, census data for Hastings and similar sized urban areas, and historical data held within the 2016 ‘Parking Monitoring – Data and Analysis Report’; and
- a summary of the results found within the Parking Monitoring Report. The potential increase in residential living and associated parking needs and effects has then been assessed against the available car parking levels recorded within the Parking Monitoring Report.

Recommendations for strategies in how to best respond to the forecast increase in parking demand are then provided.

## 2. Background and Context

The Council proposes that changes be made to the District Plan to facilitate residential activity above ground levels for buildings within the Hastings Central Business District (“CBD”), and particularly within the CCZ. The CCZ, as identified in the Hastings City District Plan is shown below in **Figure 1**, outlined in red and shaded in pink.



**Figure 1: Hastings City District Zoning Map (source: mapping.hdc.govt.nz)**

It is the roads and associated parking located within and around the CCZ that have been evaluated as part of this review.

The Council’s main aim regarding the changes proposed to the District Plan is to contribute to the vibrancy of the CBD by having more people living and working within it. As well as added vibrancy, this District Plan change would also add to the liveability of the City; more people living in the CBD means a potential reduction in people commuting from external areas and subsequently, less reliance on the ownership of a private vehicle, and the need to travel by private vehicle.

Where future residential development opportunities exist within the CCZ, these locations are not always conducive to achieving one on-site parking space and one parking bay per

house hold unit (as required by the operative District Plan), due to the already fully-developed nature of the identified development sites and lack of space to achieve the level of required on-site parking.

An alternative option is to rely on existing public on and off-street parking resources to serve the parking needs of future residential occupiers within the CCZ. This Report provides a review of the existing parking supply in relation to the likely parking demand if the forecast level of future residential development is achieved, and whether the absorption of the forecast parking demand is attainable.

### 3. Study Area

The following roads within the CCZ provide an indication of the related on and off-street areas in which people may park their vehicles if they were to reside in a property located within the CCZ:

- Nelson Street;
- Southampton Street East and Southampton Street West;
- Hastings Street South and Hastings Street North;
- St Aubyn Street East and St Aubyn Street West;
- Avenue Road West and Avenue Road East;
- Queen Street West and Queen Street East;
- Heretaunga Street West and Heretaunga Street East;
- Eastbourne Street West and Eastbourne Street East
- Lyndon Road West and Lyndon Road East;
- King Street South and King Street North;
- Market Street South and Market Street North;
- Russel Street South and Russel Street North;
- Railway Road;
- Caroline Road;
- Holt Place;
- Karamu Road; and
- Warren Street.

If forecast residential developments are to be provided within the CCZ, but associated parking is not, there will be spillover into existing car parking facilities located on and with access from these roads. It is reasonable to expect that people who have access to a vehicle will wish to park their vehicle as close as possible to their property. As such, only the roads listed above have been considered within the study area as it is assumed that parking available beyond the CCZ would not be favourable with potential future residents.



## 4. Review of Existing Research and Data

### 4.1 Future Development Forecasts

The Council has undertaken research into buildings (with one or more storeys) that are either available, or are likely to become available, for residential development within the CCZ in the future. The Council has identified that there is a current yield of 79 buildings within the CCZ with one or more storeys. Of the 79 buildings, 18 were considered highly unlikely for residential development. This leaves 61 buildings remaining that are considered appropriate for potential future residential development, with most unlikely to be able to provide associated on-site parking.

From the identification of 61 buildings, it is possible to estimate how many potential apartments could be provided in the future. An average apartment size of 113m<sup>2</sup> has been determined as relevant to Hastings.

From the 61 buildings highlighted as potential locations for future residential development, and based on the potential developable floor size of 113m<sup>2</sup>, the future forecast level of residential apartments could be 202 apartments.

Some of these 202 apartments could provide on-site parking. For the purpose of this review, an indicative level of 20% of apartments earmarked for potential future development has been assumed as able to achieve the required level of on-site parking. Therefore, the number of apartments that would not achieve the required level of associated parking would total 162 apartments. The Council suggests that these could be developed over a forward period of approximately ten years.

### 4.2 Census Data

Census data provides a national, official count of how many people and dwellings there are in New Zealand, providing a snapshot of the current social makeup of the country at the time the census is completed.

