

# **Summerset Boulcott Section 42A Transportation Report**

## **September 2018**

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## 1. INTRODUCTION

This Section 42A report which covers the traffic and transportation components of the resource consent application to develop a Summerset retirement village in Boulcott in Lower Hutt has been prepared by Harriet Fraser on behalf of Hutt City Council. Preparation for writing this report has included:

- (i) a number of site visits at different times of the day;
- (ii) review of the TDG Transportation Assessment Report (TAR) dated March 2018 that accompanied the resource consent application and the subsequent further information response dated 27 June 2018; and
- (iii) review of all the submissions.

The scope of the report includes:

- (i) details of the proposal;
- (ii) planning context;
- (iii) the existing traffic environment;
- (iv) compliance with the District Plan transport provisions;
- (v) comments on the transportation assessment and further information produced by the Applicant;
- (vi) comments on the submissions; and
- (vii) recommendations.

## 2. PROPOSAL

As set out in Section 2.1 of the Assessment of Environmental Effects (AEE), the existing site at 32A Hathaway Avenue in Boulcott, Lower Hutt has the following characteristics:

- (i) 2.93 hectare site;
- (ii) the site can be legally accessed from Boulcott Street, Military Road and Hathaway Avenue with vehicle access currently from Military Road. There is no formed vehicle access from Boulcott Street and the Hathaway Avenue frontage is a narrow strip of land between 32 and 34 Hathaway Avenue which currently has no formed access across it; and
- (iii) the now redundant golf clubhouse and associated carpark will likely be used as a site office during the early stages of construction and then demolished.

The key elements of the proposed retirement village as set out in Section 2.4 of the AEE include:

- (i) vehicle access to both Boulcott Street and Military Road with entrance structure, gates and signage at both access points;
- (ii) two-way vehicle driveway through the site;
- (iii) foundations, buildings, structures, services and recreational facilities (including a bowling green) will be constructed;
- (iv) the village will be fenced, paved and landscaped. Close-board fencing is proposed along the boundaries with the residential sites and Boulcott School;
- (v) the retirement village will comprise:
  - a. 42 villas (self-contained units)
  - b. 109 apartments (self-contained units)
  - c. 53 serviced apartments
  - d. 30 care rooms
  - e. 10 memory care rooms
- (vi) construction is anticipated to occur in six stages over a five year period; and
- (vii) construction vehicle access will be maximised via Harcourt Werry Drive with an agreement in place with the golf club.

Section 4 of the TAR describes the traffic arrangements for the proposed development as follows:

- (i) vehicle access to and from each of Boulcott Street and Military Road with no vehicle access to Hathaway Avenue;
- (ii) construction activity in four primary stages across approximately four years;
- (iii) internal road to have a slow speed environment with a width of 5.5m;
- (iv) all 42 of the villas to include a single garage with 16 also including a stacked visitor space;
- (v) the 109 independent apartments to be supported by 115 parking spaces (including three accessible spaces) within the basement and undercroft parking areas;
- (vi) 60 parking spaces (including three accessible spaces) along the internal road for use by staff and visitors; and
- (vii) dedicated servicing area adjacent to the main kitchen with access to Boulcott Street via the internal road.

Section 9 of the TAR includes the following provisions with regard to access:

- (i) Boulcott Street is primary access and Military Road secondary access;
- (ii) all deliveries and servicing to occur via Boulcott Street;
- (iii) Boulcott Street access is 9m wide at the road boundary;
- (iv) Military Road access to accommodate cars only and has access width of 7m at the road boundary;
- (v) the internal road has a width of at least 5.5m widening to at least 6.2m where parking is accessed;
- (vi) passing for 85<sup>th</sup> percentile cars on the access to the basement carpark;
- (vii) pedestrian connections to both Military Road and Boulcott Street; and
- (viii) within the site pedestrians accommodated on pathways or as shared users on the internal road.

It is confirmed in the further information response to traffic matters that there will be no pedestrian or vehicle access to Hathaway Avenue via the strip between 32 and 34 Hathaway Avenue. Appendix A to the further information response usefully shows a good level of pedestrian path connectivity within the site. Pedestrians have options to walk on paths away from the internal road.

The images included in Appendix B to the further information response provide enough detail to indicate that adequate pedestrian and vehicle sight lines are achievable at the driveway connection to Boulcott Street. A visual simulation of the Military Road entry is included in Appendix B and a footpath connection is shown extending through the site along the northern side of the internal road to Military Road in Appendix A. The detail of the pedestrian connections with the existing footpaths on Military Road is not shown.

The further information response explains that the basement carpark is for resident use only and that residents typically have small cars, 50<sup>th</sup> percentile, and that therefore the design of the carpark access to accommodate 85<sup>th</sup> percentile cars can be expected to operate safely and efficiently.

Section 10.2 of the TAR describes the design of the parking spaces. The individual garages will have door widths of at least 2.4m and clear widths of at least 3.0m complying with the requirements of AS/NZS 2890.1:2004. Appendix D of the further information response provides details of the clear internal lengths of the garages. These vary between 5.00m and 5.44m with only four of the garages being 5.4m or longer in length. As previously the further information response explains that the garages are for resident use and that the majority of vehicles can be expected to be small cars. Care should be taken to ensure that potential residents are aware of

any vehicle size restrictions and the available length of the garages should not be further reduced for instance by laundry equipment, shelving or storage facilities.

The basement parking spaces will have a width of 2.6m with an additional 0.3m clearance to walls and columns and aisle widths of at least 6.2m. Three small car spaces have been included in the design of the basement carpark. The inclusion of some small car spaces is considered appropriate given that many of the residents can be expected to own small cars. The visitor and staff parking spaces accessed from the internal road are all dimensioned to meet the standards of AS/NZS2890.1:2004. Six accessible parks are included.

Section 11 of the TAR describes the following provisions with regard to servicing:

- (i) only two truck visits anticipated per day;
- (ii) maximum sized truck expected to visit the site is an 8m rigid truck;
- (iii) routine courier pick-ups and deliveries will be made to and from the Main Building;
- (iv) all deliveries and service vehicle access to be via Boulcott Street;
- (v) deliveries and service vehicle access to be restricted to outside the times of school drop-off and pick-up;
- (vi) on-site truck turning demonstrated;
- (vii) ambulance access and turning demonstrated; and
- (viii) Servicing Management Plan to be developed.

