

## Report on a Publicly Notified Resource Consent Application

(Section 42A)

<b>Application Reference:</b>	RMA/2018/2029
<b>Applicant:</b>	Foodstuffs South Island Limited
<b>Site address:</b>	171 & 165 Main North Road; 7, 7A, & 7B Northcote Road
<b>Legal Description:</b>	Lot 1 DP 21207, Lot 1 DP 479583, Lot 1 DP 1440, Lot 7 DP 14400, Lot 9 DP 14400, Lot 2 DP 479583, Lot 1 DP 76152
<b>Proposal:</b>	Establish and operate a supermarket with associated self-service petrol station, ancillary offices, emergency coordination facility, car parking, roading realignment (addition of a signalised intersection along Main North Road), signage, earthworks, and modifications to the Lydia Street Drain (a network waterway)
<b>Zoning:</b>	Industrial General, Commercial Local, and Residential Suburban
<b>Overlays and map notations:</b>	Christchurch International Airport Protection Surfaces overlay Liquefaction Management Area Water Body Setback (Network Waterway) Flood Management Area Major Arterial Road (Northcote Road) Minor Arterial Road (Main North Road)
<b>Activity status:</b>	Discretionary (District Plan) Discretionary (NES)
<b>Submissions:</b>	Eleven in support (four of these submitters seek to be heard) Six in opposition (four of these submitters seek to be heard) Three neutral to the proposal (two of these submitters seek to be heard) A summary of submitters is included as <b>Appendix A</b>
<b>Date of Hearing:</b>	3 <sup>rd</sup> – 5 <sup>th</sup> December 2019
<b>Recommendation:</b>	Decline

### Preamble

1. My name is Nathan Harris. I am employed as a Planner, by the Christchurch City Council. I have been employed by the Christchurch City Council since September 2017. I hold a Master of Planning degree, Master of Science degree, and a Bachelor of Arts degree with honours. I am an intermediate member of the New Zealand Planning Institute and have three years of experience working in the planning and resource management field.

2. This report has been prepared with advice from the experts detailed below. Copies of their reports have been attached in the appendices.

<b>Officer</b>	<b>Position</b>	<b>Appendix</b>
Tim Heath	Managing Director, Property Economics	B
Mark Gregory	Transport Network Planner, Christchurch City Council	C
David Hattam	Senior Urban Designer, Christchurch City Council	D
Jennifer Dray	Senior Landscape Architect, Christchurch City Council	E
Isobel Stout	Senior Environmental Health Officer, Christchurch City Council	F
Sheryl Keenan	Planning Engineer, Christchurch City Council	G
Victor Mthamo	Planning Engineer, Christchurch City Council	H
Emily Tredinnick	Surface Water and Land Drainage Planner, Christchurch City Council	I
Greg Burrell	Waterways Ecologist, Christchurch City Councils	I
Bill Dray	Civil Engineer (Building Control), Christchurch City Council	J
John Thornton	Arborist Environmental Consents, Christchurch City Council	K

3. In addition to the above, a series of conferencing sessions were undertaken following closing of the submission period. This included four conferencing sessions between transport experts relating to modelling (with representatives from the Applicant, Council, the New Zealand Transport Agency (NZTA), and the Christchurch Transport Operations Centre (CTOC)), one between transport experts focussing on more general transportation matters (with representatives from the Applicant, Council, NZTA, CTOC, and Environment Canterbury (ECan)), one relating to policy matters specifically (with representatives from the Applicant, Council, and ECan), and one covering urban design and landscaping (with representatives from the Applicant and Council). A series of Joint Witness Statements have been compiled by the relevant experts:

- Transport Joint Witness Statements – Appendix L.
- Planning Policy Joint Witness Statement – Appendix M.
- Urban Design Joint Witness Statement – Appendix N.
- Landscaping Joint Witness Statement – Appendix O.

4. This report reviews the application for resource consent and addresses the relevant information and issues raised. It should be emphasised that any conclusions reached or recommendations made in this report are not binding on the Commissioner. It should not be assumed that the Commissioner will reach the same conclusion or decision having considered all the evidence to be brought before him by the Applicant and submitters.
5. It is the Council's current practice to appoint a Hearings Panel or Commissioner to determine applications that may be potentially controversial.

## Proposed activity

6. Foodstuffs South Island Limited has applied for resource consent to establish and operate a supermarket with ancillary offices, self-service petrol station, emergency coordination facility, car parking, roading realignment (addition of a signalised intersection along Main North Road), signage, earthworks, and modifications to the Lydia Street Drain (a network waterway) at 171 and 165 Main North Road, 7, 7A, and 7B Northcote Road
7. The proposal is outlined in detail in Section 4 of the AEE submitted with the application. The main features of the proposal include:
  - The development of a Pak'nSave supermarket at 171 Main North Road. Hours of operation will be restricted to between 0700 and 2300 hours, seven days per week. The Applicant has stated that delivery of goods would be consolidated to minimise heavy vehicle usage, and to restrict delivery and servicing to ensure they are not occurring during the customer traffic or network peak. All heavy vehicle deliveries would occur outside the hours of 3pm and 6pm.
  - The ground floor of the building will meet the minimum finished floor level for this site (19.50m proposed where 19.49m is required), being within a flood management area. The basement car park will not meet the minimum floor level required (finished floor level of 16.20m proposed).
  - Development of a self-serve petrol station at 171 Main North Road. This will comprise eight pumps, with the hours of operation restricted to the same as the Pak'nSave supermarket (between 0700 and 2300 hours, seven days per week). Fuel tanker deliveries would occur outside of the proposed supermarket operation hours.
  - Addition of a signalised vehicle intersection on Main North Road between the intersection with Cranford Road and Northcote Road, requiring realignment of the road and removal of three street trees (two of which are less than 6m in height).
  - Piping of the Lydia Street Drain, a network waterway in the Christchurch District Plan. The waterway will be piped for a length of 225m.
  - On-site stormwater treatment of hardstand areas through proposed bioretention and infiltration devices (swales, rain garden, Filterra®).
  - The provision of 278 car parking spaces at 171 Main North Road, including eight mobility parks. Car parking spaces will be divided between parking at grade, between the supermarket building and Main North Road, and basement parking.
  - Changes to the layout of the site to provide for internal vehicle movements, including access between 171 Main North Road and 7A / 7B Northcote Road and the widening of the formed right of way to Lydia Street to provide for truck movements.
  - Signage in association with the supermarket and fuel station. This will include signage on the supermarket building (104m<sup>2</sup>) and on the fuel canopy façades (9.48m<sup>2</sup>). Freestanding signage on the site will include the relocation of an existing pylon sign relating to the Foodstuffs Head Office at 165 Main North Road, and the addition of a free-standing pylon sign for the supermarket (10m in height, 20m<sup>2</sup>) and the fuel station (2.9m in height, 4.5m<sup>2</sup>).
  - Landscaping across 171 Main North Road and the right of way to Lydia Street.
  - Ability to use the site as an emergency coordination facility. This includes the supermarket and fuel facility, both of which will be constructed with the structural integrity of an IL4 building<sup>1</sup>, the provision of six 30,000L water tanks, access to potable well water, and the provision of a diesel generator.

<sup>1</sup> Clause A3 of the Building Code defines the significance of a building by its importance level (IL), which is related to the consequences of failure. Importance Level 4 is relevant to buildings that must be operational immediately after an earthquake or other disastrous event, such as emergency shelters, hospital operating theatres, and other critical post-disaster infrastructure.

- The Foodstuffs head office will not materially change from the existing lawfully established activity. Car parking access will be slightly altered, which will result in the relocation of six car parking spaces, and the movement of an existing pylon sign.
  - The existing retail and commercial activities at 7A and 7B Northcote road will not be materially altered, beyond some changes to access (including internal access to 171 Main North Road), provision of pedestrian paths and the relocation of two parking spaces.
  - Earthworks to enable construction of the proposed buildings, the provision of parking, piping of the Lydia Street Drain, etc. This includes earthworks within a flood management area and within a HAIL site.
8. The proposal will result in an area of approximately 16,625m<sup>2</sup> of land currently zoned Industrial General being used for a supermarket, petrol station, and associated parking / access and landscaping. It will not see material changes to the use of the existing Commercial Local zoned land or lawfully established Foodstuffs head office, beyond vehicle and pedestrian connections into / out of the site and within the site.

## Background

9. This application for resource consent was received on 21<sup>st</sup> August 2018. A Request for Information was issued on 10<sup>th</sup> September 2018, at which time it was placed on hold. The application was taken off hold on the 17<sup>th</sup> July 2019 following receipt of the Applicants Request for Information Response. It was publicly notified on 20<sup>th</sup> July 2019. The submission period closed on 19<sup>th</sup> August 2019. A total of 21 submissions were received during this period – eleven in support, seven in opposition and three which were neutral to the proposal. Subsequently, one submitter in opposition to withdrew their submission following meeting with the Applicant (Redwood Family Dentists). Refer to **Appendix A** for a summary of submissions and locations of submitters in the immediate area.

## Description of the site and existing environment

10. The application site is located at 171 & 165 Main North Road; 7, 7A, & 7B Northcote Road, as shown in **Figure 1** below.



**Figure 1.** Site plan showing layout of proposed activities.

11. The application site and surrounding environment are described in section 3 of the AEE submitted with the application. I generally agree with the Applicant's description, however, note the following:
- **Rezoning request to the Independent Hearings Panel:** As part of the District Plan Review Foodstuffs lodged an application to rezone the land at 171 Main North Road from Industrial General (as proposed in the Notified Version) to Commercial Core Zone. Ostensibly, this sought establishment of a Neighbourhood Centre, with the Applicant stating they envisaged constructing a supermarket on the site. The Independent Hearings Panel determined to retain the Industrial General zoning of the site, in part due to uncertainty around the timing of construction of the Northern Arterial Road (being part of the Christchurch Northern Corridor) and attendant effects on traffic volumes along Main North Road. It was determined that construction of a supermarket on the site would be inappropriate, at least until such time that the Northern Arterial Road was opened. The Panel was also of the opinion that the proposal would not fulfil the function of a Neighbourhood Centre, which is more than just a retail destination. The Panel held this position when neighbouring activities were taken into account.
  - **Roading network:** Adjacent to the application site Main North Road is classified as a Minor Arterial Road within the Christchurch District Plan. Northcote Road is a Major Arterial Road, with Main North Road north of the Main North Road / Northcote Road / Queen Elizabeth II (QEII) intersection and QEII being major arterial roads / State Highways. The roading network in this area is described within the Integrated Transport Assessment provided by Abley Limited.
  - **The Christchurch Northern Corridor:** The Christchurch Northern Corridor will open in mid-2020. This will see a change in the type of traffic associated with the roading network surrounding the application site as the majority of long journeys to and from the City will be made via the Northern Corridor. At present, the highest traffic movements are made north-south / south-north as Main North Road is one of the main roads to / from the City north. However, following the opening of the Northern Corridor a number of these journeys will be made on that road, reducing numbers along Main North Road. At the same time, traffic moving east-west / west-east is anticipated to increase as Northcote Road and QEII becomes one of the key linkages to the Northern Corridor. It is anticipated that such movements will be more closely associated with longer travel journeys, with the north-south / south-north along Main North Road being more local and access based movements. This change is reflected to a degree in the District Plan, with Northcote Road and QEII being major arterial roads, and Main North south of the Main North Road / Northcote / QEII intersection a minor arterial. I do, however, note that north of that intersection Main North is a major arterial in the District Plan roading hierarchy and remains a state highway under control of the NZTA.
  - **Northcote Road route improvements:** Northcote Road will be subject to route improvements. These have been included in the 'Long Term Plan 2018 to 2028', currently scheduled for 2025-2026, and for which designations have been included within the District Plan. It is not clear what format the route upgrades would take, with an early proposal being four laning of Northcote Road. Regardless of the final design, I understand that it is likely that the upgrading works will remove the ability for vehicles travelling east along Northcote Road to turn right into Lydia Street to enter the application site. It will also remove the ability for vehicles leaving Lydia Street to turn right onto Northcote Road.
  - **2 Lydia Street:** Resource consent was granted on 11 November 2015 for redevelopment of 2 Lydia Street, to the east of the application site (RMA92029705). This consent provides for a range of activities, including an indoor entertainment and recreation centre, gymnasium, pre-school, and food and beverage outlets. The consent has not been implemented, and will expire on 11 November 2020. Since granting of the consent the site was purchased by the Roman Catholic Bishop of the Diocese of Christchurch, and they have publicly announced their intentions to relocate Marion College to 2 Lydia Street. It is understood that the Diocese will not take over