One of the categories that information is collected for relates to the number of vehicles a household has access to. The level of current vehicle ownership can then be applied to the forecast levels of proposed residential development that has been highlighted by the Council within the CCZ, to understand what the future parking demand is likely to be.

Vehicle ownership census data has been downloaded from the [archive.stats.govt.nz](http://archive.stats.govt.nz) website, and 2013 Census Meshblock Dataset files downloaded for the Hawke's Bay Region to understand the "Number of motor vehicles, for households in occupied dwellings". A summary of the outputs retrieved from the interrogation of this data for the CCZ meshblocks is provided below in **Table 1**.



Percentage of Household Ownership in CCZ Meshblocks	No Motor Vehicle	One Motor Vehicle	Two Motor Vehicles	Three or More Motor Vehicles
	33%	60%	7%	0%

**Table 1: Private dwelling vehicle ownership by number of vehicles for meshblocks located within the CCZ**

The information held above in Table 1 can be applied to the information provided by the Council outlined in **Chapter 4.1**, to understand the likely level of parking demand that would be associated with the forecast residential increases.

**Table 2**, provided below, outlines the level of parking demand that would be related to the forecast total of 162 residential apartments.

Number of Forecast Apartments	One Motor Vehicle	Two Motor Vehicles <sup>1</sup>	Three or More Motor Vehicles <sup>2</sup>	Total Number of Car Parks Required
162	98	22	0	120

**Table 2: Numbers of required car parks generated as a result of forecast development, in line with existing vehicle ownership levels within the CCZ**

Due to the relatively small number of returns within the Census Data relating to the CCZ of Hastings, similar searches were completed for the areas of; Napier<sup>3</sup>, Palmerston North, New Plymouth, Lower Hutt and Nelson, as recorded below in **Table 3**.

Percentage of Household Ownership in CCZ Meshblocks	No Motor Vehicles	One Motor Vehicle	Two Motor Vehicles	Three or More Motor Vehicles
Palmerston North	40%	40%	10%	10%
New Plymouth	17%	52%	25%	6%
Hutt City	23%	54%	20%	3%
Nelson	29%	43%	28%	0%
<b>Average</b>	<b>28%</b>	<b>50%</b>	<b>18%</b>	<b>4%</b>

**Table 3: Comparison of likely parking demand, by the number of vehicles per dwelling**

Table 3 shows that the Census Data for Hastings has similar levels of vehicle ownership when compared to the average vehicle ownership across all of the other areas, but with lower percentages of two and three or more motor vehicles.

For the purposes of this review, the percentages have been combined to provide a more representative illustration of the likely vehicle ownership levels of residents in new residential apartment developments across the CCZ. **Table 4** and **Table 5** show the recalculated percentages, as well as the new increase in parking demand as a result of the

<sup>1</sup> Where two motor vehicles have been recorded, the number of apartments has been multiplied by the percentage obtained from the Census Data. This figure has then been multiplied by two to provide the number of parks that would be required.

<sup>2</sup> Where three motor vehicles have been recorded, the number of apartments has been multiplied by the percentage obtained from the Census Data. This figure has then been multiplied by three to provide the number of parks that would be required.

<sup>3</sup> Napier was removed from the analysis as only three items of data were recorded, all showing that 100% of dwelling has access to a vehicle. This would make the summary of the Census Data misleading.

forecast development for 162 apartments. In so doing, it has been assumed that no central city apartment occupiers would own three or more motor vehicles.

Percentage of Household Ownership in CCZ Meshblocks	No Motor Vehicle	One Motor Vehicle	Two Motor Vehicles	Three or More Motor Vehicles
	30%	52%	18%	0%

**Table 4: Private dwelling vehicle ownership by number of vehicles within the Hastings CCZ, readjusted to provide a more robust assessment**

Number of Forecast Apartments	One Motor Vehicle	Two Motor Vehicles	Three or More Motor Vehicles	Total Number of Car Parks Required
162	84	58	0	142

**Table 5: Numbers of required car parks generated as a result of forecast development, in line with the readjusted vehicle ownership levels within the Hastings CCZ.**

Table 5 records the total number of additional parking spaces that could be generated as a result of introducing 162 new apartment developments within the CCZ. This number has been taken forward within this analysis and used to understand whether the forecast increase in parking can be accommodated within the existing public car parking availability.

