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Bay Hill Development

Transportation Assessment Report Review

Timaru District Council

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Bay Hill Development Transportation Assessment Report Review

Timaru District Council

Quality Assurance Information

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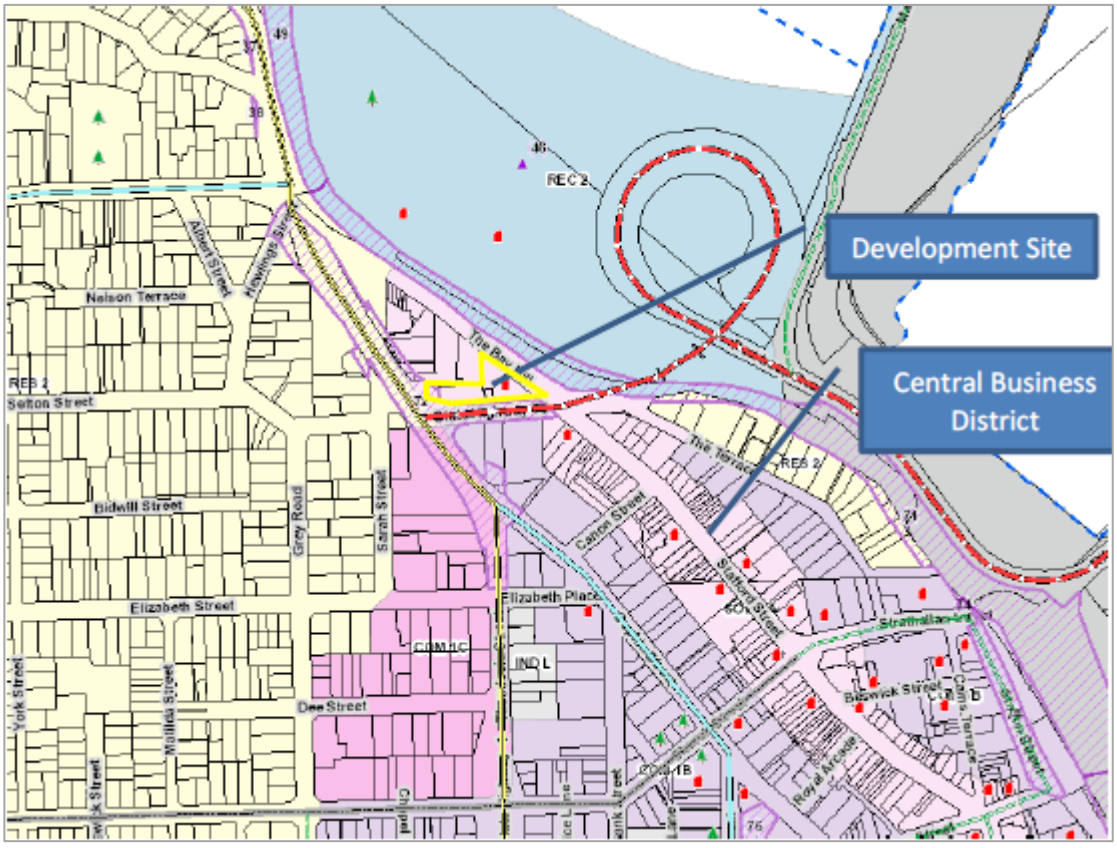
1. Introduction

Abley Transportation Consultants have been commissioned by Timaru District Council to peer review the transport aspects of the resource consent application for a mixed use development of the site of the Hydro Grand Hotel, 10 The Bay Hill, Timaru. Transport aspects of the proposed activity are described in a Transportation Assessment Report (TAR) prepared by TDG and further information provided subsequent to a Request for Further Information (RFI).

1.1 Proposal Description

Figure 1.1 shows the location of the development site at the northern end of the Central Business District. It is zoned Commercial 1A in the Timaru District Plan.

Figure 1.1 General Location and Zoning (Figure 2 of the TAR)



The proposed development consists of three buildings:

- Building 1 is located on the south-eastern corner of the site. It is an office development with retail and food and beverage activities on the ground and mezzanine levels;
- Building 2 is in the centre of the site. It has residential apartments and retail and food and beverage activities on the ground and mezzanine levels;
- Building 3 is located at the western end of the site and has frontage to Sefton Street (SH78). It includes a hotel with 3 levels of parking below that provide 90 spaces (3 of which will be marked as accessible spaces), including 1 basement level of parking.

The parking building is accessible via Sefton Street (SH78) only. The three levels are linked by a single lane circular ramp with movements controlled by signals. The basement level includes 60 parking spaces of which 24 are configured in a tandem arrangement. The response to RFI notes that the on-site parking facilities will only be available to people that are familiar with its design i.e. apartment residents, office employees and hotel valet parking attendants. The allocation of spaces between activities is expected to be as follows:

- Residential apartments – 32 spaces i.e. 1 space per apartment
- Hotel – 25 spaces (including all 24 tandem spaces)
- Office – 33 spaces

Overall, the proposed development comprises:

- 2,298m^2 GFA of office space;
- 32 residential apartments;
- A 68-room hotel; and
- 400m^2 and 417m^2 GFA of retail and food and beverage activities respectively.

1.2 Receiving Environment

The site fronts The Bay Hill and Sefton Street. The land to the north of the site in the triangular area bounded by Theodosia Street, The Bay Hill and Sefton Street includes bars, a café, restaurant, visitor accommodation and public car parking. The public parking area is accessed via the roundabout at the northern end of the triangular shaped block. There is also on-street parking available on The Bay Hill.