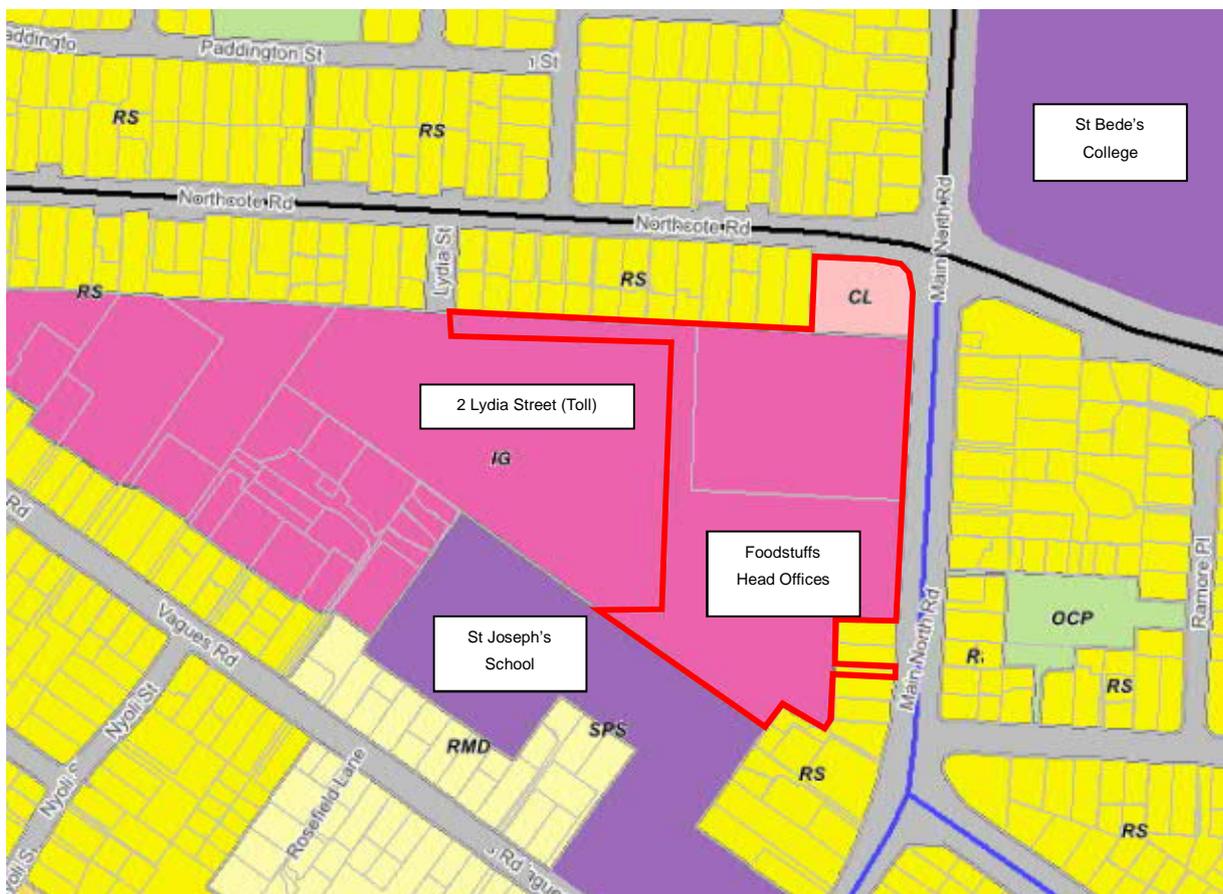
possession of the land until 2021, when the current lease for Toll Logistics expires. The Applicant contends that the unimplemented consent does not form part of the existing environment, as it is unlikely to be implemented. On the balance of facts, I agree with this assessment. I also agree that the future school should not be considered to form part of the environment, as this will be subject to obtaining the necessary planning approvals / designations and at this stage is too speculative.

- Lydia Street Drain:** The proposal seeks the piping of part of the Lydia Street Drain, which runs the length of the application site from west to east. The Lydia Street Drain is a network waterway within the Christchurch District Plan. It is piped upstream of the application site where it runs under Lydia Street. From the far side of Lydia Street it is open for a length of approximately 354m until it is piped and connected to the Northcote Railway Drain. Downstream of the application site the Lydia Street Drain is piped before connecting to Kruses Drain, which runs under Main North Road and QEII Drive before becoming open where it runs through St Bede's College. Kruses Drain drains into the Styx River system.

**District Plan and National Environmental Standards – Relevant rules and activity status**

**Christchurch District Plan**

- The site is primarily zoned Industrial General. A part of the site, located in the northeast corner of the block, is zoned Commercial Local, and an access lot from / to Main North Road is zoned Residential Suburban. Figure 2 shows the zoning of the site. I note that activities within the Commercial Local zoning will largely remain as existing, with limited changes to the provision of car parking and access (both to the road network and within the site).



**Figure 2.** District Plan zoning of site and surrounds.

13. The objectives and policies for the industrial General zone generally seek industrial and other compatible activities that can operate in close proximity to more sensitive zones due to the nature and limited effects of the activities (including noise, odour, and traffic). Limited non-industrial activities are provided for where they meet a number of criteria, including requirements that the activity does not have the potential to hinder or constrain industrial activities or strategic infrastructure and will not undermine the strategic role of commercial centres. Key objectives and policies are discussed in detail in a later section of this report.

14. The proposal requires resource consent under the following rules in the District Plan:

Activity status rule	Standard not met	Reason
5.4.1.5 RD1 Flood management	5.4.1.1 P3 New buildings in a flood management area	The proposed basement car parking does not meet the required finished floor level (19.49m required, 16.20m proposed).
5.4.1.5 RD2 Flood management	5.4.1.1 P14 Earthworks within a flood management area	The proposed earthworks will exceed a depth of 0.6m (4m proposed) and a cumulative volume of filling and excavation of 50m <sup>3</sup> (approx. 28,000m <sup>3</sup> proposed). The proposal also includes earthworks for the installation of underground petroleum storage systems.
6.4.5.1.3 RD1 Noise	6.1.5.1.1 Noise	The proposal will breach noise standards by no more than 10dB at the boundary with adjoining residential units. The acoustic report has noted non-compliance at the following addresses (being representations of the locations of non-compliance): <ul style="list-style-type: none"> <li>- 8 Northcote Road (day time – peak hour only (1700-1800hrs)).</li> <li>- 9A Northcote Road, 27A Northcote Road, 186 Main North Road, and 202 Main North Road (day time and night time).</li> </ul>
6.6.4.3 RD1 Earthworks within a waterbody setback	N/A	The proposal will require earthworks within the waterbody setback from the Lydia Stream Drain to enable it to be partially piped.
6.6.4.3 RD2 Impervious surfacing within a waterbody setback	6.6.4.1 P5 Impervious surfaces	The proposal will see more than 10% of the water body setback covered with impervious surfacing. The Lydia Stream Drain will be piped and covered with impervious surfacing for a length of 225m.
6.8.4.1.3 RD1 Signage	6.8.4.2.4 Signs attached to buildings	The proposed on building signage exceeds maximum height requirements (10.8m proposed where 9m is permitted).
6.8.4.1.3 RD1 Signage	6.8.4.2.6 Free-standing signs	The proposed pylon sign exceeds maximum height requirements (10m proposed where 9m is permitted) and will have a maximum area of 19m <sup>2</sup> , where 18m <sup>2</sup> is permitted.

Activity status rule	Standard not met	Reason
6.8.4.1.3 RD2 Digital signage	N/A	The proposed petrol station sign includes a digital component that complies with the built form standards for signage.
7.4.2.3 RD1 Transport	7.4.3.1 Minimum number and dimensions of car parking spaces	The proposal will include staff parking that is not marked for exclusive use of staff.
7.4.2.3 RD1 Transport	7.4.3.7 Access design	Three of the vehicle accesses off Main North Road exceed the permitted width of 9m.
7.4.2.3 RD1 Transport	7.4.3.8 Vehicle crossings	The maximum permitted number of vehicle crossings on a site with more than 100m of frontage to a minor arterial road is two. Five vehicle crossings are proposed (NB: this is the same number as existing).
7.4.2.3 RD1 Transport	7.4.3.10 High trip generators	The proposal includes retail activities with a GLFA in excess of 500m <sup>2</sup> (the supermarket) and mixed use activities that will result in more than 50 vehicle trips during peak hour (the service station).
8.9.2.3 RD1 Earthworks	8.9.2.1 P1 Earthworks	The proposal will exceed the permitted earthwork volumes and depths (more than 1000m <sup>3</sup> of earthworks will occur on site associated with achieving the required external car park grades).  The greatest volume of earthworks is required for the proposed establishment of the supermarket basement. The Applicant has stated that these works will not occur until building consent has been granted, so are exempt by Rule 8.9.3(iv).
9.4.4.1.3 RD4 Felling of a street tree	9.4.4.1.1 P6 Felling of a street tree	The proposal will include removal of three street trees, one of which is greater than 6m in height.
9.4.4.1.3 RD8 Earthworks within the setback from a street tree	9.4.4.1.1P12 Earthworks within 5m of the base of a street tree	The proposal will include earthworks within 5m of a street tree and will not be undertaken by an arborist employed or contracted by Council or a network utility operator.
16.4.1.4 D1 Any activity not otherwise provided for in the Industrial General zone	N/A	Supermarkets are not otherwise provided for within Industrial General zones.