### 4.3 Parking Monitoring Survey – Data and Analysis Report

In November 2015, TDG was commissioned by the Council to undertake a number of parking occupancy surveys in relation to a free parking trial that the Council introduced across the CBD. Surveys were undertaken prior to ('control surveys'), and during ('trial surveys') the free parking trial, however it is the control surveys that are of interest and have been used to inform the findings of this report. While now about two years old, it is considered that these surveys continue to provide a reasonable basis for the parking interpretations required in this review.

The parking surveys undertaken before the introduction of the free trial were completed on Thursday 29 October between 9:00am and 6:00pm, and Saturday 31 October between 9:00am and 2:00pm. The types of parking considered involved:

- paid on street parking, with time restrictions of P15 minutes, P60 minutes, P240 minutes and mobility parking spaces;
- unpaid on street parking, with time restrictions of P5 minutes, P15 minutes, P30 minutes, P60 minutes, P120 minutes and mobility parking spaces;
- unpaid on street parking with no time restrictions; and
- off street parking spaces which were either paid spaces in Council owned car parks, leased spaces in HDC owned car parks, or parking at The Park Megacentre.

The survey area for the parking occupancy surveys is shown in **Figure 2**. It is noted that this area covers all of the roads outlined within **Chapter 3** of this report and therefore provides a comprehensive review of the existing parking situation within the CCZ.