Section 12 of the TAR describes the proposed arrangement for construction traffic access and includes the following:

- (i) all trucks will access to and from the site via the golf course, throughout all construction stages. No trucks will use the local Boulcott road network for construction access;
- (ii) trade vehicles and staff vehicles will access the site:
  - via Boulcott Street for Stage 1; and
  - via Military Road for Stages 2, 3 and 4.
- (iii) recommended scope included for the Construction Traffic Management Plan.

### 3. PLANNING CONTEXT

A joint statement between the various traffic engineers (Mark Georgeson (Summerset), Gary Clark (Council) and David Wanty (Boulcott Preservation Society)) prior to the Plan Change hearing included the following:

***The experts agreed:***

***Intersections***

*1. The intersections of Boulcott Street (in particular) and Military Road on High Street are operating at less than acceptable levels now.*

*2. The experts understand that the Applicant and the Determining Authority propose that an Agreement be prepared to give effect to installation of traffic signals at the Boulcott Street / High Street intersection.*

*3. Traffic signals at the Boulcott Street / High Street intersection will improve existing traffic capacity and safety issues at this intersection, and will also provide some relief to traffic turning to and from Military Road.*

*4. The installation of new signals at the Boulcott Street / High Street intersection will be able to handle additional traffic above the existing and proposed situation enabled by the Plan Change.*

***Site Access***

*5. The size and shape of the site lends itself to two motor vehicle access points.*

***Trip Generation***

*6. The experts agree that the trip generation rates used in the TDG Transportation Assessment are acceptable.*

7. Residential development of up to 60 dwellings would present a similar level of additional traffic volumes on the local road network as those for the proposed retirement village.

However, importantly there would be increased traffic volumes in the AM and PM peak periods for residential development compared to a retirement village.

**Pedestrians and On-Street Parking**

8. Development enabled by the Plan Change will not noticeably change the existing pedestrian and parking environment along Boulcott Street or other streets within the area northwest of High Street.

The experts reach this conclusion due to the slow speed of traffic, the absence of through-traffic, and that development enabled by the Plan Change will attract modest (low) traffic volumes.

**Carparking**

9. The Plan Change rule relating to car parking for retirement villages will enable sufficient on-site car parking to be provided.

**Traffic Effects**

10. The experts acknowledge submitters' concerns around the narrow roads in the vicinity of the Plan Change site. The experts agree that the level of traffic effect arising from the Proposed Plan Change on the movement along these roads would be minor.

Mr Wanty agrees, subject to no motor vehicle access to/from the Plan Change site via Hathaway Avenue.

**Construction Traffic**

11. Access across the golf course to and from Harcourt Werry Drive for earthworks construction is preferred.

12. It is necessary for a construction traffic management plan to be prepared for development of the Plan Change site.

Mr Georgeson and Mr Clark agree this plan should be required at the resource consent stage. Mr Wanty seeks consideration of this at the Plan Change stage.

The above statement provides useful background material but the following points should be noted:

- (i) the statement helped inform the Plan Change process and the matters to be included in Rule 4A 2.3.1(n) but it preceded the hearing and as such further information and details will have emerged during the hearing;
- (ii) there are different experts involved in the current resource consent process who are not bound to the material contained in the joint statement. An updated joint statement can be expected to be developed as part of the current planning process;
- (iii) there have been a number of changes with regard to traffic matters since the Plan Change hearing as follows:
  - a. most of the local traffic data relied upon at the Plan Change hearing is from 2014 or earlier;
  - b. High Street has been upgraded to an Arterial Road in the Council's road hierarchy;
  - c. Plan Change 39 has resulted to changes in the District Plan transport provisions, in particular with regard to parking provision and the thorough assessment of high trip generating activities; and
  - d. the new clubhouse has opened at the Golf Course.
- (iv) neither the Plan Change documents nor the Resource Consent application appear to include data for the forecast performance of the proposed traffic signals at the intersection of High Street and Boulcott Street;
- (v) the trip generation rates that were agreed upon do not include comparison to data from other similar Summerset developments;
- (vi) no forecast was included of traffic levels at the times of school drop-off and pick-up;
- (vii) the adequacy of the on-site parking provision did not include comparison to data from other similar Summerset developments;

- (viii) while the experts agreed that the traffic effects on the local roads would be minor no assessment of the traffic carrying capacity of the streets or the particular effects on the school was undertaken; and
- (ix) different opinions regarding the timing for the preparation of the Construction Traffic Management Plan.

Private Plan Change 35 became operative on 18 January 2017 and resulted in the site being rezoned for general residential purposes with particular provision for housing for the elderly subject to a number of areas of discretionary assessment. With regard to traffic matters the following points included in Rule 4A 2.3.1(n) are of particular relevance:

*The heading for each class of effects listed provides the scope of the discretion to address any effects of the development of that class. The rest of the text draws attention to particular aspects of that class that will need to be carefully considered. The activity must also meet the standards or conditions in 4A 2.3(m).*

The 'class of effects' listed are:

**(i) Traffic Effects**

*The safe and efficient movement of all vehicle and pedestrian traffic needs to be ensured. It should be demonstrated that traffic generation and vehicles entering and leaving the site will not adversely affect normal traffic flows on the road, or cause a vehicle or pedestrian hazard. Provision should also be made for pedestrians.*

**(ii) Parking Effects**

*The extent to which the proposal appropriately provides for the vehicle parking needs of the activity, without adversely affecting the vehicle parking requirements of the surrounding neighbourhood, as demonstrated through the provision of a parking management plan.*

**(iii) Construction Effects**

*Consideration shall be given to potential construction noise, traffic, dust, sediment runoff and vibration effects on the immediate residential area, including Boulcott School and Kindergarten. This consideration shall include:*

- c) *The provision of a construction traffic management plan;*

Issues, Objectives and Policies included in Section 14A Transport of the District Plan which have relevance to the proposal being considered are:

**Issue 14A 2.1**

*A safe, efficient, resilient, multi-modal transport network that is well integrated with land use and development is essential for both sustainable development and social and economic wellbeing.*

**Issue 14A 2.4**

*Land use and development can adversely affect the safety and efficiency of the transport network through the generation of additional traffic.*

**Issue 14A 2.5**

*Land use and development can adversely affect the safety and efficiency of the transport network through inappropriate design of on-site transport facilities (vehicle access, parking, manoeuvring and loading facilities).*

**Objective 14A 3.1**

*A safe, efficient, resilient and well-connected transport network that is integrated with land use patterns, meets local, regional and national transport needs, facilitates and enables urban growth and economic development, and provides for all modes of transport.*

**Objective 14A 3.4**

*Adverse effects on the safety and efficiency of the transport network from land use and development that generate high volumes of traffic are managed.*

**Objective 14A 3.5**

*Adverse effects on the safety and efficiency of the transport network from on-site transport facilities (vehicle access, parking, manoeuvring and loading facilities) are managed.*

**Policy 14A 4.2**

*Land use, subdivision and development should not cause significant adverse effects on the connectivity, accessibility and safety of the transport network, and, where appropriate, should:*

- *seek to improve connectivity within and between communities; and*
- *enable walking, cycling and access to public transport.*

**Policy 14A 4.5**

*Any activity that is a High Trip Generator must be assessed on a case by case basis. Adverse effects of High Trip Generators on the safety and efficiency of the transport network should be managed through the design and location of land use, subdivision or development.*

**Policy 14A 4.6**

*Vehicle access, parking, manoeuvring and loading facilities should be designed to standards that ensure they do not compromise the safety and efficiency of the transport network.*

**Policy 14A 4.7**

*The transport network, land use, subdivision and development should provide for all transport modes.*

The following standards included in Section 14A Transport Appendix Transport 1 – Standards apply to the proposed retirement village:

- (i) all roads must be designed and constructed in accordance with NZS 4404:2010 Land Development and Subdivision Infrastructure (14A Standard 1(b))
- (ii) service lanes, private ways, pedestrian accessways and walkways must be designed and constructed in accordance with Section 3 of NZS 4404:2010 Land Development and Subdivision Infrastructure except that for the provisions included in the following table: (14A Standard 1(c))

| No. of Potential Dwellings | Legal Width | Formation Width                 |
|----------------------------|-------------|---------------------------------|
| 1                          | 3m          | No specific requirements        |
| 2                          | 3m          | No specific requirements        |
| 3                          | 4m          | 3m carriageway                  |
| 4-6                        | 6m          | 5m carriageway                  |
| 7-10                       | 7m          | 5m carriageway plus 1m footpath |

- (iii) no more than two separate crossings for any front site. The total width of such crossings must not exceed 50% of the road frontage (14A Standard 2(a))
- (iv) separation distance of at least 1m between crossings measured at the kerb/ carriageway edge (14A Standard 2(a))
- (v) site access must be designed and constructed in accordance with Section 3 of AS/NZS 2890.1:2004 Parking facilities Part 1: Off-street car parking (14A Standard 2(a))
- (vi) where a vehicle access serves three or more dwellings, it must have a minimum width of 4 metres to allow for fire service vehicles (14A Standard 2(a))
- (vii) separation distance of 10m between an access and an intersection with an Access Road (14A Standard 2(b))
- (viii) sufficient area must be provided for vehicles to stand, queue and make all necessary manoeuvres without using the public road reserve, and without using the area provided for parking, servicing, loading or storage purposes (14A Standard 2(c))
- (ix) sufficient area must be provided to allow vehicles to enter and exit the site in a forward direction except where the access is to a single dwelling and accesses an Access, Secondary Collector or Primary Collector Road (14A Standard 2(c))
- (x) 0.7 parking spaces per unit/apartment and 0.3 spaces per rest home bed (14A Standard 4(a))

- (xi) mobility parking to be provided in accordance with Section 5 of NZS 4121:2004 Design for Access and Mobility – Buildings and Associated Facilities (14A Standard 4(b))
- (xii) car parking spaces must be provided on site (14A Standard 4(c))
- (xiii) car parking spaces must comply with the requirements of AS/NZS 2890.1:2004 (14A Standard 4(d))
- (xiv) one cycle park per 10 staff members and one shower. Cycle parking for staff must be located in a covered area where access by the general public is generally excluded (14A Standard 4(e))
- (xv) provision for on-site loading for at least one heavy rigid truck (14A Standard 5(a))
- (xvi) loading facility to be designed, constructed and maintained in accordance with AS 2890.2:2002 Parking Facilities Part 2: Off-street commercial vehicle facilities (14A Standard 5(b))

Section 3 of AS/NZS 2890.1:2004 includes the following with regard to access provisions:

- (i) access from frontage roads shall be formed in such a way as to be clearly recognized by road users as either an access driveway or as an intersection (3.1.1)
- (ii) two-way access driveway width of 6.0 to 9.0m(3.2.1)
- (iii) minimum sight distance along frontage road from 2.5m back from kerb of 45m with desirable minimum of 69m (3.2.4(a))
- (iv) provision of 2.5m long by 2m wide pedestrian visibility triangle on exiting side of two-way driveway or on both sides of exiting one-way driveway (3.2.4(b))
- (v) maximum grades for driveways of:
  - o 1 in 6 (16.7%) along length
  - o 1 in 20 (5%) across property line
  - o 1 in 40 (2.5%) across footpath (2.6.2 & 3.3(d))

Section 14A Transport Appendix Transport 2 – High Trip Generator Thresholds includes thresholds of residential developments with more than 60 dwelling houses or an activity with more than 500 vehicle trips per day. Triggering this threshold means that the proposal is assessed as a Restricted Discretionary Activity with regard to 'effects of the activity on the transport network including impacts on on-street parking'. In terms of required assessment this is very similar to that required by Rule R4A 2.3.1(n).