15. Overall the proposal must be considered as a **discretionary activity** under the District Plan.

## National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES)

16. These standards seek to ensure that land affected by contaminants in soil is appropriately identified and assessed before it is developed and if necessary the land is remediated or contaminants contained to make the land safe for human use.
17. The NES controls soil disturbance on land where an activity on the Hazardous Activities and Industries List (HAIL) is being carried out, has been carried out, or is more likely than not to have been carried out. The application site is identified as HAIL land; therefore the provisions of the NES apply.
18. The proposal requires consent under the NES as it breaches the following regulations:
  - **Regulation 8(3)(c)** - the volume of soil disturbance will exceed 25m<sup>3</sup> per 500m<sup>2</sup>.
  - **Regulation 8(3)(d)(ii)** - the volume of soil to be removed from the site will exceed 5m<sup>3</sup> per 500m<sup>2</sup>.
19. Pursuant to Regulations 10(4) and 11 the proposal is a discretionary activity under the NES as a Detailed Site Investigation (DSI) of the piece of land has not been carried out. A Preliminary Site Investigation (PSI) has been undertaken.

### Submissions

20. Twenty-one submissions were received on this application (eleven in support, seven in opposition, and three neutral). A list of submitters and their positions are included as **Appendix A**. Copies of all submissions have been provided to the Commissioner.
21. The Redwoods Family Dentists (submitter number 17 within **Appendix A**) originally submitted in opposition of the proposal with respect to how it would affect access to their site and the removal of on street parking. That submission has been withdrawn following meetings between the Applicant and submitter, and is shown as struck through within **Appendix A**.
22. The reasons for the submissions in support are summarised as follows:
  - There is a need for a supermarket in the area, and the proposal will be better than the existing supermarket at Northlands Mall (particularly with respect to parking and access).
  - Creation of an emergency response centre will be of benefit.
  - Will create jobs.
  - Represents a better, more efficient, and more compatible outcome than the industrial zoning.
  - Will be of benefit to Oil Changers Papanui (existing business) and the planned school at 2 Lydia Street.
  - Pedestrian linkages through the site and along the Lydia Street right of way will be safe, separated, and of high-quality.
  - Installation of a signalised intersection will enable pedestrians to cross Main North Road and access bus stops.
23. The reasons for the submissions in opposition are summarised as follows:
  - Inappropriateness of commercial use on an industrial zoned site and effects of this on the transport network and function of commercial areas. Two submitters considered this matter within the context of higher order planning documents.

- Effects on the traffic network, including effects on public transport and pedestrian safety.
- Effects on neighbours. These points include effects relating to noise, vibration, light pollution, and fumes.

24. I note that the planned school at 2 Lydia Street has not been consented or designated. As such, it does not form part of the existing environment.

### Resource Management Act 1991

25. When considering an application for resource consent and any submissions received, the consent authority must have regard to the matters listed in Sections 104 and 104B of the Resource Management Act 1991. Subject to Part II of the Act, which contains the Act's purpose and principles, including matters of national importance, the consent authority shall have regard to:

- Any actual and potential effects on the environment of allowing the activity.*
- Any measure proposed or agreed by the applicant for the purpose of ensuring positive effects on the environment or to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity.*
- Any relevant provisions of a plan or proposed plan, a national environment standard, a regional policy statement.*
- Any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

26. It should be noted that other than giving pre-eminence to Part II, Section 104 gives no priority to other matters. They are all matters to have regard to and the consent authority must exercise its discretion as to the weight that it gives certain matters, depending on the circumstances of the case.

27. Under Section 104B, when considering an application for resource consent for a discretionary activity, a consent authority may grant or refuse the resource consent, and (if granted) may impose conditions under Section 108.

28. Pursuant to Section 104(3)(a)(i) a consent authority must not have regard to trade competition when considering an application. No submissions received appear to relate to trade competition.

29. Section 104(3)(a)(ii) states that a consent authority must not have regard to any effect on a person who has given written approval to the application (unless that approval is withdrawn in a written notice before the date of the hearing). No written approvals have been provided.

### Actual and Potential Effects on the Environment (S.104 (1)(a))

30. As a discretionary activity the Council's assessment of this proposal is unrestricted and all actual and potential effects must be considered. Guidance as to the effects that require consideration is contained in the relevant objectives and policies, and any associated matters of discretion or control.

I have considered the relevant issues and it is my view that they fall broadly into the following categories:

- Positive effects
- Economic effects
- Transport effects
  - Effects on the transport network
  - Provision of public and active transport

- Site layout and access
- Provision of parking
- Urban design and visual amenity
  - Character, context, form, and location
  - Landscaping
  - Access and connections
  - Effects on safety and security (CPTED)
  - Signage
- Effects on the waterway
- Environmental health effects
  - Noise
  - Lighting
  - Fumes
  - Contamination
- Flooding effects
- Construction phase effects
- Effects on street trees
- Stormwater

### **Section 104(2) – Permitted baseline**

31. Prior to undertaking an assessment of the effects of this proposal it is useful to consider discretion available under Section 104(2) of the Act (referred to as the 'permitted baseline') whereby a consent authority may disregard an adverse effect of an activity on the environment if the Plan or national environmental standard permits an activity with that effect. Case law has established that this relates to the effects of non-fanciful hypothetical activities which could be carried out as of right under the Plan. I note that the use of Section 104(2) is discretionary, however I see no reason why that discretion should not be exercised in this case.
32. There is no directly relevant permitted baseline for a supermarket in the Industrial General Zone (these are a discretionary activity in the zone). However, there are a number of activities that could have similar visual effects that are permitted in the zone. For instance, industrial / warehouse type buildings, parking lots, and service stations are permitted in the zone, provided they meet built form standards set out in 16.4.2 of the District Plan (which the application does meet). Such activities may have similar visual effects to the proposal, however, would not create the same number of customer visits (and attendant access requirements, CPTED concerns, etc.). It is important to note, however, that a permitted baseline must be permitted by all parts of the District Plan. This includes those aspects relating to transport, earthworks, signage, and flood management.
33. The high trip generator rule in the Christchurch District Plan applies where an industrial activity is located within a building more than 5,000m<sup>2</sup>, or warehousing and distribution activities located within a building greater than 10,000m<sup>2</sup> GFA. It is worthy of note that the application documents show the proposed supermarket building having a net floor area of some 6,888m<sup>2</sup>. As such, to comply with the high trip generator rule, use of that building would need to be restricted to warehousing and distributing activities. As mentioned above, such use would not result in the same number of people visiting the site as currently proposed, or likely the same amount of vehicle parking between the building and Main North Road. I note that parking lots are permitted in this zone, however, again the high trip generator rule would likely prove relevant.
34. Under the high trip generator rule in the District Plan any 'other' activity besides those listed in Rule 7.4.3.10 would require consent if they exceed more than 50 vehicle trips per peak hour (3-7pm

weekdays) or 250 heavy vehicle trips per day (whichever is met first). A service station would be assessed against these requirements. Table 7.1 of the Applicants transport assessment appears to have calculated a trip rate of 15 vehicles per pump per hour for the service station. With eight pumps, this would result in traffic generation of 120 vehicles. As such, I anticipate that the petrol station could not be established as a permitted activity as currently proposed. A smaller petrol station, with less pumps and less traffic movements, could potentially comply with the rule in the location proposed.

35. In addition to the above, I note that any permitted activity on this site would need to comply with the other transport rules (the current configuration includes an access that is too wide and too many accesses), all earthworks rules, signage rules (including those relating to the height of the proposed pylon sign), and flood management rules (which limits the height of any fill to 0.3, depth of excavation to 0.6m, volume of filling to 20m<sup>3</sup>, and cumulative volume of excavation and fill to 50m<sup>3</sup> per site).
36. I am unconvinced that a full permitted baseline for development of this site of a scale to that proposed exists. Notwithstanding that, I accept that there are elements of the proposal that align with the outcomes sought for the Industrial General zone, as shown by its compliance with built form standards for the zone.

### Positive Effects

37. The Applicant has discussed the positive effects of the proposal within Section 7.1 of their AEE. This includes the redevelopment of an underutilised site, positive effects with regard to transport and pedestrian movements, and the emergency coordination facility aspect of the proposal. I discuss the transport and pedestrian effects below. I agree with the Applicant that the proposal would result in greater utilisation of the site. With regard to the emergency coordination facility part of the proposal, I acknowledge that this provides the potential for the site serve an important function during an emergency. I agree that this is a positive benefit of the proposal, although consider this needs to be contextualised within the day to day operation of the site as a commercial activity.

### Economic Effects

38. The proposal has been reviewed by Mr Tim Heath, Managing Director of Property Economics, with respect to economic effects (included as **Appendix B**).
39. Mr Heath does not consider the proposed supermarket to be equivalent to a new store entering the market, but more a relocation of spend and shoppers already shopping at the existing Pak'nSave store at Northlands Mall. He does not consider there to be economic impacts on the Papanui centre to the extent that they would alter the centre's amenity, vitality, role and function, future growth potential, or status in the commercial hierarchy of the centre. He also notes that from a practical perspective there would be difficulty in acquiring the 1.5-2.0 ha land holding typically required to support development of a new Pak'nSave store in and around the Papanui Key Activity Centre. I have asked for clarity from Mr Heath with respect to his assessment of the proposal as a relocation of an existing supermarket, noting that the zoning at the Papanui centre does provide for a replacement supermarket in the tenancy to be vacated. Mr Heath does not consider this to affect his assessment.
40. Mr Heath does not consider that the proposal would adversely affect the rebuild and recovery of the Central City area, the function of the Northwood / Styx Key Activity Area, or any other nearby centre. He agrees with the Applicant's assessment regarding industrial land, and considers that loss of the subject land would not result in any meaningful adverse implications on industrial land supply and capacity in the City.

41. I accept the assessment of Mr Heath with respect to economic effects and consider the proposal will not, in and of itself, result in adverse effects to such a degree that the role, function, vitality, or growth potential of any centres will be undermined.

### **Transport Effects**

42. This application triggers a number of transport non-compliances under the District Plan relating to the number of traffic movements proposed, access width, the number of vehicle crossings, and the lack of marking for staff parking. The supermarket has been estimated by the Applicant as generating 870 two-way vehicle trips, 233 pedestrian movements, 31 cycle movements, and 18 bus passenger movements in the evening peak hour. The proposal triggers the high trip generator rule (7.4.3.10 'High trip generators'), meaning a full integrated transport assessment is required. The Applicant has provided this, including modelling of the future environment at 2021 and 2031. This modelling is particularly relevant in this instance as, aside from the large number of traffic movements proposed, the transport environment will undergo substantial changes in the coming years due to infrastructure upgrades. This has resulted in a complex transport environment.
43. The Integrated Transport Assessment and modelling undertaken by Abley Transportation Consultants Ltd on behalf of the Applicant have been reviewed by Mr Mark Gregory, Transport Network Planner at the Christchurch City Council, whose evidence is provided as **Appendix C**. Mr Gregory was involved in a number of conferencing sessions with the Applicant's transport representatives and other interested parties; the Joint Witness Statements for which are included in **Appendix L**. Mr Gregory has also reviewed a set of thirteen transport conditions proposed by the Applicant, which form **Appendix P**.
44. Mr Gregory has included consideration of a number of higher order planning documents within his assessment, including the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update, Canterbury Regional Policy Statement, and Canterbury Regional Public Transport Plan (RPTP). I do not provide such an assessment, noting that with the exception of the Our Space and RPTP documents, the District Plan post-dates those documents and gives effect to them as relevant. I do acknowledge that the RPTP highlights the importance of Main North Road for public transport, with this identified as one of two corridors in the City for rapid transit such as rail or rapid busways. This is contextually important for both the consideration of effects and assessment against District Plan policies as they relate to public transport. I consider the higher order documents to be of less relevance to Northcote Road and QEII, given the District Plan categorises these as major arterial roads in relation to which there is strong policy direction.
45. Below I discuss effects of the proposal on the road network, before turning to public and active transport, site layout and access, and provision of parking. I have grouped these matters together in an effort to provide a concise overview of the key issues, however, highlight that Mr Gregory has undertaken a different (and more thorough) approach to which I refer the decision maker.