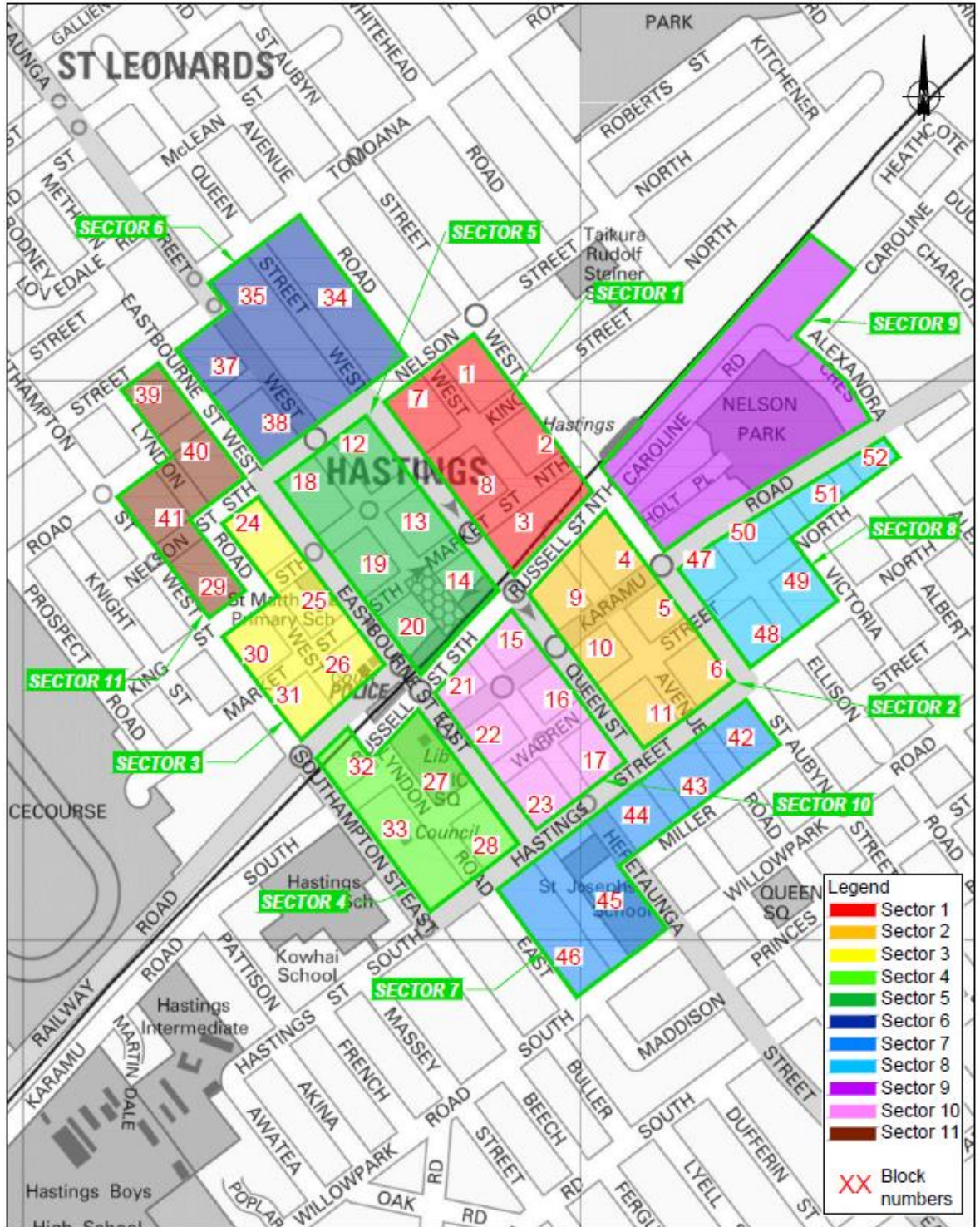


Figure 2: Parking Occupancy Survey Areas

The results from the surveys completed within the highlighted areas in Figure 2 is provided next in **Chapter 5**.

## 5. Results of 2015 Parking Surveys

Consideration in this section has been given to unlimited on-street parking, leased off-street and paid off street parking only. For the purposes of this review, the paid and unpaid on-street parking spaces with time restrictions of between P5 and P240, have been omitted. The Park Megacentre parking areas have also been removed. The removal of these car parking areas is because residents would often require to park their vehicles for longer than the periods available under the time restricted parking areas, and because The Park Megacentre is held in private ownership.

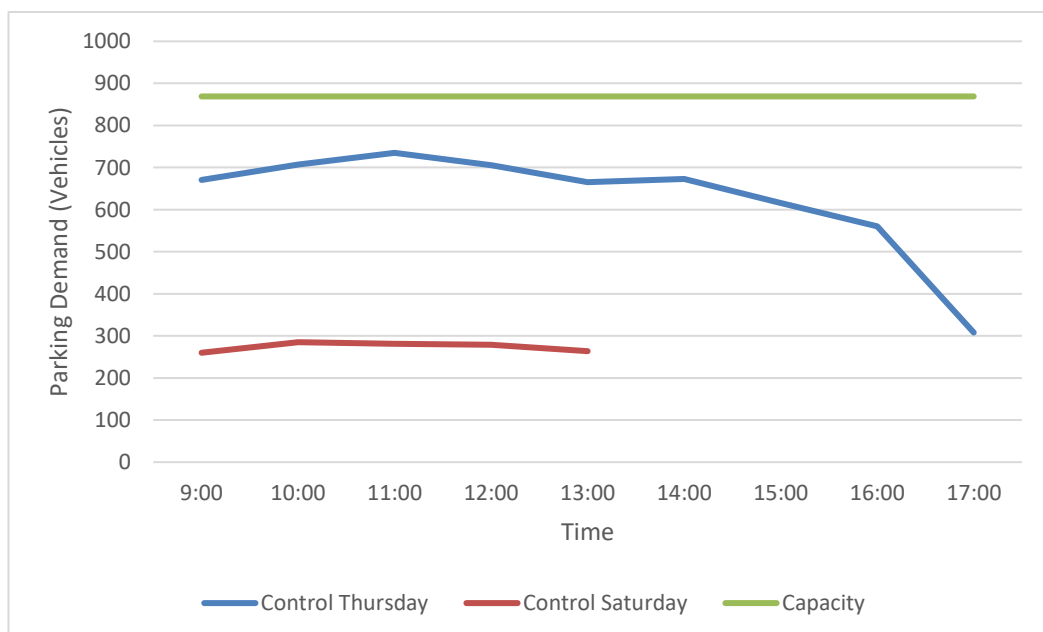
The results from the parking occupancy surveys for unlimited on-street parking are as provided below in **Table 6**.