#### **4. EXISTING LOCAL TRAFFIC CHARACTERISTICS**

Section 2.2 of the TAR describes the existing transport environment. It includes a description of the local road hierarchy, road cross-sections, on-street parking, topography, pedestrian routes, access to public transport and the existing form of each of the Military Road and Boulcott Street intersections with High Street. Reference is made to the kerb-to-kerb widths of Boulcott Street and Military Road with a single width included for each. In practice the trafficable width of both roads varies along their length and further information was sought in this regard.

The further information response to traffic matters includes in Table 2 a description of the cross-sections of both Boulcott Street and Military Road at various locations along their length. On this basis Boulcott Street has a trafficable width between parked vehicles of 6m to 10.8m along its length. Military Road has a trafficable width between parked vehicles of 4.4m to 8.2m along its length. As such Boulcott Street accommodates two-way traffic flow along its full length. The cross-sections in Table 2 imply that the only section of single lane two-way flow on Military Road is to the south of Hathaway Avenue. Extracts from the Council's aerial photography and as shown here in Figures 1 and 2, indicate that there are sections of single lane two-way flow between:

- (i) 2 and 6 Military Road to the north of High Street; and
- (ii) 17 and 29 Military Road between Troon Crescent and Hathaway Avenue.

As shown, no stopping lines across driveways create passing opportunities. The different cross-sections mean that Boulcott Street has a larger traffic carrying capacity than Military Road.



**Figures 1 & 2: 2 to 6 Military Road and 17 to 29 Military Road**

Section 3 of the TAR describes daily and hourly traffic flows on each of Military Road, Boulcott Street and High Street. No dates for this count data are provided nor whether the reported flows are five or seven day averages. With the most recent traffic flow data held by Council being for 2012 and 2013 for Boulcott Street and Military Road, these counts are scheduled to be redone in the coming weeks and the data will be made available in the coming weeks.

The further information response explains that the High Street count data was a 5-day (average weekday) count from April 2012. The historic counts provided indicate that traffic growth on High Street was less than 3% between 2012 and 2017, being equivalent to 0.5% per annum. The daily traffic volumes for Boulcott Street and Military Road were estimated from the intersection turning counts which are reported on in the TAR.

Section 3.2 describes intersection turning counts undertaken during the weekday PM peak and the weekday site peak at the intersections of each of Boulcott Street and Military Road with High Street. The dates for these surveys has not been included. The observed traffic flows on Military Road and Boulcott Street are similar to each other during both the survey periods. During the PM peak the north/ south split to and from High Street over both intersections is 56% to and from the

north and 44% to and from the south. This changes to 42% to and from the north and 58% to and from the south during the site peak.

No intersection counts have been included for either the weekday AM peak or the Saturday midday peak. It is generally understood that traffic flows to and from retirement villages are light during the weekday morning peaks with very little visitor or resident trip activity. Without being provided with the Saturday traffic profiles for High Street and the proposed retirement village it is not possible to assess whether the Saturday midday period is critical or not.

Section 8 of the TAR describes the road safety record for the intersections of each of Boulcott Street and Military Road with High Street. The report includes eleven crashes at the intersection of High Street and Boulcott Street and notes that the majority of these were associated with the nearby zebra crossing. The report includes seven crashes at the Military Road intersection with High Street and notes that very few included turning conflicts. Information provided in the further information response shows that there were no reported crashes on Military Road or Boulcott Street away from their intersections with High Street during the five year period 2013-2017 inclusive.

## **5. COMPLIANCE WITH DISTRICT PLAN TRANSPORT PROVISIONS**

Table 3 in Section 5 of the TAR summarises the level of compliance with the District Plan provisions. The summary provided is considered reasonable with the exception of:

- (i) no comment provided with regard to the degree of compliance for the internal road. Compliance with the trafficable width provisions of NZS4404:2010 is demonstrated in Section 9 of the TAR;
- (ii) compliance with site access design in Section 3 of AS/NZS2890.1:2004 not fully demonstrated, in particular with regard to the Military Road entry;
- (iii) partial compliance with parking space layout requirements of AS/NZS 2890.1:2004 with reliance placed on small car (50<sup>th</sup> percentile) use of a number of residents parking spaces including the garages. Ramp access to the basement resident parking is designed to accommodate 85<sup>th</sup> percentile rather than 99 percentile cars;
- (iv) no particular location indicated for staff bike storage; and
- (v) demonstrated provision for a medium rigid rather than a heavy rigid truck.

The only area of partial or non-compliance with the District Plan Transport Standards which could be expected to result in any adverse traffic effects beyond the site is associated with the pedestrian connections with the existing Military Road footpaths.

## **6. FORECAST TRAFFIC ACTIVITY**

Section 6.1 of the TAR forecasts daily traffic flows of 620 vehicle movements per day based on 85<sup>th</sup> percentile records included in the NZTA Research Report No.453 'Trips and Parking Related to Land Use'. This level of daily traffic generation is described as being similar to that associated with 60 residential dwellings. No comparison has been provided with other similar Summerset developments.

Section 6.2 sets out forecast traffic activity during the anticipated weekday site peak between 10.30am and 11.30am and the PM peak and compares these with traffic activity associated with the standard residential development of the site. The retirement village is forecast to generate 65 vehicle movements per hour during the PM peak compared with 72 vehicle movements per hour associated with 60 standard dwellings. During the site peak, the retirement village is forecast to generate 125 vehicle movements per hour during the PM peak compared with 30 vehicle movements per hour associated with 60 standard dwellings. No comparison is included with

existing Summerset data and no basis is provided regarding the assumptions for forecast daily and hourly residential trip rates. No forecasts are provided for additional traffic activity at school drop-off and pick-up times.

The residential trip generation rates of 10 vehicle movements per day per household and 1.2 vehicle movements per household in the peak hours are considered to be at the upper end of the ranges for both rates. In practice these rates could be closer to 8 vehicle movements per day per household and 0.8 vehicle movements per household in the peak hours. The 2013 Census Data for journeys to work shows Boulcott having lower than average drove to work numbers compared to the average for Lower Hutt and higher than average train travel, walk or jog to work and worked at home.

Appendix 18 of the application drawings includes an example subdivision layout with 54 residential lots. Using the range of household trip generation rates included above a 54 house subdivision could be expected to generate 432 to 540 vehicle movements per day with 43 to 65 vehicle movements during the busiest hours.