### Effects on the Transport Network

46. At the outset, I highlight that Mr Gregory has raised concerns with aspects of the modelling throughout the consenting process. This has, in part, resulted in the Applicant and Council engaging Quality Transport Planning to undertake an independent review of the modelling. This review is included as **Appendix Q**. The review was not available at the time of writing Mr Gregory's assessment, however, he has provided an addendum to his evidence (**Appendix R**). The peer review has not altered Mr Gregory's position, however, has raised an additional concern that development traffic has been underrepresented in the model.

47. The most physically noticeable change proposed to the roading network is installation of a signalised intersection along Main North Road to provide for the principal vehicular site access. Additional changes will be required to the Main North Road / Northcote Road / QEII intersection to provide two right turning lanes from Main North Road travelling northeast into QEII. It is also anticipated that changes to the signal phasing at this intersection will occur as a result of the Northern Corridor becoming operational, and I understand that modelling inputs have been updated to account for this change following consultation with CTOC and NZTA.
48. I refer the decision-maker to the assessment of Mr Gregory, included as **Appendix C**. From this, I understand the key issue with regard to the safety and efficiency of the road network relates to the PM peak hour (setting aside public transport, which is discussed below). At paragraph 149 of his evidence, Mr Gregory identifies that transport experts have agreed that the AM and Inter peak period models show considerably fewer effects than the PM peak and that there is higher degree of confidence in results for those times.
49. Mr Gregory notes at paragraph 146 of his evidence that the Main North Road / Northcote Road / QEII and Cranford / Main North Road intersections are modelled as operating at capacity, including following implementation of the Christchurch Northern Corridor, and that while operations at these intersections are forecast to change this will result in redistribution of intersection delays rather than reduction of delays.
50. Mr Gregory has raised concerns with some of the outputs from traffic modelling and presented additional figures outlining degrees of saturation / percentages of the capacity used at the Main North Road / Northcote Road / QEII intersection and the Cranford Street / Main North Road intersection. Mr Gregory has highlighted that the modelling appears to rely of a high degree of re-routing of baseline (non-development) traffic, in light of the available capacity in the road network surrounding the application site. He notes that this is a by-product of the modelling tools. Re-routing of traffic includes 'rat running' of vehicles via Winters Road to gain access to the Christchurch Northern Corridor, and Vagues Road to connect Cranford Street with Northcote Road. Both Winters and Vagues Roads give access to schools, are local roads in the District Plan roading hierarchy, and are not intended to operate in such a way (as connections between arterial roads).
51. At paragraph 251, Mr Gregory concludes with regard to the modelling that he is unable to support the validity of the modelling outcomes at this stage due to a number of concerns expressed throughout the consenting process. Mr Gregory acknowledges that there are mitigating factors which lend credence to the modelling, but retains concerns (see section 7.2.7 of his evidence). He is unable to conclude that network effects will be acceptable, noting that there is little available capacity in the network in this location and that management of model limitations and an apparent reliance on baseline traffic rerouting are concerns that have not been sufficiently addressed.
52. Mr Gregory's position that the modelling, as presented, is not sufficient to understand effects on the transport network appears to align with the independent review from Quality Transport Planning (**Appendix Q**). That review identified a number of issues with regard to the modelling, including an apparent underestimation of development traffic (Mr Gregory has calculated this as by approximately 16% or 170 vehicle movements per hour). I understand that the Applicant has committed to addressing the issues raised in the peer review prior to the hearing, however, without that modelling I have difficulty concluding as to effects on the transport network. Given the fact that the intersections are shown as operating at capacity without development, combined with the potential that development

traffic has been underestimated, it appears that adverse effects may be more than minor and potentially significant.

### Provision of Public and Active Transport

53. Main North Road is a public transport route and has been identified for upgrades in the future, including for rapid transit (e.g. light rail). Mr Gregory considers the need to protect the ability for Main North Road to accommodate public transport both at present and in the future to be of high importance. Furthermore, the Applicant has estimated that approximately one quarter of the trips arriving to the site will do so via public transport, walking, or cycling. In part, the Applicant has relied on these alternative modes to reduce the amount of vehicle parking provided on site (through permitted parking reduction factors). Despite this, the application plans do not currently show high levels of integration with the public transport network, quality provision for pedestrian movements, or clear routes for cyclists.
54. Mr Gregory notes that the proposal includes the narrowing of the public transport corridor along Main North Road, which he is particularly concerned about given its context as a core public transport route. There has been discussion of priority lighting for public transport at the proposed intersection and the relocation of bus stop throughout the consenting process, which Mr Gregory considers should be integrated within the proposal.
55. Pedestrian connections into / from and within the site are of concern, as well as those beyond the site, with issues within the wider pedestrian catchment relating to the crossing of arterial roads to reach the application site. Mr Gregory notes that the petrol station appears to be the primary regime, with other access modes marginalised in comparison. For example, the southern pedestrian connection from Main North Road into the supermarket is circuitous in order to accommodate the proposed location of the service station.
56. Mr Gregory has also noted concerns with the functionality of the site with respect to cycling, with provision for cycling not clearly demonstrated. The Papanui Parallel Cycleway and Northern Line Cycleway, both Major Cycle Routes are located in proximity to the site, with the Northern Line Cycleway approximately 400m to the west of the Lydia Street entrance to the site.
57. In Mr Gregory's opinion, public and active transport measures have not been sufficiently integrated into the site design. This is in spite of the Applicant estimating a high number of persons visiting the site by such means, and reliance on these alternative modes of transport for reducing the provision of vehicle parking on site.

### Site Layout and Access

58. There are a number of concerns with relation to the site layout, some of which have raised safety concerns (addressed in Mr Gregory's evidence as well as an earlier Safety Audit).
59. The position of a roundabout located 50m west of the proposed signalised access is one concern, with potential for this to cause queuing within the site which may negatively affect the functioning of Main North Road. The Applicant has proposed conditions of consent in an effort to address this, which Mr Gregory does not consider to be sufficient – he has recommended the roundabout not provide access to the Foodstuffs Head Offices to the south.

60. The number of vehicle accesses proposed is another concern, particularly with respect to the existing access to the Oil Changers site from Northcote Road, the access to the existing Local Centre from Main North Road, and the ability for vehicles to turn right into / out of Lydia Street given that 100 vehicles per hour were estimated to be making the movement into Lydia Street (this raises concerns both with the current configuration and within the context of future upgrades to Northcote Road, which may remove the ability to make the movement). The Applicant has proposed conditions in an effort to address these matters. I understand that Mr Gregory considers some of these suitable (e.g. restriction of access to the Oil Changers), but that others are not (e.g. while one condition removes the ability to turn right out of Lydia Street onto Northcote Road another restricts semi-trailer and fuel tanker deliveries to turning right only from Northcote Road into Lydia Street).
61. Both Mr Gregory and the Safety Audit (included within Appendix F of the Notified Documents) raised concerns with regard to the proposed signalised intersection on Main North Road and the Redwoods Family Dentist's at 186 Main North Road. The vehicle entrance to 186 Main North Road will conflict with the proposed intersection, with potential safety implications. I note that since the writing of Mr Gregory's report, the Dentist's have withdrawn their submission opposing the application. I understand that this was following consultation with the Applicant, and that a resolution to the issues was agreed. Neither myself, nor Mr Gregory, are aware of what this resolution entails at the time of writing our respective reports, however, I highlight that this would need to address the safety concern, which the Safety Audit considered to have a frequency rating of 'occasional' but risk of death or serious injury of 'likely'.
62. Mr Gregory has identified a number of site layout and access issues in his report. I understand that these have been raised previously, including within expert conferencing. As with the Redwoods Family Dentist, and the proposed transport conditions of consent, I understand the Applicant may propose resolutions to some of these concerns, but that those proposed up to this time do not sufficiently address Mr Gregory's concerns.

#### Provision of Parking

63. With regard to vehicle parking, Mr Gregory notes that through conferencing, an agreement was made for basement car parking to be provided to a higher standard than required by the District Plan. He considers that this addresses his concerns with respect to vehicle parking layout. I note the at grade parking layout has been assessed as meeting the stall dimension, aisle width requirements, etc. of the District Plan and, therefore, consider these to be suitable.
64. With respect to the lack of marking for staff parking, Mr Gregory notes that it is suggested by the Applicant that this be managed through Travel Demand Management. He has concerns that this may result in staff parking within the surrounding on-street parking network.
65. Mr Gregory recommends additional information be provided with respect to cycle parking. I note that the Applicant has stated that that at least the minimum of 23 visitor parking spaces and 9 staff spaces will be provided (with these nine spaces to be at basement level). The Integrated Transport Assessment also states that end of trip facilities will be provided for employees. It appears that the amount of cycle parking to be provided will accord with District Plan requirements.

#### Conclusion with Respect to Transport

66. In his summary, Mr Gregory considers that the proposal could be supported from a transport perspective if six key concerns can be addressed:

- Safeguarding of the public transport route, including space to develop the corridor, and measures to mitigate delays (e.g. priority lighting at the proposed intersection);
- Integration with the public transport corridor through design (e.g. through location of covered bus stops, integration with pedestrian connections into the site);
- Demonstration that the site can function with the Lydia Street entrance / exit as left in and left out exclusively (including for delivery vehicles);
- Confirmation regarding network effects, with all access movements operating safely and modelling risks suitably managed;
- Demonstration that the access to the Redwood Family Dentists at 186 Main North Road can operate safely with the proposed signalised intersection; and
- Confirmation that matters related to safe cycle and pedestrian access to the site have been achieved.

67. At present, I understand that Mr Gregory has significant concerns with the proposal, and is unable to support it. In light of his concerns, I am of the opinion that adverse effects as they relate to transportation matters will be more than minor, and potentially significant. This includes with respect to the safety and efficiency of the roading network, including the strategic transport network<sup>2</sup>.