Metric	Average		Minimum		Maximum		Capacity
	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	
Thursday	626	72%	305	35%	739	85%	869
Saturday	279	32%	261	30%	287	33%	869

**Table 6 – Parking occupancy rates for unlimited on-street parking on Thursday and Saturday**

Table 6 shows that during the busiest hour, a total of 130 (869-739) parking spaces were unoccupied during a Thursday, whereas this number is much higher on a Saturday at 582 (869-287) parking spaces occupied. On average there were 243 (869-626) unoccupied parks during a Thursday and 590 (869-279) unoccupied parking spaces on a Saturday.

The occupancy patterns throughout the day for unlimited on-street parking are shown in **Figure 3**.



**Figure 3: Parking occupancy rates throughout each day for unlimited on-street parking**



Figure 3 shows that occupancy rates are significantly lower during a Saturday than compared to a Thursday. Figure 3 also demonstrates that parking demand, on a Thursday, builds within the mid-morning period between 9:00am and 11:00am, before gradually declining over the remainder of the day. Towards 5:00pm, parking demand drops significantly. Parking demand during a Saturday remains fairly consistent throughout the surveyed timeframe.

**Table 7** below provides the results from the occupancy surveys for the unrestricted areas of leased off-street and paid off-street parking for the surveyed Thursday. **Table 8** provides the same information for the surveyed Saturday.

Metric	Average		Minimum		Maximum		Capacity
	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	
Leased Off-street	71	47%	50	33%	83	55%	150
Paid Off-Street	111	53%	77	37%	132	63%	208

**Table 7 – Parking occupancy rates for leased and paid off-street parking on Thursday**

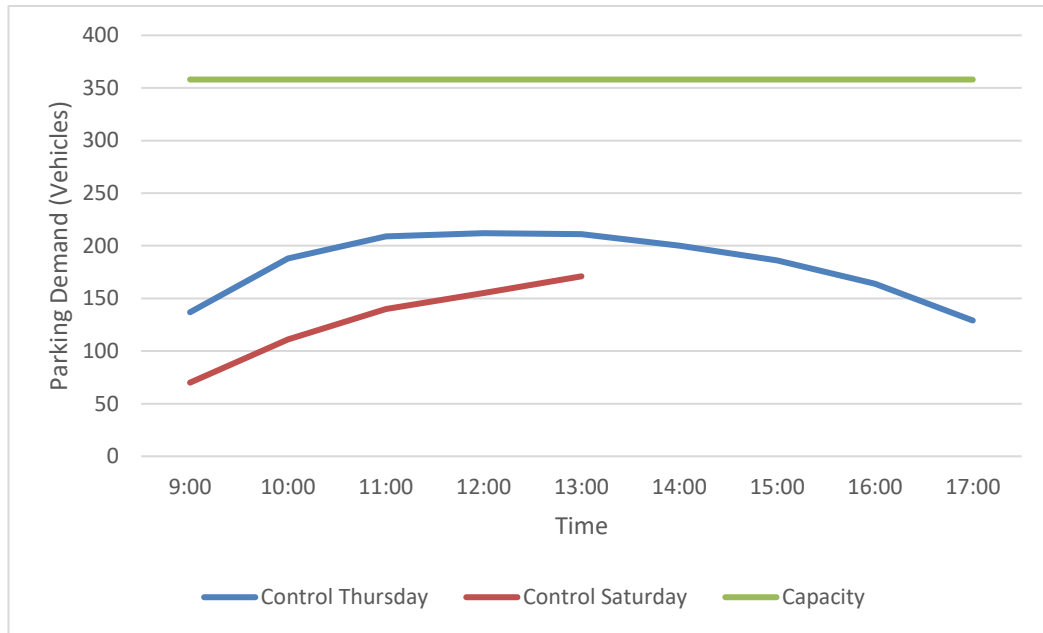
Metric	Average		Minimum		Maximum		Capacity
	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	
Leased Off-street	27	18%	9	6%	42	28%	150
Paid Off-Street	102	49%	61	29%	129	62%	208

**Table 8 – Parking occupancy rates for leased and paid off-street parking on Saturday**

Table 7 and Table 8 show that for the combined total of 358 (150 + 208) parking spaces, a total of 143 (358-83-132) of the parking spaces were unoccupied at the busiest time on the Thursday, whereas the number of unoccupied spaces was higher on a Saturday at 187 (358-42-129). On average, there were 176 (358-71-111) unoccupied parking spaces during the Thursday and 229 (358-27-102) unoccupied spaces on the Saturday.