Theodosia Street is part of State Highway 1 (SH1) and Sefton Street is part of State Highway 78 (SH78). Sefton Street is a Regional Road in the ONRC (One Network Road Classification) and provides primary access to the Port of Timaru via Port Loop Road. The Port is regionally significant and requires good access. Theodosia Street is a 4-lane divided highway. Sefton Street is a 2-lane road with a 13 m kerb-to-kerb width sufficient to accommodate two approach lanes at its approaches to the intersections with Theodosia Street and The Bay Hill. The Bay Hill is designed to encourage low speeds and has a speed limit of 30 km/h.

The TAR gives annual average traffic volumes of 23,600 vpd on Theodosia Street north of Sefton Street, and 3,300vpd on Port Loop Road north of Marine Parade. From Figure 5 in the TAR, the evening peak hour 2-way traffic volumes are 2,622 vph on Theodosia Street, 771 vph on Sefton Street and 117 vph on The Bay Hill. The evening peak was surveyed as 4:15 pm to 5:15 pm, this is generally consistent with the NZTA traffic count data.

NZTA traffic count data for 5-year period 2011-2015 indicates that traffic volumes on Theodosia Street have been increasing at less than 1% pa. Traffic growth on Port Loop Road has been increasing at approximately 4% pa. The evening peak hour heavy traffic proportions on Theodosia Street and Sefton Street are 6% and 12% respectively.

There are two traffic signal controlled intersections in the vicinity of the development site, namely the Theodosia / Sefton intersection and the Sefton / Port Loop / Stafford / The Bay Hill intersection. The Bay Hill is the northern extension of Stafford Street and Sefton Street is the western extension of Port Loop Road.

Figure 1.2 shows the road system in the vicinity of the development site which is bounded by a red line.

Figure 1.2
Development Site and Adjacent Road Network

1.3 Scope of Review

This report presents the findings of a review of the key transport related considerations of the proposed development. Key findings and recommendations are presented in ***bold italics***.

2. Trip Generation, Assignment and Distribution

2.1 Trip Generation

The TAR and response to the RFI set out the assumptions made in estimating the total amount of traffic that would be generated by the proposed development during the weekday peak hours, as shown in **Table 2.1**.

***Table 2.1** Trip Generation Rates*

Land Use	Trip Rate	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
Residential	0.8 vph/unit	15%	85%	65%	35%
Hotel	1.2 vph/room	42%[1]	58%[1]	58%[1]	42%[1]
Office	2.5 vph/100m^2 GFA	80%	20%	20%	80%
Food & Beverage	AM: 1 vph/100m^2 GFA PM:10 vph/100m^2 GFA	100%	0%	50%	50%
Retail	AM: 1 vph/100m^2 GFA PM: 10 vph/100m^2 GFA	100%	0%	50%	50%

[1] Based on response to RFI that assumes 75% of all movements will be by taxi (same inbound and outbound split) and remaining movements will by 90% outbound in morning peak and 90% inbound in evening peak.

The resulting traffic movements generated by the proposed development (as shown in Table 3 of the response to RFI) are summarised in **Table 2.2**.

***Table 2.2** Total Site Traffic Generation*

Weekday Peak Period	Inbound (vph)	Outbound (vph)
AM Peak	87	78
PM Peak	116	123

It is noted that figures calculated in Table 2.2 are based on an office GFA of 2,011m2 even though the actual office GFA is 2,298m2. The effect is a shortfall of seven trips in the AM and PM peak hours respectively. For the purposes of this review, the higher GFA figure has been used for all assessments.

Assessment

On balance, the trip generation rates appear to be slightly conservative (higher than what may be expected) and are within the range of rates accepted by the industry based on the TDB database. The RTA Guide to Traffic Generating Developments is a useful source to cross-check these rates against in addition to the TDB. A review of each of the activities is as follows:

- **Residential** = 0.85/unit in RTA Guide and approximately 0.9/unit in TDB. Whilst it is noted that this is slightly higher than the TAR rate, if the residential activity is medium/high density than the rate is likely

to be more in the order of 0.4/unit. This is also consistent with residential units in a central business district and would indicate that the rate used in the TAR is conservative.

- **Hotel** rates are generally considered to vary greatly depending on facilities in RTA Guide. TDB indicates 0.8 trips/unit in the AM and 0.5 trips/unit in the PM which suggests that the TAR rates are highly conservative.
- **Office** = 2 trips/100 m2 GFA in RTA Guide and the TDB rates are generally consistent with this indicating that the TAR rate is slightly conservative.
- **Food and beverage and retail** rates can vary greatly depending on the specific nature of the activity and would typically be in the range of 5-15 trips per 100 m2 GFA. Therefore, it is considered that the peak hour trip rates are generally of an appropriate order. Overall, the trip rates used to estimate the proposed development's total traffic generation are considered to be relatively conservative and consequently are a reasonable basis for determining the potential impact of the development on the road network.

The directionality splits in movements (inbound v outbound) for each of the individual uses are generally appropriate and within limits commonly accepted by the industry.

There are however, ***assumptions around valet parking and the use of taxis that are do not appear to be reflected in the overall trip generation calculations***. Valet parking conventionally requires that a customer arrives at the hotel forecourt then the vehicle is taken to the hotel car park by the valet. On departure, the car is taken from the hotel car park by the valet then delivered to the hotel forecourt. It follows that valet parking generates one additional inbound trip from the hotel forecourt to the hotel car park and one additional outbound trip from the hotel car park to the hotel forecourt. In the case of the proposed The Bay Hill development, any additional valet parking trips to or from the hotel forecourt (on The Bay Hill) must travel through the Sefton Street/The Bay Hill/Stafford Street/Port Loop Road intersection to use the proposed parking building access on Sefton Street (SH78).

It may be possible to arrange for cars to be brought to a location within the parking building close to the lobby access by the valet. That would be expected to require two parking spaces to be allocated for valet parking pick-up close to the lobby. This arrangement would not suit all hotel guests and would not be expected to apply to arriving visitors as they would expect to park in the hotel forecourt on arrival. For assessment purposes, it is assumed that 50% of departing trips would use such an arrangement and the remainder would wish to have their vehicle delivered to the forecourt.