### Urban Design and Visual Amenity

68. The proposal is considered below with regard to urban design and visual amenity matters. This has been informed by assessments from Mr David Hattam, Senior Urban Designer at Christchurch City Council (**Appendix D**) and Ms Jennifer Dray, Senior Landscape Architect at Christchurch City Council (**Appendix E**). These experts have framed their assessments within the context of the Commercial Core matters of discretion and policies<sup>3</sup>. As discussed throughout this report, the activity is not representative of the type of development anticipated within the Industrial General Zone. I accept that the development aligns with the built form standards of the Industrial General Zone, however, the operation of the activity will result in a very different outcome with respect to the number and types of people who will visit the site (higher numbers and of a more varied range of the population). I consider matters relating to urban design and visual amenity are more appropriately assessed against expectations for commercial activities, whilst having regard to the outcomes anticipated within the Industrial General Zone.

69. I note that the proposal was taken to the Christchurch Urban Design Panel, with recommendations from that process included as **Appendix S**. A number of the matters raised by the Design Panel are discussed below, and were subject to discussion at expert conferencing (the Joint Witness Statement's for which are included as **Appendices N and O**).

### Character, Context, Form, and Location

70. Mr Hattam has provided an assessment of the character and context of the site, as well as the form and location of buildings within **Appendix D**.

71. Mr Hattam has considered the existing character of the site, including the buildings within the Local Centre to the north and the Foodstuffs Head Offices to the south. Mr Hattam notes that the main

<sup>2</sup> "means:

- the strategic road network;*
- the rail network;*
- the region's core public passenger transport operations and significant regional transport hubs (including freight hubs), such as Christchurch International Airport and Lyttelton Port of Christchurch; and*
- the strategic cycle network of major cycle routes."*

NB: The 'strategic road network' is defined in the District Plan as "state highways and major arterial roads".

<sup>3</sup> Specifically assessment matter 15.13.1 Urban design and Policy 15.2.4.2 Design of new development. I note that supermarkets of the size proposed would be assessed against these matters where located within a District Centre or Neighbourhood Centre.

building in the Local Centre is sited up to its road frontages, while the Foodstuffs Head Offices are set back some 30m from Main North Road behind landscaping, with a limited amount of car parking between the building and road corridor. In contrast, the proposed building will be setback some 70m from Main North Road, with the space between dominated by car parking and a petrol station and some landscaping. Mr Hattam does not consider this to be in keeping with the existing character of the site. I accept this point, however, also acknowledge that the underlying Industrial General zoning does provide for such outcomes (including the location of the service station).

72. With regard to site layout and building form Mr Hattam considers that:

*“The site is not well integrated with adjacent sites in terms of access, or provision of coherent layout that would support a stronger neighbourhood character and cohesive built form.*

*Furthermore the layout of the site, with the supermarket set well back from the street, with petrol station in front, will not provide the appropriate level of engagement with the surroundings, or the level of visual quality and interest that would be anticipated for a neighbourhood centre. There are also issues with the physical connections across the site and to its surroundings for pedestrians. CPTED concerns are also apparent although appear to be resolvable. A good landscape response could improve the visual appeal of the proposal but is not a solution to the fundamental integration issues or lack of engagement noted above.”*

73. With regard to the site layout, Mr Hattam notes that it is not well integrated between the various components (e.g. the supermarket is set back a greater distance from Main North road than the adjacent buildings, pedestrian access is not well resolved) or the wider environment (e.g. at a block scale the site is not easily accessible for pedestrians). The proposed layout is a considerable concern and adversely affects the functionality of the site. For example, the location of the petrol station at the front of the site results in a poorly resolved pedestrian connection between the supermarket and Main North Road (the southern connection). Similarly, the chosen layout creates issues for pedestrian connections between the components of the application (e.g. between the Foodstuffs Head Offices and the supermarket). On a wider scale, connections with the surrounding land uses are poorly resolved (e.g. St Joseph’s School to the southeast of the Foodstuff’s head offices). This is discussed below, however, Mr Hattam notes that some of the properties within 400m of the application site are more than ten minutes’ walk away. The pedestrian connection to Northcote Road via Lydia Street is of concern from both safety and amenity perspectives.

74. Mr Hattam considers that the supermarket building is acceptable in its visual interest, rather than contributing positively, and notes the large setback from the road (with intervening car parking and the petrol station) and the large yellow façade facing Main North Road (which emphasises the bulk of the building) as particular matters that reduce its contribution to the street scene. Glazing and materiality help to mitigate the large and simple building form to a degree.

75. With regard to the northern and southern façades, Mr Hattam has noted that these have less visual interest than that facing Main North Road. He has raised concerns with a proposed sign on the northern façade (discussed below) and the otherwise featureless wall. However, he recognises that an activity cannot provide active frontage on all sides and considers his concerns with respect to the northern elevation to be lesser than those for the eastern. Mr Hattam considers the southern façade to be appropriate.

76. The bulk and location of the petrol station at the front of the site is a significant concern to Mr Hattam (discussed above with regard to site layout). The structure will be visually prominent and visible in long views of the site, as it sits forward of the other buildings. The supermarket will be a subservient element compared to the service station. In Mr Hattam’s opinion the petrol station will take an overall

design that is at an 'acceptable level' with regard to street scene and result in an outcome that is detrimental.

77. Mr Hattam has considered proposed landscaping within the context of the visual dominance of built form proposed. He notes that while there is a significant landscaped area in the north of the site, the majority of the area between the supermarket building and Main North Road is dominated by hard standing. He accepts that while the landscaping may be generally well resolved it does not mitigate the issues he has raised, particularly with regard to the site layout.
78. Overall, Mr Hattam is not supportive of the proposal. I have given consideration to the weight to be placed on his comments relating to building bulk, form and location in light of the Industrial General zoning of the site. As detailed above, there is an anticipated built form outcome within the zone with which the application aligns, however, the zoning does not anticipate the type of activities proposed. Having regard to this, I am of the opinion that significant weight should be placed on Mr Hattam's comments relating to site layout and functionality. I consider that adverse effects as they relate to these matters will be more than minor. I discuss access and connections, as well as safety, in more detail below. Given the Industrial General zoning, I consider that less weight should be placed on visual amenity effects (noting that the proposal generally aligns with built form standards). I have some difficulty resolving this with the fact that the proposal will result in the expansion of an existing commercial centre into the Industrial General Zone, however, consider that weight must be given to the underlying zoning<sup>4</sup>. Adverse effects as they relate to visual amenity will be minor.

### Landscaping

79. While Mr Hattam has provided comment on the inability of the landscaping proposed to mitigate wider urban design issues, Ms Dray has provided an assessment of the landscaping proposed in more specific terms (**Appendix E**). Ms Dray considers that in general the planting proposed is of good quality and appropriate species, and that the proposed planting methodology is also mostly suitable. There are a number of discrete exceptions to this, where Ms Dray has recommended additional planting via consent conditions. Ms Dray has also recommended a clear tree planting methodology stated within any conditions of consent. I understand that these matters were discussed at expert conferencing, and the Landscaping Joint Witness Statement concludes with agreement from both Ms Dray and the Applicant's landscape architect (Tony Milne of Rough and Milne) that subject to some minor changes via amendments to the landscape plan and consent conditions, the proposal can be considered acceptable. At the time of writing this report an updated landscape plan had not been received. As such, I have included a set of draft conditions should the application be granted, addressing the matters raised by Ms Dray. Having regard to the assessment of Ms Dray and the proposed conditions, I am satisfied that the landscaping proposed will be suitable in a general sense.

### Access and Connections

80. Mr Hattam has provided an assessment of the ability of the proposal to provide for safe, legible, and efficient access for pedestrians (**Appendix D**). This has been restricted to pedestrian connections, with the above traffic assessment covering other forms of movement.
81. Mr Hattam has referenced the pedestrian shed diagram provided by the Applicant, which shows a relatively small number of residential units within a five minute walk of the site (he has estimated approximately 50). Some properties that are within 400m of the site would be at least a ten minute walk away. This suggests that the site is not particularly accessible on foot. Notwithstanding this, the

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<sup>4</sup> As discussed below, I have placed different weight on matters relating to pedestrian connections and safety, as the underlying zoning does not anticipate the number of visitors to the site as will result from this proposal and, therefore, the number of people who would feel effects relating to these matters.

Applicant has estimated that the supermarket is anticipated to generate approximately 233 pedestrian movements in the evening peak hour.

82. Mr Hattam has referenced the lack of pedestrian connection between the existing Foodstuffs Head Offices and the supermarket. There does appear to be a lack of such, with persons moving between the two having to either walk through the head offices carpark or exit the site onto the footpath along Main North Road, cross the vehicle access at the signalised intersection, and then enter the site via either the southern or northern pedestrian entrances from Main North Road (see Figure 3). This is not a direct route and it does appear that an opportunity has been missed to increase the ability to move between the two components of the proposal. I note that the initial application plans did include a pedestrian connection with a crossing to the west of the roundabout / east of the basement carpark entrance. This created issues with vehicular transport (it would affect the efficiency of the roundabout and could cause queues onto Main North Road) and was identified as a safety issue by Council's transport engineers. I understand the pedestrian connection was removed and the current approach proposed to address this safety concern. This appears to relate again to issues with the wider site layout.
83. In my view, more concerning than the above is the quality of the main pedestrian connections to Main North Road and that to Lydia Street. In particular, the southern pedestrian access to Main North Road follows a circuitous route that will run next to the main vehicle access (see Figure 3). This access narrows to a width of 1.1m where it passes bollards used for the petrol station refuelling vehicle before turning north across the parking area, and then west to one of the main supermarket entrances. Mr Hattam considers that this access will feel indirect, and less safe and pleasant than the northern pedestrian walkway (discussed below). He considers that users may find use of this access an uncomfortable experience.