Table 6 (copied below) in Section 6.3 sets out the forecast trip distribution. Based on the proximity of the accommodation and parking options to each access it has been assumed that one quarter of trips will go to and from Military Road and three quarters to and from Boulcott Street. The same distribution has been assumed for the site peak and the PM peak periods.

| Access          | PM Peak Hour | Site Peak Hour |
|-----------------|--------------|----------------|
| Boulcott Street | 49vph        | 94vph          |
| Military Road   | 16vph        | 31vph          |
| Total           | 65vph        | 125vph         |

**Section 6.3 Table 6: Peak Hour Trip Distributions**

Given that the surveyed intersection data showed different turning patterns during the site peak hour and the PM peak hour it is considered likely that this might also apply to the new traffic. An alternative distribution scenario is also considered possible where given the ease with which vehicles will be able to move through the site that the driveway selection might depend more on whether the driver is heading to or from the north or south on High Street than on the proximity of parking to a particular driveway. Based on the reported observed turning patterns for the High Street intersections a more even split between the two driveways might reasonably be expected. This would result in more traffic on Military Road than forecast and less on Boulcott Street.

## 7. TRAFFIC EFFECTS

Section 7 of the of the TAR discusses the forecast traffic effects on the High Street intersections. The industry-recognised SIDRA software has been used to assess the effects of the additional traffic on the High Street intersections with each of Boulcott Street and Military Road. The modelling has been undertaken for the existing intersection layouts and control, during the weekday PM peak and site peak periods, for the existing, with Summerset and with standard residential development scenarios.

The assumed turning volumes for each of the scenarios have not been provided. The existing turning patterns during the PM peak can be expected to include some residential traffic which will be dominated by vehicle movements turning into each of Boulcott Street and Military Road and some golf club traffic and commuter traffic with staff from the hospital and other nearby commercial activities departing from kerbside spaces and turning out onto High Street. The standard residential scenario would be expected to have a dominance of trips turning from High

Street into the side streets. The retirement village scenario could be expected to have a mix of staff departures and visitor and resident departures and arrivals.

The results have been reported in terms of level of service (LOS) and average delay (seconds/vehicle) in the TAR and with forecast queues included in the further information response. The results of the intersection modelling are shown in Tables 7 and 8 of the TAR. The further information response includes expanded tables which include queuing information. It is understood that the models of the existing performance of the intersections were calibrated using queuing data. It is unclear whether the reported queuing information is 95<sup>th</sup> percentile or maximum queues.

The results show the turns from High Street performing at a level of service of C or better for all scenarios with queues of no more than one vehicle at either intersection for any of the scenarios. The main impact of the additional traffic is forecast to be at the Boulcott Street intersection with High Street with average delays for traffic turning from Boulcott Street forecast to increase from 46 seconds to 90 seconds in the PM peak and from 28 seconds to 44 seconds during the site peak. The associated forecast level of queuing is relatively low with up to four vehicles on the Boulcott Street approach to High Street in the PM peak with the retirement village. However the forecast levels of delay can be expected to result in risk taking with drivers moving into smaller gaps in the traffic than is desirable or choosing alternative routes through the local road network, neither of which are desirable outcomes.

While the traffic assessment considers that the traffic effects at the High Street intersections during the critical PM peak are similar for both the standard residential and retirement village scenarios, without understanding the detail of the vehicle turning patterns for these scenarios the validity of this conclusion is uncertain.

Section 7.3 of the TAR includes an assessment of staged traffic loadings and recommends that traffic signals are installed at the intersection of Boulcott Street and High Street prior to the second stage of the village being occupied. For the reasons set out below it is considered that the signalisation of the intersection should occur prior to the opening of the first stage of the retirement village:

- (i) modelled existing levels of service of E for each of the side roads;
- (ii) the observed delays reported in Section 7.1 of the TAR;
- (iii) the uncertainty around the split in usage of the two side road approaches;
- (iv) the existing safety concerns with regard to the pedestrian crossing across High Street at the Boulcott Street intersection; and
- (v) that as construction progresses there will be construction trade and staff traffic as well as traffic associated with any completed stages of the development.

It is agreed that beyond the signalising of the Boulcott Street intersection it is unlikely that there would be any need to make improvements to the Military Road intersection as turning traffic will benefit from gaps created by the platooning of traffic by the signals.

In Section 8 of the TAR, the introduction of signals at the Boulcott Street intersection with High Street is considered likely to result in safety benefits for both drivers and pedestrians. This is a reasonable assumption given the number of crashes involving the existing zebra crossing.

Section 10.1 of the TAR describes how the proposed on-site parking provision exceeds both the level anticipated at the time of Plan Change 35 and that of the current District Plan provisions. As such the parking demands are expected to be fully accommodated within the site. Some management of staff parking may be needed at shift changes when there is effectively a temporary doubling up of some staff activities.

Section 11 of the TAR includes a suggested scope for a Servicing Management Plan to safe access to and use of the on-site servicing areas. In particular the scope includes that servicing activities should be scheduled to occur outside the times of school drop-off and pick-up. While Appendix A in the further information response demonstrates a good level of pedestrian connectivity within the site, the options for moving through the site in the vicinity of the loading area are restricted to walking within the roadway or walking through the building.

Section 12 of the TAR includes a suggested scope for a Construction Traffic Management Plan. The response to the further information request confirms construction traffic activity will be managed such that no construction workers park on the streets and heavy vehicle loading and unloading will take place within the site.

The TAR does not include an assessment of the traffic effects along the lengths of both Military Road and Boulcott Street, in particular on Boulcott Street at the times of school drop-off and pick-up and on the single lane sections of Military Road.