Based on the above, each inbound private vehicle trip would generate a trip to the hotel forecourt followed by a valet park trip to the parking building, and 50% of outbound trips would generate a valet park trips from the parking building to the forecourt in addition to the trip from the hotel to the destination.

Similarly, taxi trips generate one inbound plus one outbound trip for both travel to and from the hotel. The exception is when after dropping off an arriving passenger, the taxi driver waits to pick up a departing passenger.

Our information is that there are 19 taxis in Timaru, with an average of 9 operating at any one time. It would therefore appear fanciful to expect that 75% of all trips in a peak hour (1.2 vph per room) could be accommodated by the current taxi fleet. The demand for travel by taxi is also questioned, given our information suggests most tourism and business travel to Timaru is self-drive.

For assessment purposes, a more realistic utilisation of taxi trips is assumed to be 6 hotel arrival trips are by taxi, with 3 of these taxis also picking up an outbound hotel trip.

2.2 Trip Assignment and Distribution

The response to the RFI splits the above traffic movements between the parking building, which has its proposed access on Sefton Street, and The Bay Hill.

The resulting split of the inbound and outbound traffic movements between the parking building and The Bay Hill (as shown in Table 4 of the response to RFI) is set out in **Table 2.3**.

Table 2.3 *Trip Generation Split between Parking Building and The Bay Hill*

Location	AM Peak Hour (vph)		PM Peak Hour (vph)	
	Inbound	Outbound	Inbound	Outbound
Parking Building	32	44	41	35
The Bay Hill	55	34	75	88
TOTAL	87	78	116	123

Assessment

Neither the TAR nor response to RFI indicate how the trips generated by the hotel and office components of the proposed development are apportioned between the parking building and The Bay Hill. This makes it difficult to verify the estimates presented by the Applicant.

For assessment purposes, it is assumed that all trips generated by the residential apartments will be to/from the parking building and all traffic generated by the food and beverage and retail activities will use The Bay Hill on the basis that the car parking building will not be available to the public. The balance of trips generated by the office and hotel components of the activity appear to be apportioned between the parking building and The Bay Hill access, although the basis of assignment is unclear.

Based on the assessment assumptions applied to valet and taxi trips in the preceding section, it follows that the traffic on The Bay Hill generated by the hotel in the PM peak hour, which is the critical hour for assessment purposes, would be as follows:

- 48 inbound trips consisting of 6 taxi trips to the hotel forecourt; 3 of which pick up an outgoing fare from the hotel and 3 of which return empty (assumed destination city centre), and 42 trips to the hotel forecourt followed by 42 valet attendant trips from the forecourt to the parking building.
- 33 outbound trips, half of which (16) are hotel customers who leave from the parking building having picked up their vehicle from the valet parking attendant within the parking building. The remaining half (17) comprise 14 who have their car delivered to the forecourt by the valet parking attendant then travel to their destination, and 3 who are picked up by waiting taxis at the forecourt.

The combined effects of the changes in the PM Peak hour are difficult to estimate given the limited transparency of the assignment process, but the best estimates for movements at the parking building access on Sefton Street are:

- Right turn into the parking building from Sefton Street is 55vph
- Left turn into the parking building from Sefton Street is 23vph
- Right turn out of the parking building into Sefton Street is 35vph
- Left turn out of the parking building into Sefton Street is 33vph.

An assessment of the operational performance of the parking building access is presented in Section 4.2 of this review.

The wider network effects are largely immaterial given there is considerable spare capacity at the two nearby signalised intersections of Theodosia / Sefton and Sefton / Port Loop / Stafford / The Bay Hill. The TAR concluded that both intersections "*will continue to provide a high level of service, LoS B, even allowing for 20% on SH78 Sefton Street which is representative of five to ten year's annual growth*". A review of the Sidra modelling and sensitivity checking has confirmed this is accurate.

3. Parking Demands

3.1 District Plan Requirement

Under the District Plan rules, a minimum of 154 parking spaces is required for the proposed development, as shown in **Table 3.1**.

***Table 3.1** District Plan Parking Requirements*

Activity	Quantity	Requirement	Parking Spaces
Residential	32 apartments	1 space/unit	32
Hotel	68 rooms	1 space/room	68
Office	2,298 m^2 GFA	1 space/50m^2 GFA	46
Retail	420 m^2 GFA	Nil – Commercial 1A zone	0
Food & Beverage	400 m^2 GFA	1 space/50m^2 GFA	8
TOTAL			154

A total of 90 spaces are proposed as part of the development. The proposed development therefore has a statutory undersupply of 64 spaces.

3.2 Shared Parking in Mixed Use Developments

The District Plan stipulates that the parking requirement for each individual use is added together to determine the total parking supply. However, this approach is overly simplistic for a mixed use development where the sharing of the parking spaces by more than one land use activity is possible, particularly where the peak demands of individual activities does not coincide. For example, restaurant customers could potentially use vacant office parking in the evenings. The extent to which this occurs can depend on the mix of uses, whether parking spaces are allocated to specific uses or available to all, and the accessibility of spaces for alternative uses.

In the case of the proposed development, it is stated in the response to RFI that the residential parking spaces (32) will be allocated to individual apartments, 25 spaces will be assigned to the hotel and 33 spaces to the office component.

Before discussing the potential effect of the sharing of parking spaces on total demand, it should be noted that the District Plan's parking requirement comprises a nil parking requirement for the retail development component and a low 1 space per 50 m^2 GFA requirement for food and beverage component. These figures are not reflective of actual parking demand that will be generated.