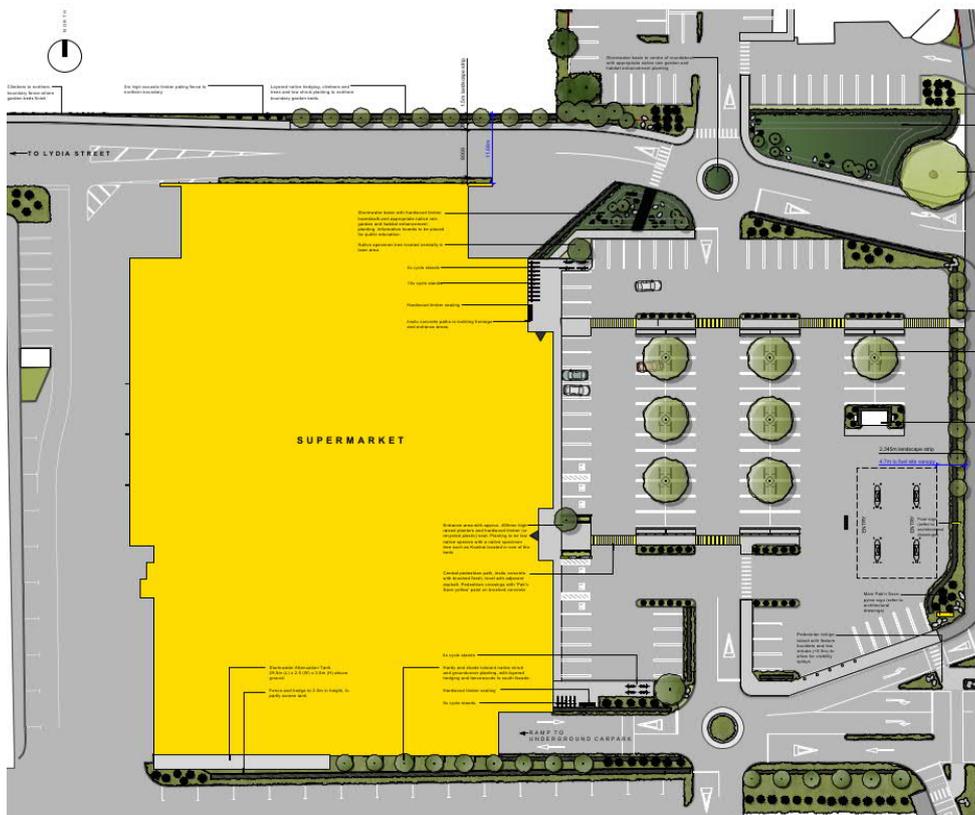


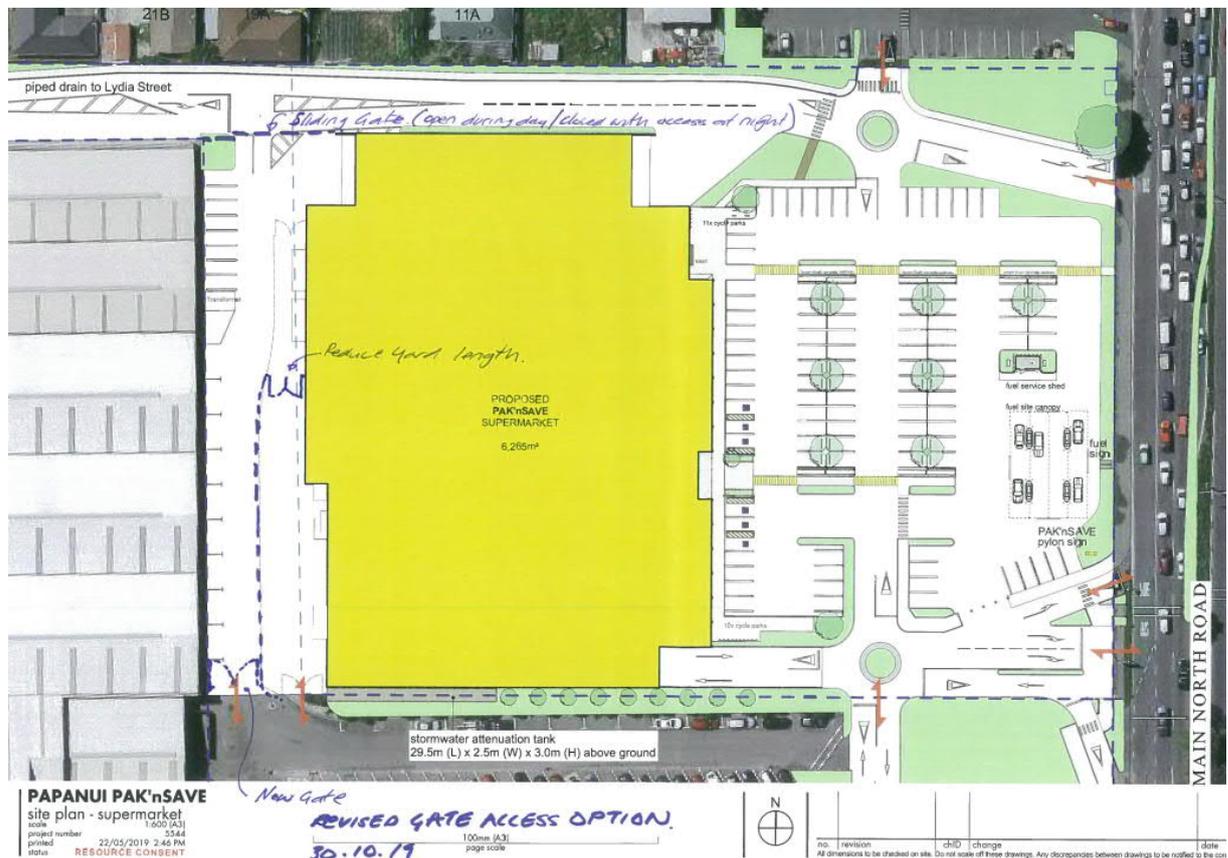
Figure 3. Landscape Plan showing pedestrian connections along Main North Road.

84. Ms Dray has recommended conditions of consent requiring additional landscaping adjacent to the southern pedestrian walkway east of the bollards (**Appendix E**). While this will increase the legibility of the connection, it will not mitigate concerns relating to amenity and, potentially, safety. It appears that this route has been largely mandated by the location of the service station at the front of the site, which means a straight access from Main North Road to the supermarket doorway, as provided for the northern access, cannot be provided here. As with the southern connection to the Foodstuffs Head Offices, I acknowledge that the Applicant has changed this access through the consenting process, with the original design causing traffic safety issues at the roundabout. However, where the lack of connection between the head offices and supermarket will be experienced primarily by those working at the site, the southern connection to Main North Road will be experienced by the general public. Furthermore, it will be one of the primary pedestrian accesses to the site. This raises greater concerns in my mind than the internal connection to the head offices building, and again points to issues with site layout.
85. The northern pedestrian access is more direct than the southern, leading pedestrians from Main North Road to a supermarket entrance. Expert conferencing suggested this would be the primary pedestrian link to the site, with reference to a bus stop location near this. I note that the plan set current at the time of writing this report did not include such a bus stop. Expert conferencing also suggested that landscape enhancement and increased path width would be proposed for the northern access.
86. Mr Hattam has not specifically mentioned connections between the supermarket and the Commercial Local zoned shops to the north in his assessment, however, I understand it was discussed in expert conferencing. The relevant experts appear to have agreed that at a minimum there should be a shared pedestrian and cycle link from the supermarket into the area zoned Commercial Local. This appears to be achieved, based on the application plans.
87. Both Mr Hattam and Ms Dray have raised concerns with the pedestrian link to Lydia Street and the area to the rear of the supermarket from a safety perspective. I discuss this below with respect to Crime Prevention through Environmental Design. In terms of legibility and efficiency that connection also creates issues. Mr Hattam considers the 1.2m wide pathway to Lydia Street to be acceptable but not ideal, noting that within the context of the Industrial General zoning of 2 Lydia Street its use is expected to be limited (Mr Hattam has indicated his concerns with this should 2 Lydia Street be used as a school in the future). With regard to the rear of the site, between the supermarket and 2 Lydia Street, Mr Hattam does not consider that a safe and comfortable walking environment has been created. He notes that the area is not intended for public access, but that access will not be restricted during the day. The lack of a pedestrian footpath, combined with the width of the accessway and possible number of cars using the area is of concern. Mr Hattam considers that while the proposed layout may be acceptable in an industrial environment, it is less so in a commercial one such as that proposed (he also notes the possibility of children using this area in the future, seemingly referencing the proposed future school at 2 Lydia Street).
88. Mr Hattam has provided comments on the number of vehicle accesses (there are seven in total for the site), and considers that while this is a positive in terms of vehicle connection, reducing the number of these would increase pedestrian comfort by reducing potential delays and hazards and giving greater priority to walking in the street space.
89. Overall, Mr Hattam considers that the pedestrian access to the street and within the south of the site is unsatisfactory, resulting from the distance of the supermarket building from the street and inconvenient pedestrian routes. I largely agree with Mr Hattam's points, considering the southern pedestrian access from Main North Road to the supermarket to be inefficient, not particularly legible, and potentially

unsafe. Increasing the amount of landscaping as proposed by Ms Dray would assist in the legibility of this, however, would not address the inefficiency or safety of the route. The other key concern Mr Hattam has identified is the lack of a pedestrian connection between the Foodstuffs Head Offices and the rest of the site. Noting the high number of people working at those offices I accept that this is a less than ideal outcome, however, consider it a lesser concern that the access between the supermarket and Main North Road. While any future use of 2 Lydia Street as a school cannot be considered to form part of the receiving environment, I share Mr Hattam's concerns regarding the pedestrian access to Lydia Street and the rear of the site. Lastly, Mr Hattam has raised concerns with how the site integrates with the wider block, noting that the surrounding area is not particularly accessible for pedestrians (an issue also raised by Mr Gregory).

Effects on Safety and Security (CPTED)

90. I have received comments from both Ms Dray (**Appendix E**) and Mr Hattam (**Appendix D**) with regard to Crime Prevention through Environmental Design (CPTED). Their comments align with respect to safety and security, with both raising concerns with the rear of the site. These relate to the rear loading / parking area (between the proposed supermarket building and the existing building at 2 Lydia Street) and the vehicle and pedestrian access to Lydia Street. The matters were discussed at expert conferencing.
91. The Applicant had proposed installing gates at the Lydia Street entrance, to the north of the supermarket building, and to the southwest of the building (see page 3 of the Applicant's Appendix D - Site Landscape Plan). Following expert conferencing, the Applicant's architect, Nico Young of McCoy Wixon Architects, provided a site plan with the layout shown in Figure 4. This includes a sliding gate in the northern area (to be open during the day and closed with access at night), a gate at the southern end of the building, and a further gated / fenced area forming an enclosed compound. I understand that the reasoning behind this being open to the public, rather than permanently gated, is to allow for movement of vehicles from / to the Foodstuffs Head office to / from Lydia Street and deliveries for the supermarket.
92. The other remaining gate originally proposed, that at the Lydia Street site entrance, Ms Dray recommends is removed and that Lydia Street be open its full length and lit at night. The Applicant has accepted a condition relating to lighting of this area. The location of this gate is now shown on Figure 4 (being west of the western-most part of the site shown), so it is not clear whether the Applicant is still proposing this.



**Figure 4.** Site plan showing revised location of gates and fencing at the rear of the supermarket (received from Mr Niko Young, 30/10/19).

93. Ms Dray is of the opinion that the area to the rear of the supermarket remains a CPTED issue, despite the gating proposed during night-time hours by Mr Young. She has recommended that aspects of the design can be modified to create a safer environment. These include:

- Controlling access to the rear of the supermarket to ensure there is no public access either during daytime or night-time hours (e.g. through the use of swipe card access for staff to maintain traffic flows); or
- A combination of measures which include lighting, access management and an improved pedestrian environment by provision of a pedestrian path or a marked pedestrian access way.

94. For clarity, the Applicant has accepted a condition relating to lighting of the area to the rear of the supermarket building and access to Lydia Street. This will require lighting of these areas be established in accordance with AS/NZS1158.3.1 for outdoor car parks, which sets lighting standards relating to matters such as the likelihood of crime, and will assist in addressing the CPTED concerns in these areas.

95. Ms Dray has also recommended conditions relating to the ramp providing access to the basement car park being locked at night (which the Applicant has accepted), and the maintenance of specific landscaping elements to provide sightlines into and out of the site.