**Figure 4** provides the combined occupancy patterns throughout the day for off-street parking spaces<sup>4</sup>.

<sup>4</sup> Off-street parking spaces here refers to the combination of leased and paid off-street parking.



**Figure 4: Parking occupancy rates throughout each day for off-street parking**

In Figure 4, parking demand remains higher during the Thursday in comparison to the Saturday. The profile of off-street parking for the Thursday is gentler in comparison to the unlimited on-street parking surveys, however, there is a clear peak demand during the middle parts of the day.

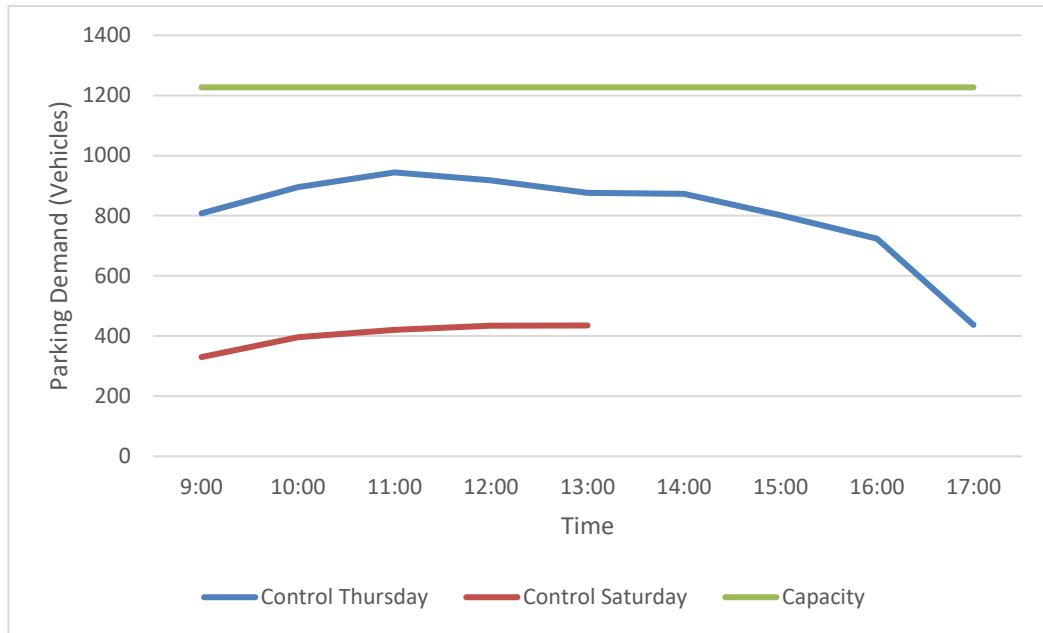
**Table 9** below provides a cumulative assessment of all of the parks to understand the total available resource against the level of car parking occupation for the surveyed Thursday and Saturday.

Metric	Average		Minimum		Maximum		Capacity
	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	Occupied Spaces	Occupied (%)	
Thursday	807	66%	431	35%	953	78%	1227
Saturday	407	33%	331	27%	458	37%	1227

**Table 9 – Parking occupancy rates for unlimited on-street, leased and paid off-street parking on Thursday and Saturday**

Table 9 shows that there is a total of 274 (1227-953) available spaces on a Thursday during the worst-case scenario. Table 4 also shows that there is a total of 769 (1227-458) available spaces on a Saturday during the worst-case scenario. This is the available parking that any occupier of a residential dwelling, that does not have access to an on-site car park, could potentially have access to during the busiest times of the week and on a weekend.

**Figure 5** shows the occupancy patterns throughout the day for all unlimited on-street, leased off-street and paid off-street parking.



**Figure 5: Parking occupancy rates throughout each day for unlimited on-street, leased off-street and paid off-street parking.**

The fact that demand is lower during the start and end of the day, is more conducive to absorbing additional parking demand as a result of residential development, when some residents will leave their parking space in the morning to travel to work, and return towards the end of the day, when demands have decreased, enabling shared use of these spaces.