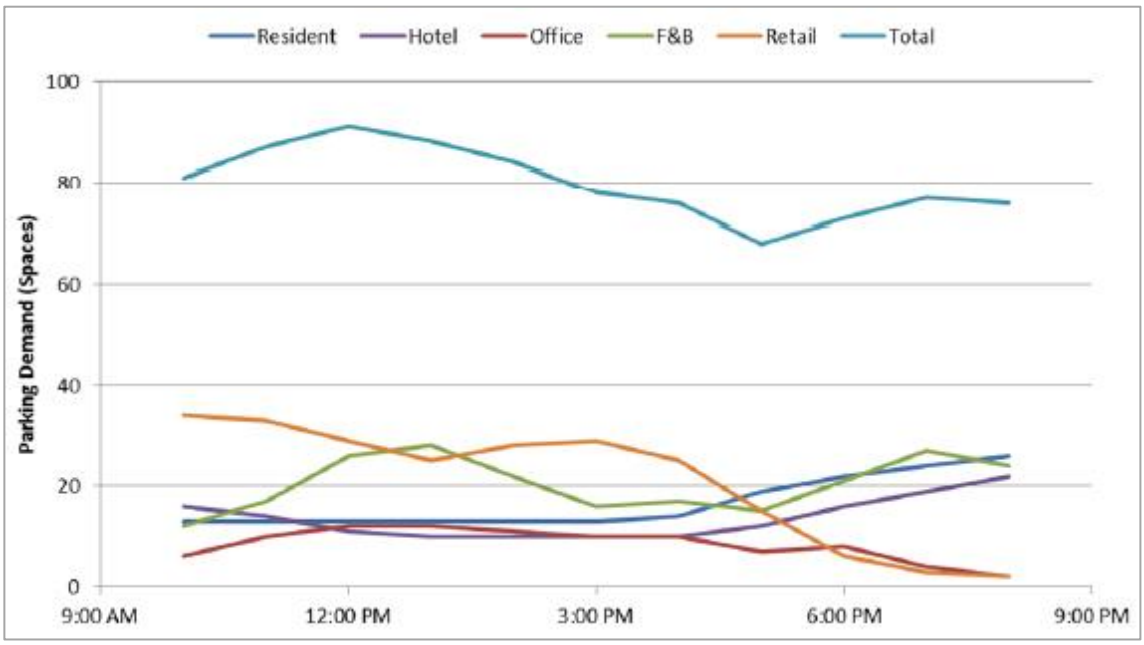
The same applies to the 1 space per 50 m^2 GFA requirement for office space, as in effect this provides 1 parking space for every 2 to 3 employees assuming a GFA/employee of between 25m^2 and 16m^2. Consequently, the parking requirements of the District Plan already assume a significant use of public transport, walking/cycling or carpooling by employees working in the office complex.

3.3 Parking Demand Estimation

The TAR included a profile of the anticipated parking demand for each land use activity in the proposed development over a typical weekday. The parking demands over the day are added together to produce

the combined total parking demand profile for a weekday included as Figure 11 in the TAR, which is reproduced as **Figure 3.1**.

Figure 3.1 *TAR Assessment of Total Parking Demand*

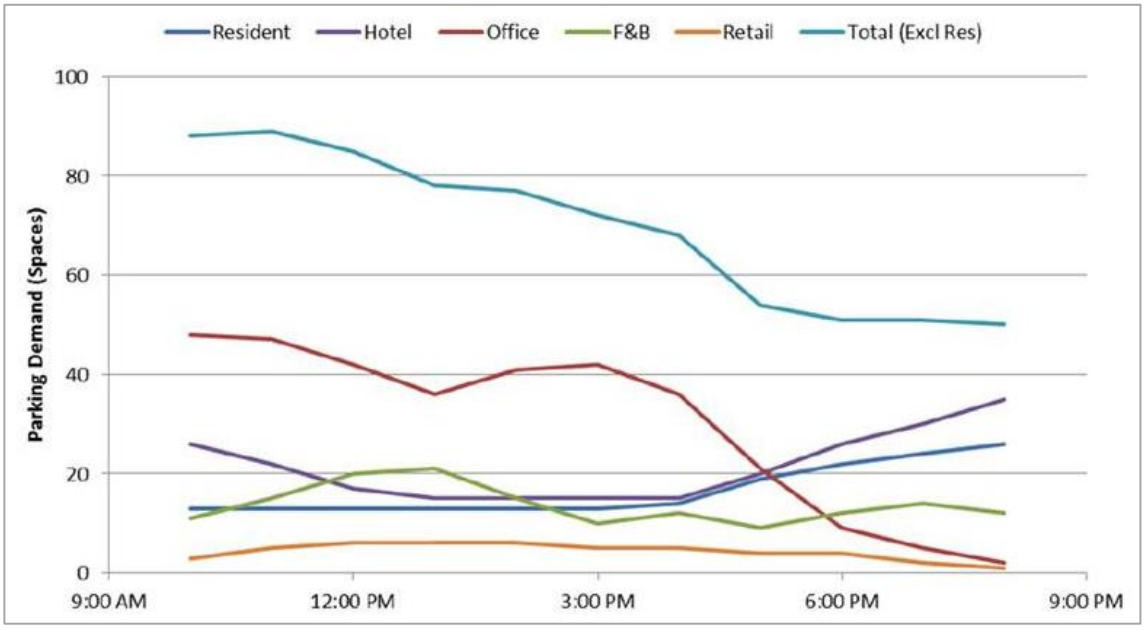


Note: The key included in Figure 11 of the TAR is incorrect. The orange colour should be "office" and the red colour should be "retail".

The response to the RFI replaced the above figure with the revised parking demand profile, reproduced as **Figure 3.2**. It identifies a peak non-residential parking demand of 90 spaces, which is 32 spaces more than the non-residential supply allocated within the parking building. This is estimated in the response to RFI to comprise 10 long stay spaces for office employees plus 20 short stay spaces for the other activities.