### Signage

96. The proposal includes three signage non-compliances relating to: the maximum height of signage attached to the building (10.8m where 9m is provided for as a permitted activity), the maximum height

and area of free-standing signs (with the pylon sign 10m in height where 9m is permitted and 19m<sup>2</sup> in area where 18m<sup>2</sup> is permitted<sup>5</sup>), and the proposed digital component of the petrol station sign (being that which displays fuel prices).

97. With regard to the proposed signage attached to the building, I note that consent is only required because the maximum height of that on the eastern elevation will exceed the height of the maximum permitted by 1.8m. Mr Hattam has raised concerns with this sign (**Appendix D**), however, these concerns are more specific to the area of yellow attached to the parapet, rather than the sign itself (see Figure 5). Having regard to the setback from a public space and the relatively small area of the 'Pak'nSave' sign itself, I consider adverse effects relating to the 1.8m height breach to be less than minor. I do, however, acknowledge Mr Hattam's concerns with regard to the yellow background and negative effects this has on the building from a visual interest and architectural perspective. The yellow area is not integrated into the built form and is the most visually dominant element of the building. Mr Hattam has noted that reducing the yellow area would improve visual interest and help assert the building as the primary form.



Figure 5. Eastern elevation of the supermarket building.

98. For clarity, the other signage attached to buildings meets the permitted standards for signage in the Industrial General Zone. I note that both Mr Hattam (**Appendix D**) and Ms Dray (**Appendix E**) have raised concerns with the signage proposed on the northern elevation of the building and effects this may have on residential amenity of those living adjacent to it. That sign will have an area of 18.4m<sup>2</sup> and maximum height of 6m, so will be visible above fencing from the backyards of 9 and 11 Northcote Road. I note that the owners and occupiers of these units did not submit in relation to the proposal. The owners of 15 Northcote Road did submit, raising concerns with noise, light pollution, and the possibility of windows facing their site. They also suggested planting of a three meter wide greenbelt between the residential units and application site. The Applicant's landscape plan does include planting along this boundary, however, not to a depth of 3m. Ms Dray has recommended conditions relating to the landscaping, particularly that they be of a species capable of reaching a height of 6m. I have included these within my recommended conditions should consent be granted. I consider adverse effects of the signage on the owners and occupiers of 9, 11, and 15 Northcote Road will be no more than minor and acceptable.



Figure 6. Northern elevation of the supermarket building.

<sup>5</sup> For clarity, I note that the Applicant has calculated the area of the pylon sign as 20m<sup>2</sup>. This calculation appears to have been undertaken based on the sign being solid to the ground, rather than with the cut-out between the two legs of the sign.

99. Turning to the proposed free-standing signage, I note that consent is required because the pylon sign is 1m higher than what would be permitted and the area is 1m<sup>2</sup> more than permitted. The digital component of the petrol station sign also requires consent. I consider that the signage proposed will present an orderly and coordinated display. The proposed signage follows a standard specification typical of supermarkets and petrol stations and provides for clear, concise signage to enable effective site recognition and availability of product information such as fuel prices. While the pylon sign will be near the signalised intersection, it is of a relatively simple nature (with little text), not considered to be of a design or nature that will distract motorists, and will not obscure traffic controls.



**Figure 7.** Proposed free-standing signage.

100. I agree with the Applicant's assessment that free-standing signage on this site could be in excess of the number proposed (if not size), with three freestanding signs 9m in height and 18m<sup>2</sup> in area permitted by the signage chapter of the District Plan. There is an expectation for large free-standing signs on Industrial General sites, and that proposed is relatively restrained. Pylon signs are common for supermarkets and service stations, serving to identify the site in advance and consolidate all information on larger signs to avoid visual clutter and distraction that can otherwise be generated from increased numbers of individual signs.
101. In considering the digital signage specifically, I note that the digital signage comprises a discrete area and is located close to the ground. The digital LED price panel will not display a regularly changing image (with numbers only changing when the price of fuel changes). I consider that the digital signage will not, in and of itself, have adverse effects on the environment.
102. Overall, I consider that the proposed signage will combine to form an orderly and coordinated display following standard specification typical of supermarkets and service stations that provides for effective site recognition and availability of product information such as fuel prices. It is not considered to be of design or nature that will distract motorists and will not obscure or confuse any traffic controls. I consider that adverse effects associated with the proposed signage as a whole will be less than minor.

### Conclusion with Respect to Urban Design and Visual Amenity

103. Having regard to the underlying zoning, as well as the nature of the activity (which will bring more people to the site than envisaged for industrial activities), I consider the key concerns relate to site layout, pedestrian connections, and safety. I highlight the concerns of Mr Hattam with regard to the building bulk and form, however, acknowledge that the underlying zoning does not set particularly rigorous standards in this respect and that the proposal meets those standards.
104. I consider the southern pedestrian connection from Main North Road to be a key concern, noting the circuitous route proposed and the concerns raised by Mr Hattam. Having regard to the high number of pedestrian movements estimated by the Applicant, and the fact that this will be one of two main pedestrian entrances, I consider adverse effects relating to this will be more than minor. Amending the southern pedestrian access to create a more direct route, as proposed for the northern pedestrian access, would be a more apposite outcome. The key issue with respect to providing a direct pedestrian connection between Main North Road and the southern entrance to the supermarket appears to be the location of the service station. I also consider the area to the rear of the supermarket and the access to Lydia Street to be of some concern from a useability perspective, and that there are concerns with how the site integrates with the surrounding environment on a wider scale.
105. The other key concern is safety, particularly that relating to the rear of the supermarket; it appears that this issue could be largely resolved through either gating throughout the day and night or a combination of access management, lighting, and enhanced pedestrian connections.

### **Effects on the Waterway**

106. The Applicant seeks to pipe the Lydia Street Drain, running along the northern aspect of the site, for a length of 225m of the 305m of open waterway. Currently the drain is a timber-lined box drain through the site, becoming piped under the Northcote Road / QEII Drive / Main North Road intersection to Kruses Drain where it has been naturalised through St Bede's College.
107. The waterway is classified as a network waterway within the Christchurch District Plan. These are described within Appendix 6.11.5.1 'Characteristics of water body classifications'<sup>6</sup>.
108. The proposal has been reviewed by Ms Emily Tredinnick, Surface Water and Land Drainage Planner for Christchurch City Council, and Dr Greg Burrell, Waterways Ecologist for Christchurch City Council (**Appendix I**). Ms Tredinnick and Dr Burrell do not agree with the Applicants assessment that the proposal will result in an overall improvement of ecological values in the catchment, noting that the two key environmental benefits put forward consist of mitigating an existing off-site pollution source and stormwater treatment. They highlight that the pollution will still go somewhere, and that stormwater treatment is a requirement for a size of this site and would be required irrespective of piping of the waterway.
109. However, Dr Burrell has provided a calculation of indigenous planting to assist in offsetting the habitat loss due to piping to the Applicant (1,350m<sup>2</sup>). The Applicant amended their proposal to provide in excess of this, remove exotic species, and confirmed that the native specimens used will be locally-sourced. However, this is turn raised concerns from Ms Dray from a general landscaping perspective, who requested that the road frontage trees along Main North Road and seven trees within the main car parking area be exotic species. Dr Burrell has accepted this and I have included proposed conditions

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<sup>6</sup> "Generally engineered or modified waterways with limited existing ecological values but some potential for enhancement. Flooding of surrounding land is generally a result of obstruction of the waterway rather than a significant natural floodplain. Amenity values for property owners and immediate neighbours are generally incidental to the drainage functions of the waterway."

of consent to reflect this. Dr Burrell and Ms Tredinnick recommended conditions of consent to retain existing trees that currently screen or shade the waterway, and to ensure that works within the waterway setback will be undertaken in such a way to mitigate erosion and sediment release. The Applicant has agreed to these conditions.

110. I accept the assessment of Ms Tredinnick and Dr Burrell and consider the proposed partial piping of a network waterway and works within the waterway setback will include an appropriate level of environmental offsetting as mitigation. Noting the role of network waterways within the Christchurch District Plan, I consider the proposal will not undermine its function and will continue to provide for the appropriate capture and conveyance of water, and that adverse effects will be minor.

### **Environmental Health Effects**

111. The below considers four matters relating to environmental health: noise, lighting, fumes, and contamination. These have been raised either as a result of District Plan non-compliances or through identification of concerns via submissions.

#### Noise

112. The proposal will result in noise emissions that breach District Plan standards by no more than than 10dB along the boundaries of adjacent residentially zoned properties (those adjacent to the north of the site and on the far side of Main North Road). The exceedance of the noise standards ranges from 1dB<sup>LAeq</sup> to 6dB<sup>LAeq</sup> in daytime and up to 10dB<sup>LAeq</sup> at night time. The Applicant has provided an assessment of these noise emissions, which have been reviewed by Ms Isobel Stout, Senior Environmental Health Officer at Christchurch City Council. Ms Stout's assessment is included as **Appendix I**.
113. Ms Stout notes that noise will come from predominantly two sources – vehicles (heavy and light vehicles involved in restocking and customer movements), and plant and equipment. She accepts that there is a high level of ambient noise associated with the roading network, however, highlights that there is still a requirement to mitigate noise effects. Ms Stout is of the opinion that noise can be kept at an acceptable level at times when environmental conditions allow for it to be noticed. She has recommended conditions relating to a Noise Management Plan to ensure noise is kept at acceptable levels. I adopt this assessment and have included conditions to this effect should consent be granted, which the Applicant has accepted. I consider adverse noise effects to be no more than minor and acceptable for adjoining residential neighbours.

#### Lighting

114. Noting the lighting matters raised by a submitter, I have asked Ms Stout to provide comments on this aspect (**Appendix I**). Ms Stout notes that the proposed lighting can achieve compliance with District Plan standards and that the plans are drawn using LED luminaries (a matter raised by one submitter). Taking account of the overall light level and the direction into the car parking space, Ms Stout considers the proposal will result in no particular adverse effects over and above those anticipated by the District Plan.
115. I note the comments of Ms Dray and Mr Hattam above with regard to lighting of the parking area to the rear of the supermarket, which has not been included on the lighting plan (although the Applicant has stated that lighting will comply with the relevant standards). Should consent be granted, I have recommended conditions relating to lighting. These include a condition requiring lighting be designed and installed to achieve a minimum level of two lux, with high uniformity, during the hours of operation

throughout the site except for the parking and manoeuvring area to the rear of the supermarket and the Lydia Street entrance. These two areas have resulted in CPTED concerns, for which a higher level of lighting is suitable. I have recommended that lighting of these areas be in accordance with AS/NZS1158.3.1 for outdoor car parks, which accounts for night time vehicle / pedestrian movements, occupancy rates, and risk of crime. The Applicant has accepted the lighting conditions.