Traffic flows associated with a 54 lot residential subdivision with three quarters of the traffic accessing Boulcott Street and on the basis of up to 1.2 vehicle movement per household during the peak hours could result in 49 vehicle movements per hour during peak hours. With inter-peak residential trip generation rates of approximately half the peak rates, during the period of school pick up 2.45pm to 3.15pm, some 12 vehicles might be expected to move through the northern end of Boulcott Street in the vicinity of the school. As part of this review a traffic count was undertaken at the Ryman retirement village in Waikanae. Between 2.30pm and 3.30pm, 96 vehicle movements were counted including one truck movement. While recognising that the composition of the two villages is different, 75% of the observed Ryman traffic activity within a half hour period would amount to 36 vehicle movements (potentially including a truck movement) compared to the 12 vehicle movements associated with standard residential development. As such there is a need to understand and manage the effect of traffic associated with the development on Boulcott Street and in particular during school pick-up times.

The only area of partial or non-compliance with the District Plan Transport Standards which could be expected to result in any adverse traffic effects beyond the site is associated with the pedestrian connections with the existing Military Road footpaths.

## **8. COMMENTS ON SUBMISSIONS**

The transportation related concerns arising from the submissions have been summarised into the following categories:

- (i) the proposal would lead to increased traffic and impact on normal traffic flows;
- (ii) the increase in vehicular and pedestrian traffic would impact on the safety of children attending nearby school and kindergarten;
- (iii) there should be alternative entrances to the retirement village;
- (iv) the proposal will increase traffic congestion in an already congested area;
- (v) the proposal will increase demand for on-street parking when parking demand is already high;
- (vi) the land between 32 and 36 Hathaway Avenue should not be used for access;
- (vii) the proposed turning circle and entryway at the end of Boulcott Street will affect the access to Boulcott School from the cycling and pedestrian path that runs along the stopbank from Ariki Street;
- (viii) traffic lights would not resolve the traffic concerns;
- (ix) late night shift changes of retirement village staff will mean that the adverse traffic effects continue into the evening;
- (x) a Service Management Plan is inadequate to address the servicing concerns;

- (xi) the proposal is not consistent with policy 4A 2.3.1(n) that requires the safe and efficient movement of all vehicles and pedestrian traffic;
- (xii) the increase in traffic and lack of parking would make it difficult for service vehicles to respond to emergency events in Boulcott;
- (xiii) the streets are too narrow for extra traffic flows; and
- (xiv) Boulcott Street should not be used as an access to the construction site.

Comment is provided below regarding each of these areas of concern.

### **8.1 Increased Traffic and Impact on Normal Traffic Flows/ Increase in Traffic Congestion in an already Congested Area**

With the site zoned for residential purposes and as indicated in Appendix 18 of the AEE with the potential to accommodate around 54 dwellings, an increase in traffic activity in the local street network is anticipated. The key matters for consideration are whether the proposed retirement village will generate more traffic than anticipated by the standard residential development of the site either in terms of daily or hourly traffic and whether there will be a different mix of vehicle types. If there are differences, it is then a matter of determining whether there are any additional adverse traffic effects beyond those anticipated with the standard residential development of the site.

In terms of daily traffic activity the standard residential development of the site would be expected to result on 432 to 540 vehicle movements per day. The retirement village is forecast to generate 620 vehicle movements per day. With regard to hourly traffic activity the retirement village is forecast to generate 65 vehicle movements per hour during the weekday PM peak and 125 vehicle movements per hour during the busiest hour of traffic activity on the site. The standard residential development of the site could be expected to generate 43 to 65 vehicle movements per hour during each of the AM and PM weekday peaks and 27 vehicle movements per hour during the middle of the day on a weekday. As such the retirement village is expected to generate a similar level of traffic activity to that associated with the standard residential development of the site during the weekday PM peak. During the middle of the day the retirement village will generate around twice the level of traffic activity compared with the standard residential development of the site. The scale and commercial nature of the retirement village could reasonably result in additional truck movements than would be anticipated with the purely residential development of the site.

With regard to the differences in traffic effects associated with the retirement village, the key consideration is the management of additional truck movements through the local road network and also the safe interaction between retirement village traffic and the school, in particular during the school drop-off and pick-up periods.

### **8.2 Increase in Vehicular and Pedestrian Traffic Impacting on the Safety of Children attending the nearby School and Kindergarten**

Given the potential for the retirement village to generate considerably more traffic activity during the school pick-up period than if the site were developed for standard residential purposes, particular management and control of traffic activity at the retirement village at this time is considered appropriate. A visit to Boulcott Street during the school pick-up period confirmed that for at least half an hour traffic and parking activity is very busy with competition for parking spaces resulting in some vehicles being double parked and others parked on yellow lines including in the turnaround area.

### **8.3 Alternative Entrances to the Retirement Village**

It is understood that the only points for legal access to the public road network are to the northern ends of each of Boulcott Street and Military Road and to Hathaway Avenue. Vehicle connection to Hathaway Avenue would undesirably result in vehicles travelling through a greater length of the local residential street network and would not result in any safety or efficiency benefits compared to the use of the Boulcott Street and Military Road access points.

### **8.4 Increase in Demand for On-street Parking when Parking Demand is already High**

The level of on-site parking provision meets the District Plan parking requirements and is anticipated to be able to accommodate all the parking demands associated with the Village within the site. As well as meeting the District Plan requirements the level of provision is well matched to industry recognised parking rates. The layout of the site is such that staff and visitors will find it more convenient to park on-site than along sections of kerbside within the public road network.

During construction, given the size of the site and the availability of the old golf club carpark for parking, the Construction Traffic Management Plan can be expected to require all staff and trade vehicles to park within the site. The Applicant has indicated that this will be the case.

### **8.5 Land Between 32 and 36 Hathaway Avenue should not be used for Access**

The Applicant has indicated that this strip of land will not be used for either pedestrian or vehicle access to the site.

### **8.6 Proposed Turning Circle and Entryway at the End of Boulcott Street will affect the Access to Boulcott School from the Stopbank Path from Ariki Street**

At the moment and as shown in Photo 1 below, the stopbank path connects into the turnaround area but there is no connecting footpath to the footpaths along each side of Boulcott Street.