The parking building parking space allocation in the response to RFI is 32 residential spaces, 25 hotel spaces (24 of which are tandem parked), and 33 office spaces.

Figure 3.2
Response to RFI Assessment of Total Parking Demand



Assessment

Although the use of shared parking demand model is largely supported, it is considered that the estimation of parking occurring outside of the parking building has been underestimated, for the following reasons:

- Peak parking demand generated by the overall activities is estimated to occur at 11am, when:
  - Parking demand for the office is approximately 47 spaces;
  - Parking demand for the hotel is approximately 21 spaces;
  - Parking demand for food and beverage is approximately 17 spaces; and
  - Parking demand for retail is approximately 5 spaces.

Based on the numbers above, the minimum reliance on parking outside the parking building would be 36 spaces comprising 14 long-stay spaces for office employees, and 22 spaces for food and beverage and retail staff and customers (generally short-stay). Actual reliance on off-site parking could be higher, as the interpretation of the model by TDG appears to assume that parking will occur on-site in preference to off-site, and occupancy will be 100% on-site when overall demand equals or exceeds supply.

The parking model also shows that demand for short-term parking on The Bay Hill and surrounding areas will peak at 1pm when approximately 27 spaces are required for staff and customers of the food and beverage and retail activities. At the same time, office parking demand is expected to decrease; however, the reduction will occur across both the parking building and those parked off-site. Assuming this occurs proportionately, long-stay parking demand outside the parking building would reduce by approximately 3 spaces compared to the 11am peak. Therefore, the minimum off-site parking demand at 1pm would be 38 spaces, which is higher than at 11am which coincides with the overall peak parking demand of the activity.

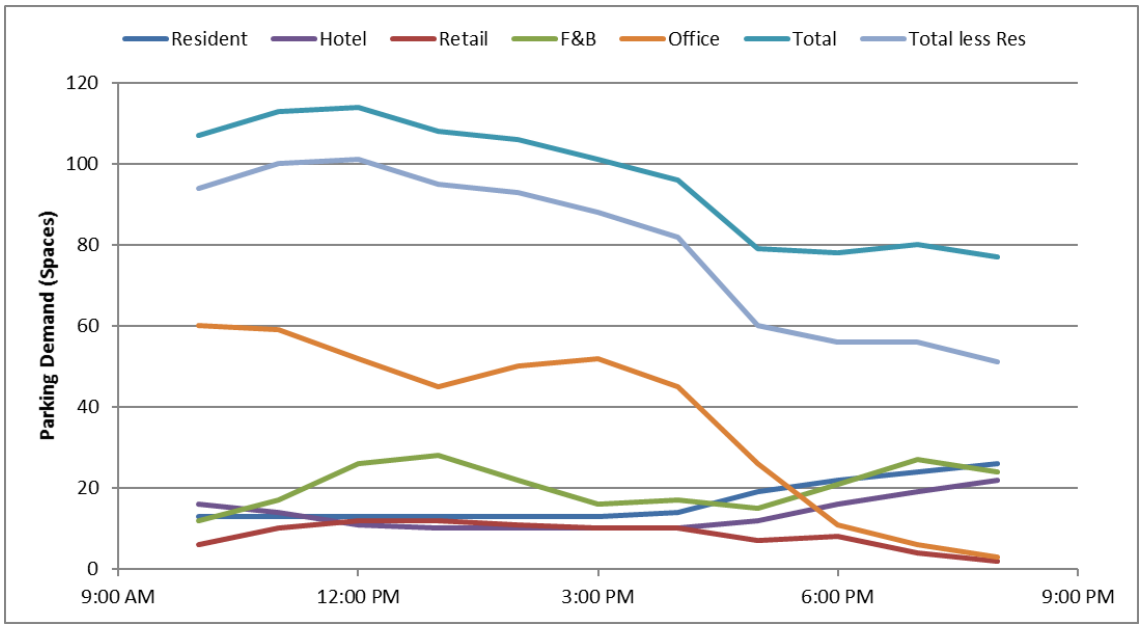
This demonstrates the intricacies involved in determining on-site and off-site parking demands when on-site spaces are allocated for some uses, but not others. In the case of The Bay Hill development, the ability to share spaces in the parking building is very limited and therefore the use of a parking model to simulate overall parking demands needs to be treated very cautiously and sensibility checks of the outputs applied.

The response to RFI shows a large drop in the food and beverage and retail parking demand between Figure 4.1 (TAR) and Figure 4.2 (response to RFI). The former gives a combined peak parking demand for these activities of 40 spaces, while the latter produces a combined peak demand of approximately 27 spaces (reduction of 13 spaces).

Initially, it was presumed that the parking model was sufficiently sophisticated to allocated an increasing portion of food and beverage and retail activities trade to office workers, as the scale of the office component grows. However, upon examination of the parking model provided by the Applicant, it shows that no such interrelationship exists. ***Whilst a reduction in parking demand for food and beverage and retail activities with increasing office space is likely to hold true to a certain extent, in this instance, the entire parking demand reduction for food and beverage and retail activities (13 spaces at 1pm) is offset by a corresponding increase in parking demand of 13 spaces for the office activity during the same period. It is difficult to reconcile how an increase in office GFA of 954m^2 with no change in GFA to the food and beverage or retail activities can result in no net parking demand change at 1pm. This is suggestive of an error with the model.***

The revised office GFA has been inserted to the parking model provided and the resulting outcome demand outcome is shown in **Figure 3.3**.

Figure 3.3
Reviewer calculated parking demands using Parking Model



This shows a parking demand of 40 vehicles for the food and beverage and retail activities at 1pm, and a much-increased demand for office parking compared to that provided in the response to RFI.