To conclude the results section of this report, Table 5 shows that there could be an overall increase in parking demand by 142 parks in response to development of 162 apartments over time. Table 9 shows that at the busiest time during a Thursday and a Saturday, there are 274 and 769 unoccupied spaces, respectively. Therefore, for the worst-case Thursday, a surplus of 132 (274-142) car parking spaces would remain at the busiest time. For the worst-case Saturday, a surplus of 627 (769-142) car parks would be available.

In practice, existing parking demands vary day to day and during the year, such that peak demands vary throughout the CCZ and by individual locations within the CCZ. Changes will also continue through the forward ten-year period which is expected to be the approximate period during which most of the apartment developments are expected to occur.

Taken as a whole, these details serve to indicate that there is a publicly-available supply of on and off-street parking that could be drawn on to fulfil the needs of residential parking in the CCZ.



## 6. Parking Management Options

It has been broadly concluded that with a potential increase in parking demand of 142 parks, there is a sufficient surplus of publicly-available car parks to accommodate this increase, even at the busiest times on a weekday and a weekend day. However, it is recognised, that these available parks are spatially independent from one another. Therefore, whilst there may be available parking across the CCZ as a whole, this may not always be in a location that is the most convenient to absorbing additional parking demand resulting from new residential developments due to perhaps poor proximity to the development sites. That said, it is also noted the development locations are similarly spread across the CCZ and not concentrated in any one particular area.

As such, for the absorption of additional parking demand to be successful, appropriate management of the current parking supply may be required on a case-by-case basis in relation to any future development.

For any particular development within an area of the CCZ, a specific review of the parking which is likely to be desirable for use by residents of the new developments should be the subject of a more refined review. From this point, it will be determined whether the local available parking has sufficient surplus, or whether the introduction of apartments would produce demand above that which the immediate car parking resource can absorb.

If it is observed that there is an inability to meet parking demands at specific locations, the Council could review the potential for re-allocating existing parking spaces for residential use.

Where a development is introduced and there is wider available parking capacity, the Council could re-assign some spaces by removing them general use and converting to residential permit parking. Such permits would allow residents to park within specified areas provided at strategically chosen locations as identified by the Council.

The conversion of parking bays to residential permit parking will ensure that the capacity of the bays can be controlled, giving certainty for residents that parking will always be available at a pre-determined convenient location.

The data shows that parking demand within the CCZ is at its highest during the middle of the day, with demand being less at the start (before 9:00am) and end (after 5:00pm) of the working day. As a variant of the above, to ensure that convenient parking exists for residents, time restricted residential permit parking could be introduced. This would ensure that parking is only allowed for residents between say 6:00pm and 9:00am. Outside of these restricted hours, the parking will be available for anyone who wishes to use these spaces, including residents, subject to the specified time limits. This option is demand responsive and allows residents only to park in the spaces when their demand will be highest (mornings, evenings and overnight) whilst freeing up capacity once the residential demand decreases when some residents will travel away to work.

## 7. Conclusion

TDG has been commissioned by Hastings District Council to provide a review of current parking demand in relation to identified potential future residential development within the Central Commercial Zone.

A total of 61 sites potentially yielding 202 apartments has been identified by the Council for residential development, of which most will be unlikely to provide on-site parking.

TDG has completed a review of the available Census Data for Hastings, as well as a number of other cities of similar size to understand the likely level of parking demand that would be generated by future residential developments.

This has been compared to baseline car parking occupancy survey data, to understand how future parking demand would relate to the existing parking supply and whether or not the existing parking supply could absorb increases in parking demand for developments which could not achieve on-site car parking.

Taken overall, added residential parking demands could be accommodated within the existing parking resource of the CCZ. However, it is also acknowledged that the surplus capacity within the existing parking supply is provided at spatially independent locations across the CCZ, with some areas under more parking pressure than others. As such, parking management intervention could be appropriate in some locations in order to successfully manage the residential parking demand within the existing on-street parking supply, to offer convenient residential parking.

It is concluded that there is sufficient capacity within the existing on-street parking supply of the CCZ to accommodate the forecast increase in parking demand as a result of proposed new residential development, but acknowledging that the current patterns and demand for city parking will change in the future (from the 2015 baseline position referenced here), such that particular reviews and responses may be needed in respect to individual developments in future years.

TDG