**Photo 1: Existing Connection to Stopbank Path at the End of Boulcott Street**

The design of the turnaround included in Appendix B of the further information response includes a footpath around the turning head with connections provided to the existing footpaths on both sides of Boulcott Street. It is understood that the turnaround area will be level and good lines of sight are available to and from pedestrians and cyclists. Vehicle speeds can be expected to be low given the slow speed environments that are encouraged within retirement villages. With low traffic movements on the retirement village driveway during school drop-off and some control of vehicle activity on the retirement village driveway during the school pick-up period, pedestrians and cyclists can be expected to safely interact with vehicles entering and exiting the retirement village driveway.

### **8.7 Traffic Lights would not resolve the Traffic Concerns**

There are a number of submitters who raise concerns with regard to the proposed traffic lights at the intersection of Boulcott Street with High Street. The concerns include that the traffic lights could increase the traffic congestion, in a similar way to when the traffic lights were introduced on the Kmart driveway on Hutt Road in Petone. There are also concerns that the installation of traffic lights will not resolve traffic issues within the local road network.

It is agreed that the traffic lights will only control traffic movements to and from High Street and Boulcott Street and do not address matters such as the interaction between school traffic and traffic associated with the retirement village. No modelling of the traffic signals has been included in the application. The benefits will be reduced delay for turning traffic, improved safety for pedestrians who will cross High Street at a signalised crossing rather than the existing zebra crossing and for through vehicles the signals will better control pedestrian movement across High Street. These benefits are balanced against increased delay for through traffic on High Street which previously would have been delayed by pedestrians crossing but not by turning vehicles. Any traffic signals in this location can be expected to operate much more efficiently than at the Kmart driveway given that the traffic volumes on Boulcott Street are much less than the 400 vehicle movements per hour on the Kmart driveway at the busiest times of traffic activity and the intersection is in the form of a tee rather than crossroads which simplifies the signal phasing.

### **8.8 Late Night Shift Changes of Retirement Village Staff will mean that the Adverse Traffic Effects continue into the Evening**

Some level of traffic activity extending into the late evening would be expected with the standard residential development of the site. At these times the school and kindergarten are closed and both the kerbside parking and local background traffic activity is less than during the daytime. Vehicle movements associated with night-time shift changes at the retirement village can be expected to be readily and safely accommodated within the local road network.

### **8.9 Service Management Plan is inadequate to address the Servicing Concerns**

In Section 11 of the TAR, the Applicant suggests that a Servicing Management Plan is provided to address the following matters:

- (i) ensure the on-site loading area is available for servicing purposes at all times;
- (ii) ensure that all vehicles enter and exit the loading area in a forward direction;
- (iii) ensure the types of vehicles that are required to visit the site for servicing and delivery purposes are able to be accommodated in the loading area. As an indicator, trucks should be no larger than 8m in length;
- (iv) ensure the frequency and duration of servicing is scheduled to occur outside school drop-off and pick-up times; and
- (v) ensure incoming/ outgoing goods and materials are kept in the loading area for a minimal time.

As part of this review a survey of vehicle activity at the Ryman retirement village in Waikanae was undertaken on a weekday between 2pm and 5.30pm. During the survey three truck movements were counted at the entry. As such the forecast of two truck visits or four truck movements per day at the proposed village may be slightly on the low side and there will be a need to manage truck movements at school drop-off and pick-up times.

### **8.10 Proposal is not consistent with Policy 4A 2.3.1(n) that requires the Safe and Efficient Movement of all Vehicles and Pedestrian Traffic**

An assessment of the transportation components of the proposal against the assessment matters included in Rule 4A 2.3.1(n) is included towards the end of this report.

### **8.11 Emergency Vehicle Access to Boulcott Area**

With the parking associated with both the construction and the operation of the retirement village contained on-site, there is not expected to be any additional parking obstructions to emergency access. As shown in Table 2 of the further information response even with all the kerbside parking occupied there is a trafficable width of at least 4m on both Boulcott Street and Military Road. This width can accommodate the largest firefighting appliances. While the retirement village would result in additional traffic flows on the local roads, there are opportunities for vehicles to move into driveways or side streets to make way for emergency vehicles as needed.

### **8.12 Streets are too Narrow for extra Traffic Flows**

It is recognised that kerbside parking along a number of the local side streets, off both Boulcott Street and Military Road, reduces the trafficable width to single lane two-way traffic flow with drivers needing to use gaps created by driveways to pass. The proposed retirement village will result in additional traffic flows on both Boulcott Street and Military Road but any changes in traffic activity on the side streets is expected to be negligible. This is considered a reasonable assumption for the following reasons:

- (i) with all parking demands provided for on-site there is no need for construction workers, residents, visitors or staff to be accessing kerbside parking on the local road network;
- (ii) the layout of the local road network encourages access from High Street;
- (iii) the narrow trafficable width of the local side streets results in slow travel speeds and reduces the efficiency of rat-running through the local residential streets; and
- (iv) given that there is two-way unobstructed traffic flow through the retirement village, albeit at slow speeds it is considered likely that residents, staff and visitors will choose their access point to and from the local road network depending on whether they are travelling to or from the south (Boulcott Street) or the north (Military Road) rather than using the local street network to move between the two streets.

Boulcott Street provides for two-way traffic flow along its full length even with the kerbside parking occupied. No assessment of the traffic carrying capacity of either Boulcott Street or Military Road has been included in the application. Table 3.2 in NZS4404:2010 indicates that kerbside parking within the trafficable width is acceptable when up to 100 dwellings are served (or around 1,000 vehicle movements per day). The traffic count included in Table 1 of the TAR indicates that the average daily traffic volumes on Military Road close to High Street are around 900 vehicle movements per day. Accordingly, the traffic activity associated with the retirement village can be expected to use up any spare traffic capacity on Military Road, in particular on the busiest section closest to High Street. However this would also be the case with the standard residential development of the site which would additionally have the potential to add more traffic than the retirement village scenario during the local weekday morning and afternoon traffic peaks.

While the removal of kerbside parking spaces could result in increased traffic carrying capacity, there is a statutory process to be followed and the outcome is not assured and cannot be relied on for resource consent purposes.