NZTA Research Report 453 Trips and parking related to land use, November 2011 gives average parking rates of 3.6/100m^2 GFA for small shopping centres, and 8.0/100m^2 GFA for drive in fast food restaurants in Table 8.10. These rates would generate a peak parking demand of 47 spaces (15 + 32). This is considerably more than the peak demand of 27 spaces estimated in the response to RFI, but largely consistent with the estimated in the TAR of 40 spaces. On this basis, a peak parking demand for the food and beverage and retail activities is expected to be more in the order of 40 spaces and not the 27 spaces estimated in the response to RFI.

The response to the RFI cites surveys of two public parking areas to the east of Theodosia Street (within the same block as the proposed development) and concludes there is sufficient available capacity within

these parking areas to accommodate all short-term parking demands. Whilst this is technically true for a parking demand of 27 spaces, it does not hold true if demand is in the order of 40 spaces as expected. Furthermore, the parking spaces are relatively inconveniently located, and difficult to find if users are unfamiliar with Timaru, which is likely to be one reason why these are current underutilised to the extent observed.

The TAR noted that *"The balance of the parking demands could be met in The Terrace car park or on the street.*" (Section 8.1.6 Rule 6.8.3 Performance Standards for Parking).

The TAR does not provide any information on the availability of parking at The Terrace off-street public car park. It is also noted that this car park is not owned by TDC, but is leased. Therefore, there is no guarantee that these spaces will be available in the future. The statement above also appears to imply that there is available parking on-street, but this is not discussed in detail in terms of location, quantity and availability.

Mr Frazer Munro, Surveyor, Timaru District Council, was asked for information on The Terrace public car park, his response is given below.

"*The off-street public carpark on The Terrace within 200m of the site is the carpark on top of the Kathmandu shop. It provides 65 spaces at 2 hour free parking. Being free and close to town it is typically full. Unfortunately, we do not have any occupancy data other than anecdotal observations from the parking inspectors who confirm it is generally always at capacity*".

The TAR includes reference to 33 on-street parking spaces on The Bay Hill. These have a time restriction of either 30 minutes or 120 minutes depending on their location. A parking survey was undertaken by Timaru District Council in April 2016[1]. This survey found the on-street spaces on The Bay Hill have average occupancies between 10am and 4pm of 30% to 70% depending on the side of the road and time restrictions applied. Peak occupancies are in the order of 50% to 90%, which was observed at 12pm. This suggest that fewer than 16 parking spaces are likely to be available in The Bay Hill at the peak peaking time.

Based on the findings of this survey, the surveys undertaken by the applicant (which was verified through the Timaru District Council survey), and the expected peak parking demands, it is concluded that parking demand would meet and possibly exceed available supply in the area. It would certainly exceed the practical capacity (commonly accepted as 85% occupancy) of these public parking facilities. On this basis, it is concluded that the amount of parking expected to be generated by the proposed activity cannot be absorbed within the receiving environment without creating adverse effects, which includes encumbering costs or development potential on other parties. As a result, the effects of the parking supply are considered more than minor.

In addition to the above, the peak parking demand generated by the office and hotel components of the activity also appear to be low. NZ Transport Agency Research Report 453 'Trips and Parking Related to Land Use' (2011) identifies a design parking demand of 3.2 spaces per 100m^2 GFA for offices, whilst the TDB database has an average peak parking demand of 2.7 spaces per 100m^2 GFA. Application of these rates equates to 74 spaces and 62 spaces respectively, both of which are considerably higher than the estimated peak parking demand of the office component estimated in the response to RFI of 47 spaces. They are however, similar to the peak parking demand of 60 spaces shown in Figure 3.3.

The applicant has proposed a condition of consent be considered that requires 15 parking spaces be leased within 5 minutes walking distance on a long-term basis for use by offices. This would have the effect of exceeding (48 spaces on-site or leased) the statutory parking requirements of the office component of the activity (46 spaces). However, the referenced information sources and assessment undertaken are suggestive of a continued shortfall of at least 14 spaces at peak times.

[1] Timaru Parking Study 2016 – Ableys Transportation Consultants.

For hotel activities, the two aforementioned documents indicate parking demand rates of 1.8 spaces per room and 1.2 spaces per room respectively. Whilst, these rates appear high, and the hotels are likely to include other facilities that generate parking demand, such as conference rooms and/or on-site dining, the peak parking demand of approximately 36 spaces at 8pm (as derived from Figure 3.2) corresponds to a peak parking demand rate of 0.58 spaces per room. The low parking demand rate is possibly a function of the high reliance on taxis, which as discussed earlier, appears fanciful for Timaru. The peak parking demand calculated from the parking model supplied by the Applicant is 22 spaces, which equates to an even lower parking rate of 0.35 spaces per room. Both rates are excessively low compared to rates accepted by the industry. ***A peak parking demand rate of between 0.8 and 1.0 space per room (50 to 62 spaces) is likely to be appropriate in this instance.***

Given peak parking demand for the hotel component of the activity will occur outside of typical office hours, it is possible that some of the office spaces could be used to accommodate hotel parking in the evening. This would however, require vehicles to be shifted to an alternative site prior to the arrival of office workers each morning. If this avenue was to be pursued by the applicant, then it is likely that further spaces would need to be leased to ensure this is possible.

There are several aspects of the parking demands estimated by the Applicant that are concerning, including:

- ***The reduction in food and beverage and retail parking demand between the TAR and response to RFI;***
- ***Apparent changes to the parking model between the TAR and response to RFI that have not been explained by the Applicant;***
- ***The low parking demands for the office and hotel components of the development; and***
- ***The inability to reproduce the parking demands presented by the Applicant in the response to RFI by simple substitution of an increased office GFA into the parking model provided as part of the TAR.***

For these reasons, and the issues associated with using a shared parking model when not all spaces on-site are available for use in a shared capacity, it is concluded that the parking demands will be considerably greater than claimed by the Applicant. The demands in Figure 3.3 are expected to provide a better estimate of parking demand except for the hotel component which is considered to be very low. As a result, the amount of parking that cannot be accommodated on site is likely to be of a magnitude that will create adverse effects on the receiving environment that will be more than minor.

4. Parking Layout and Service Vehicle Access

4.1 Parking Layout

The parking layout plans provided indicate that the three levels of parking provide a total of 90 parking spaces and a loading bay. A single lane circular ramp controlled by signals will link the parking levels. The basement level has 60 parking spaces, 24 of which are configured as tandem spaces. These would be managed by the hotel and used by hotel valet parking attendants. Of the remaining parking, 32 spaces would be allocated to residents. The rest would be used for office parking. It is proposed that use of parking facilities will be limited to residents, hotel valet parking attendants and office employees. The parking plans provided show three accessible spaces on the ground level next to the hotel access passage and lifts.

The layout and proposed management of the parking area is such that upon entering the building, an inbound vehicle may be required to queue outside the accessible spaces while an outbound vehicle is negotiating the single lane circular ramp. The queuing area provides space for two to three vehicles depending on vehicle size.

Based on the expected inbound and outbound flows to/from the parking building in the PM peak hour, there is a 40% probability of an inbound vehicle having to queue to give way to an outbound vehicle. This is calculated on the assumption that an outbound vehicle would trigger a red signal that would be displayed for approximately 20 seconds. It is likely therefore that two inbound vehicles will be required to queue within the peak hour and a small probability that three or more vehicles may be required to queue. The likelihood of multiple vehicles queuing will be a function of arrival and departure patterns within the peak hour. In the event that three or more vehicles are queuing to access the circular ramp, there is space adjacent the accessible spaces for an outbound vehicle to move clear of the ramp to allow inbound vehicles to move forward. ***On this basis, it is concluded that the effect of the short two-way section within the ground floor of the parking building is unlikely to generate effects that would be considered more than minor.***

It is noted that the parking space in the basement adjacent to the bike parking area is inaccessible by a design vehicle if the adjacent space is also occupied. ***If the parking building were available to the public this would be an issue needing attention; however, in this instance it is expected that the use of the space will be managed by those allocating spaces within the building. As such, the effect of this is less than minor.***

4.2 Car Park Access

Access to the parking building is provided from Sefton Street (SH78). The access is approximately 8m wide and can accommodate inbound and outbound vehicles at the same time. However, the internal configuration of the parking building is such that an entering vehicle needs to occupy the full width of the access aisle leading to the circular ramp to negotiate the left turn upon entering the building. As such, if there is more than one car waiting to exit the parking building then an inbound vehicle will be unable to enter.

The performance of the parking building access has been modelled in Sidra. This shows that the 95th percentile number of queued vehicles exiting the parking building in the PM peak hour is 0.9 vehicles. The frequency of there being more than one vehicle queued to exit is therefore low. As a sensitivity test, volumes on Sefton Street across the parking building access have been increased by 20% to check the

access would continue to operate efficiently if volumes on the State Highway network increased. This shows the 95th percentile queue would increase to 1.5 vehicles, which means inbound access would be temporarily restricted. Under this increased demand scenario, a queue of 1.0 vehicle is the 80th percentile queue i.e. the queue would be longer than one vehicle for up to 20% of the peak hour.

Based on this analysis it is concluded that the likelihood of outbound vehicles blocking the entry of inbound vehicles and generating queuing out to Sefton Street (SH78) is low although this may become a more frequent occurrence is volumes on Sefton Street increase in the future. In the event that inbound queuing does occur, it would be of a short duration and unlikely to result in any safety or efficiency impacts given the wide lane and proposed provision of a flush median. As a result, the effects of this are considered to be less than minor.

The proposed provision of a 2.5m wide flush median on Sefton Street (SH78) is to accommodate right turn vehicle movements into the parking building access. To facilitate the flush median, the no stopping restriction on the northern side of Sefton Street is proposed to be extended further east along the frontage resulting in the loss of three on-street parking spaces. ***As Sefton Street is a State Highway, all changes to the layout/configuration of this road will need the approval of the NZ Transport Agency or Timaru District Council if the Agency has delegated such matters to the Council.***

The TAR points out that the driveway configuration does not provide a visibility splay for pedestrians approaching from the east. Consequently, it is recommended in the TAR that visual or audio signals are provided to alert pedestrians to departing vehicles. ***Whilst this would adequately mitigate the safety risk, the applicant needs to give consideration to potential reverse sensitive effects that an audio signal may create with the residential and hotel components of the development, and ensure such a feature would remain active if the condition formed part of any consent granted. A visibility splay may be a more preferable solution.***

4.3 Servicing

The medium rigid truck tracking curves provided in the response to RFI shows that access to the loading dock is feasible. It is noted that the tracking path will conflict with vehicle movements within the car park. As a result, the response to RFI recommends that ***service vehicles access the parking building at off-peak times. This recommendation is supported. It is suggested that this is mandated through the inclusion of a condition that restricts the hours of access for service vehicles so as not to coincide with peak car movement times.***

5. District Plan Assessment

The transport rules of the District Plan are presented in **Table 5.1**. The table indicates compliance of the development with the rule and provides comments describing any non-compliances.