### 8.13 Boulcott Street should not be used as an Access to the Construction Site

In Section 2.4 of the AEE, the Applicant states that construction vehicle access will be maximised via Harcourt Werry Drive with an agreement in place with the golf club. In Section 12 of the TAR, the following statement is made:

*By way of a separate agreement reached with Boulcott's farm Heritage Golf Club, all trucks will access to and from the site via the golf course, throughout all construction stages, in much the same way as occurred with the Regional Council's river stopbank works. No trucks will use the local Boulcott road network for construction access.*

*Other trades vehicles and staff vehicles will access the site as follows:*

- *via Boulcott Street for Stage 1; and*
- *via Military Road for Stages 2, 3 and 4. This will allow residents of the completed Stage 1 of the village to use the Boulcott Street access independent of and separate from construction traffic.*

On this basis it is understood that no trucks will access the construction site via either Military Road or Boulcott Road. Tradesmen and staff using cars, vans and utes are expected to access the site via Boulcott Street during Stage 1 and via Military Road during Stages 2, 3 and 4.

Given the length of the construction period, the reduced traffic carrying capacity of Military Road compared with Boulcott Street, that staff and trades vehicles will typically be travelling in the opposite direction to the local residential traffic patterns and peak travel activity will coincide with the local traffic peaks it is preferable for Boulcott Street to be used for access to the construction site. Traffic flows during school drop-off and pick-up would need to be controlled, possibly with access via Military Road during those brief periods.

## 9. RECOMMENDATIONS

Based on the above review it is recommended that if consent is granted that conditions are attached to the consent to ensure the following:

- (i) the detailed design of the Military Road entry includes provision for pedestrians to access the footpaths on both sides of Military Road;
- (ii) potential residents are aware of any vehicle size restrictions that apply to the residential garages and parking spaces;
- (iii) that the internal lengths of garages are not further reduced by laundry facilities, shelving or storage;
- (iv) signalisation of the Boulcott Street intersection with High Street prior to the opening of the first stage of the retirement village;
- (v) inclusion of a pedestrian path either along the opposite side of the internal road or parallel to the internal road in the vicinity of the loading area;
- (vi) minimise traffic activity on Boulcott Street at school drop-off and pick-up times through methods such as restricting the time of staff shift times and/or staff travel plans;
- (vii) no delivery or servicing activity resulting in vehicle movement on Boulcott Street at school drop-off and pick-up times;
- (viii) the Construction Traffic Management Plan to require all construction staff vehicles and trade vehicles to be parked within the site during all stages of construction;
- (ix) the Construction Traffic Management Plan to require all truck access via Harcourt Werry Drive during all stages of construction;
- (x) the Construction Traffic Management Plan to require all construction staff/trade access via Boulcott Street apart from during the times of school drop-off and pick-up unless the Harcourt Werry Drive access can be used; and
- (xi) requirement to provide a Servicing Management Plan as offered in the application.

In the Applicants response to the submissions and this report it would be useful to gain further clarity with regard to:

- (i) forecast traffic flows associated with the retirement village on Boulcott Street at school drop-off and pick-up times;
- (ii) ability for the single lane two-way sections of Military Road to accommodate the additional traffic flows, including if up to 50% of the retirement village traffic used this route;
- (iii) given that a number of different statements have been made regarding vehicle access from Harcourt Werry Drive during construction, confirmation is sort regarding which vehicles will use this route and an explanation is sought with regard to whether all construction vehicles including staff and trades vehicles could use this access;
- (iv) sensitivity testing of the High Street intersections with a more even distribution of trips on each route;
- (v) modelled performance of the proposed traffic lights at the intersection of High Street and Boulcott Street; and
- (vi) Parking Management Plan (PMP) to be provided as part of the application. The scope of the PMP should include:
  - a. confirmation that staff parking can be accommodated within the site at times of shift changes when for a short while there is a doubling up of staff on-site;
  - b. allocation of staff and visitor parking; and
  - c. reference to staff and visitor parking demands at similar retirement villages.

## 10. SUMMARY AND CONCLUSION

With regard to compliance with the District Plan Standards included in 14A Transport Appendix Transport 1, the proposal has demonstrated a level of compliance where the only area of partial or non-compliance that could be expected to result in any adverse traffic effects beyond the site is associated with the pedestrian connections with the existing Military Road footpaths. It has been recommended that a condition is put in place to ensure pedestrian connectivity with the footpaths on both sides of Military Road.

Review against the provisions of Rule 4A 2.3.1(n) follows:

### **(i) Traffic Effects**

*The safe and efficient movement of all vehicle and pedestrian traffic needs to be ensured. It should be demonstrated that traffic generation and vehicles entering and leaving the site will not adversely affect normal traffic flows on the road, or cause a vehicle or pedestrian hazard. Provision should also be made for pedestrians.*

The review of the application has identified that some management and control of traffic activity associated with the proposed retirement village is needed to ensure the safe and efficient movement of vehicles and pedestrians. Matters to be conditioned have been identified with points (i), (iv), (vi), (vii) and (xi) in Section 9 of this report being of most relevance. The key area of concern is with regard to traffic effects in the vicinity of the school during drop-off and pick-up.

### **(ii) Parking Effects**

*The extent to which the proposal appropriately provides for the vehicle parking needs of the activity, without adversely affecting the vehicle parking requirements of the surrounding neighbourhood, as demonstrated through the provision of a parking management plan.*

The application demonstrated compliance with the parking provision requirements included in the District Plan. A number of the resident parking spaces do not meet the District Plan design and layout requirements and care will need to be taken to ensure that all spaces can be used as intended to avoid the risk of any overspill parking. Confirmation is also sought that staff parking can be fully accommodated at the time of shift changes when handover procedures will result in a

temporary doubling up of some staff roles. Matters to be conditioned have been identified with points (ii) and (iii) in Section 9 of this report being of most relevance.

**(iii) Construction Effects**

*Consideration shall be given to potential construction noise, traffic, dust, sediment runoff and vibration effects on the immediate residential area, including Boulcott School and Kindergarten. This consideration shall include:*

- c) The provision of a construction traffic management plan;*

While it is agreed that it is not practical for the Construction Traffic Management Plan to be provided at this stage of the planning process, points (viii), (ix) and (x) in Section 9 of this report are recommended for including in conditions with regard to the scope of the Construction Traffic Management Plan.

Harriet Fraser

21 September 2018