***Table 5.1** District Plan Rules Compliance*

Rule	Compliance	Comment
6.7.2(1)(a): Parking and loading space dimensions to comply with table or NZS2890.1.	No - Tandem parking is used for 24 spaces in basement level.	Acceptable provided the parking building is not used by general public
6.7.2(1)(b): Parking for people with disabilities	Yes – 3 spaces provided	The width of 3.5m meets the minimum requirements of NZS2890.6 and is acceptable. NZS2890.6-2009 requires a minimum of 2 accessible parking spaces for 50 parking spaces and at least 1 for every additional 50 spaces. As 90 spaces are to be available, 3 accessible parking spaces are required.
6.7.2(c) A minimum clearance of 300mm is required between the tracking curve and a fixed object. As access is from a state highway, the access and circulation ramps shall be designed to the 99th percentile tracking curve.	No	Parking space access is acceptable provided the parking building is not used by the general public.
6.7.2(2) Every parking and/or loading space shall be located on the same site as the activity to which it relates, be available for both visitor and staff use and shall have adequate usable access to that activity or building unless parking is not permitted to be provided on that site or a cash contribution has been accepted in lieu of parking. Each loading space shall adjoin an adequate area for goods handling and shall be convenient to a service area or lift.	No (parking) Yes (loading dock)	Parking provided on site is not available to all visitors.
6.7.2(3) Loading space should have a minimum width of 3.5m, depth of 8m and height of 3.8m. The gradient of service and manoeuvring areas shall not exceed 1:12.5.	Yes	Loading bay is 6.2m wide and 8.3m deep. According to the TAR it is 4.5m high. It is located on the ground floor.

Rule	Compliance	Comment
6.7.3(13) As the site fronts a Primary Road (Sefton Street) and has frontage to a Secondary Road (The Bay Hill), all vehicle access shall be provided to the Secondary Road.	No. The parking building has access to Sefton Street.	It is appropriate that the access not be located on The Bay Hill due to pedestrian and amenity function of The Bay Hill. The proposed change to the design of Sefton Street will enable safe access to the parking building with only minor impact on its through traffic function.
6.8.3 This rule sets the minimum number of parking spaces to be provided on site.	No	The minimum parking requirements set for individual uses add up to 154 spaces.

5.1 Summary of Non-Compliances

The proposed development generates multiple non-compliances with the access, loading and parking rules of the Timaru District Plan. These are summarised as follows:

- The parking building design is not adequate for general public use, but is acceptable provided its use is limited to residents, employees and valet parking attendants.
- The parking building has direct access to Sefton Street, which is a State Highway. In this instance, access from Sefton Street is preferred over The Bay Hill.
- The proposal provides 90 parking spaces on site for residents, hotel guests and office employees. A condition of consent offered by the Applicant is for the lease of an additional 15 spaces within a five minute walk of the development for use by office employees. Section 3 of this report provides extensive assessment of the parking supply and demand relationship and concludes the parking arrangements are insufficient, and will generate adverse effects on the receiving environment that will be more than minor.

6. Summary and Recommendations

The key findings and recommendations of the review of the Transportation Assessment Report and subsequent response to RFI that forms part of the resource consent application for a mixed use development of the site of the Hydro Grand Hotel, 10 The Bay Hill are summarised below.

1) The trip generation rates appear to be slightly conservative (higher than what may be expected) and are within the range of rates accepted by the industry based on the TDB database.
2) The directionality splits in movements (inbound v outbound) for each of the individual uses are generally appropriate and within limits commonly accepted by the industry.
3) Assumptions around valet parking and the use of taxis that are do not appear to be reflected in the trip generation calculations.
4) Based on the current Timaru taxi fleet and demand for travel by taxi in Timaru, it appears fanciful to expect that 75% of all trips generated by the hotel in a peak hour would be by taxi.
5) The wider network effects are largely immaterial given there is considerable spare capacity at the two nearby signalised intersections of Theodosia / Sefton and Sefton / Port Loop / Stafford / The Bay Hill, even allowing for significant growth in travel on the State Highway.
6) There are several aspects of the parking demands estimated by the Applicant that are concerning, including:
    a) The reduction in food and beverage and retail parking demand between the TAR and response to RFI;
    b) Apparent changes to the parking model between the TAR and response to RFI that have not been explained by the Applicant;
    c) The low parking demands for the office and hotel components of the development; and
    d) The inability to reproduce the parking demands presented by the Applicant in the response to RFI by simple substitution of an increased office GFA into the parking model provided as part of the TAR.

    For these reasons, and the issues associated with using a shared parking model when not all spaces on-site are available for use in a shared capacity, it is concluded that the parking demands will be considerably greater than claimed by the Applicant. The demands in Figure 3.3 are expected to provide a better estimate of parking demand except for the hotel component which is considered to be very low. As a result, the amount of parking that cannot be accommodated on site is likely to be of a magnitude that will create adverse effects on the receiving environment that will be more than minor.
7) The effect of the short two-way section within the ground floor of the parking building is unlikely to generate effects that would be considered more than minor.
8) The likelihood of outbound vehicles blocking the entry of inbound vehicles and generating queuing out to Sefton Street (SH78) is low although this may become a more frequent occurrence is volumes on Sefton Street increase in the future. In the event that inbound queuing does occur, it would be of a short duration and unlikely to result in any safety or efficiency impacts given the wide lane and proposed provision of a flush median. As a result, the effects of this are considered to be less than minor.
9) As Sefton Street is a State Highway, all changes to the layout/configuration of this road will need the approval of the NZ Transport Agency or Timaru District Council if the Agency has delegated such matters to the Council.
10) Consideration needs to be given to potential reverse sensitive effects that an audio signal at the parking building exit may create with the residential and hotel components of the development, and

ensure such a feature would remain active if the condition formed part of any consent granted. A visibility splay may be a more preferable solution.

11) The parking building design is not adequate for general public use, but is acceptable provided its use is limited to residents, employees and valet parking attendants.

12) The parking building has direct access to Sefton Street, which is a State Highway. In this instance, access from Sefton Street is preferred over The Bay Hill.

Overall, the key issue surrounding the proposed development from a transport perspective is the ability of the receiving transport environment to absorb the parking demands of the activity that are not accommodated on-site without creating adverse effects on others. Based on the information provided, and concerns over inconsistencies between information presented in the TAR and response to RFI, it is concluded that the effects of parking demand off-site will create adverse effects on the receiving environment that will be more than minor.

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