### Fumes

116. Ms Stout has provided comment on the possibility of air pollution through fumes associated with traffic movement and the petrol station (**Appendix I**).
117. With respect to the petrol station, I highlight the location of this away from residential properties, the permitted nature of that activity within the Industrial General Zone, and that hazardous substances are regulated under the Hazardous Substances and New Organisms Act 1993. The granting of consent does not alter requirements to comply with that Act. I also note that the Christchurch District Plan sets few standards for the regulation of such substances, none of which are applicable here.
118. More generally, the proposal will result in additional vehicles using the application site than at present. Some of these movements will be between the supermarket and Lydia Street, adjacent to the residential zoned properties along Northcote Road. With regard to this, I note that the site is zoned Industrial General, which anticipates heavy vehicle movements. The proposal will include such movements for deliveries, as well as smaller vehicles. I also note that this access is an existing right-of-way and subject to heavy vehicle movements, and that the proposal will include installation of a 2m high acoustic barrier along the residential property boundaries, as well as landscaping along the majority of those boundaries. I consider that adverse effects as they relate to fumes are unlikely to be significantly different from that anticipated for this site.

### Contamination

119. Ms Stout has provided an assessment with respect to contamination (**Appendix I**). She notes that a Preliminary Site Investigation has been undertaken, however, as the site is currently built on / in use a Detailed Site Investigation has not been undertaken and the proposal is a discretionary activity under Regulation 11 of the NES. Ms Stout has recommended that if consent is granted a Detailed Site Investigation will be required as a condition of consent. Ms Stout has also recommended that any Remedial Site Action Plan or Site Management Plan should include measures for the control of any unanticipated contamination. These requirements have been included within the conditions proposed by the Applicant (paragraph 6.1.1 of the AEE). Ms Stout has recommended these be adopted, with slight modifications, which the Applicant has accepted. I accept that the works can be appropriately managed under the NES via conditions of consent.

### **Flooding Effects**

120. The application includes a new building within the flood management area and earthworks within a flood management area. I have received comments from Ms Sheryl Keenan, Planning Engineer at Christchurch City Council (**Appendix G**), with regard to finished floor levels and earthworks generally, and from Mr Victor Mthamo, Planning Engineer at Christchurch City Council (**Appendix H**) with regard to effects relating to piping of the Lydia Street Drain and stormwater.
121. With respect to the supermarket building, Ms Keenan notes that while the ground floor exceeds the required floor level (19.50m where 19.49m is required), the basement car park will be below the required floor level (16.20m). Ms Keenan identified that the ramp down to the car park has a high point of 19.50m, which would theoretically mean it is no more likely to flood than the ground floor of a

building constructed to that height. In this instance, and taking into account the anticipated levels of flooding anticipated, it is expected that if any flooding was to enter the basement car park it would likely be a discrete volume due to wave action as opposed to full inundation. The Applicant has noted that the structure will be solid concrete and Ms Keenan is satisfied that a car park of this nature would generally be constructed and fitted out with durable materials. I accept this and consider that adverse effects as they relate to flooding of the basement car park will be no more than minor. Should the decision-maker determine to grant consent, I have recommended consent conditions in relation to flooding, which the Applicant has accepted. These require the basement car parking area be constructed of elements designed to withstand the impact of flood inundation and that electrical outlets and wiring be at least 1m higher than the finished floor level of the basement.

122. Ms Keenan has also assessed the effects of earthworks and resulting flood displacement on neighbouring sites. She has calculated flood water displacement as significantly less than what the Applicant has put forth and notes that the car park area on site will function as compensatory flood storage. Ms Keenan is of the opinion that flood displacement for the proposal would be significantly less than anticipated by the District Plan in this area and is not likely to result in any unacceptable effects to another property.
123. I have also asked for comments regarding the proposed partial piping of the Lydia Street Drain and how flooding may impact upon this (as opposed to the current box drain configuration). Ms Keenan has noted that “...*there is not considered to be any significant risk of ‘flooding’ along the waterway corridor (the upstream catchment is quite limited, flows would be expected to remain in channel unless a blockage or similar event was to occur and this doesn’t form part of the wider floodplain the downstream end (in 7 Northcote Road)*”. The proposal has also been reviewed by Mr Victor Mthamo, Planning Engineer at Christchurch City Council (**Appendix H**), who considers the capacity of the pipe to be sufficient to convey flows of the drain and that the approach proposed will sufficiently accommodate subsoil drainage requirements.
124. Having regard to the above, I consider adverse effects as they relate to flooding will be no more than minor.

### **Construction Phase Effects**

125. The proposal has been reviewed by Mr Bill Dray, Civil Engineer (Building Control) at Christchurch City Council with respect to proposed earthworks (**Appendix J**). Mr Dray has recommended a number of consent conditions to control the works, included at the end of this report and which the Applicant has accepted. This includes requirements relating to construction noise, erosion and sediment control, and vibration. I have amended these conditions slightly following consultation with the Applicant. Subject to compliance with the conditions, I consider that adverse earthworks effects as they relate to nuisance and land stability shall be less than minor.
126. With respect to amenity, I note that the proposed works will result in ground levels consistent with the surrounding land uses and consider adverse effects relating to such to be less than minor.

### **Effects on Street Trees**

127. The proposal has been reviewed by Mr John Thornton, Arborist Environmental Consents at Christchurch City Council, with respect to effects on street trees (**Appendix K**). Implementation of the proposed intersection design will require removal of three trees located in the road reserve. These consist of two Scarlet Oak trees (*Quercus coccinea*, ID 44401 and 44404) and a Silver Birch tree (*Betula pendula*, ID 44403). Felling of these trees requires resource consent under Rule 9.4.4.1.3 RD4

of the District Plan. In addition, earthworks will be required within 5m of a further street tree (*Quercus coccinea*, ID 44404), for which resource consent is required under Rule 9.4.4.1.3 RD8.

128. Mr Thornton notes that the Applicant has not provided an arborist report detailing effects of the proposed works on the remaining street trees, or a methodology for protecting those trees. Mr Thornton has recommended a number of conditions of consent relating to earthworks within 5m of the base of those trees and conditions requiring the planting of replacement trees within the road reserve to offset the proposed removals. I have amended these slightly and am satisfied that these conditions, combined with a number proposed by the Applicant, will be sufficient to mitigate adverse effects related to the street tree removal and earthworks within 5m of a street tree. The Applicant has agreed to these conditions.

### Stormwater

129. The proposal has been assessed by Mr Victor Mthamo (**Appendix H**), who is satisfied that the proposal will sufficiently address stormwater requirements. This includes with respect to the proposed piping of the Lydia Street Drain (including capacity of the pipe and subsurface drainage) and stormwater treatment and attenuation (which includes 225m<sup>3</sup> of attenuation provided via tanks and full first flush treatment for all trafficable hardstanding). Having regard to the assessment of Mr Mthamo, I am satisfied that the proposal will appropriately provide for stormwater requirements.

### Conclusion with respect to effects on the environment

130. In summary, it is my opinion that the proposal will result in adverse effects as they relate to urban design (including CPTED) that are more than minor, and in the case of transport, potentially significant. Adverse effects as they relate to economic / distributional effects, the Lydia Street Drain, noise, lighting, fumes, contamination, construction phase effects, street trees, and stormwater will be no more than minor and can be appropriately managed through consent conditions should the commissioner be of a mind to grant consent.

### Relevant Objectives, Policies, and other Provisions of a Plan or a Proposed Plan (S.104 (1)(b))

131. Regard must be had to the relevant objectives and policies in the Christchurch District Plan, which are attached in **Appendix T**. At a strategic level, as relevant to this proposal, the framework seeks: to enable recovery and facilitate future enhancement of the District; recognise the importance of business and economic prosperity to Christchurch's recovery; mitigate risks from natural hazards to people, property and infrastructure; provide for a well-integrated pattern of development and infrastructure with a consolidated urban form and high quality urban environment; enable rebuilding of existing business areas and revitalising centres; protect strategic infrastructure from incompatible development and activities by avoiding effects from them, and minimises conflicts between incompatible activities (and avoiding them where there may be significant adverse effects on the health, safety and amenity of people and communities).
132. Chapter 3 'Strategic Directions' contains a number of high level objectives to guide the recovery and future development of the City. Consistent with the approach taken by the Environment Court in *Fright v Christchurch City Council*<sup>7</sup> I will not make reference to the Strategic Objectives of the District Plan below, instead focussing on the framework as it relates to the matter specific chapters.

<sup>7</sup> [2018] NZEnvC 111. The Court determined that the wording of the Chapter 3 objectives is very general and are not intended to be applied on a case-by-case basis, but rather to be given effect to by the chapter specific objectives and policies.

## Commercial

133. The policy framework of the commercial chapter of the District Plan (Chapter 15) seeks commercial activity that is focussed within centres and urban design outcomes that are appropriate to the role of those centres. The framework sets out the roles of varying centres, requires development be consistent with those roles, and limits expansion beyond those centres. This is generally referred to as a 'centres-based' framework of commercial activity, recognising the Central City as the preeminent area for commercial activity, and the specific roles of the smaller-sized centres. Below I set out the objectives before assessing each policy as relevant to the proposal. Beforehand, I briefly discuss the Applicant's assessment.
134. The Applicant has provided assessment against the commercial policy framework within Section 8.8.4 of their Assessment of Environmental Effects. This acknowledges that the proposal is not consistent with the drive to focus commercial activity within centres. However, it highlights that the District Plan framework does not prohibit establishment of commercial activities outside a centre, and considers that where a commercial activity is not focussed in an existing centre it should pass the test of not undermining the outcomes sought by the centres-based approach. In an overall sense, the proposal, *"...while not entirely consistent with the abovementioned provisions, is not inconsistent with their overriding intent when considered in the context of the primacy afforded the Strategic Directions and the findings of the specialist economic and transport assessments"*.
135. The Applicant's objectives and policies assessment does not consider the proposal to be an expansion of a centre, with this framed as an out of zone activity adjacent to a Local Centre. As such, there is no consideration of the role the existing Local Centre is intended to play within the wider network or whether the proposal will change that role. The Applicant's planner has provided an assessment against the policy framework as it relates to the scale, form and design of development of centres, however, qualifies this by making clear that they view the majority of development as not within a centre. Notwithstanding that, they consider the proposal to result in an outcome that aligns with the policy framework for development within centres.
136. I do not agree with the Applicant's assessment in a number of respects, discussed below.

### **15.2.1 Objective - Recovery of commercial activity**

- a. *The critical importance of commercial activity to the recovery and long term growth of the City is recognised and facilitated in a framework that supports commercial centres.*

### **15.2.2 Objective - Centres-based framework for commercial activities**

- a. *Commercial activity is focussed within a network of centres (comprising the Central City, District Centres, Neighbourhood Centres, Local Centres and Large Format centres) to meet the wider community's and businesses' needs in a way and at a rate that:*
- i. *supports intensification within centres;*
  - ii. *enables the efficient use and continued viability of the physical resources of commercial centres and promotes their success and vitality, reflecting their critical importance to the local economy;*
  - iii. *supports the function of District Centres as major focal points for commercial activities, employment, transport and community activities, and Neighbourhood Centres as a focal point for convenience shopping and community activities;*
  - iv. *gives primacy to the Central City, followed by District Centres and Neighbourhood Centres identified as Key Activity Centres;*
  - v. *is consistent with the role of each centre as defined in 15.2.2.1 Policy – Role of centres Table 15.1;*
  - vi. *supports a compact and sustainable urban form that provides for the integration of commercial activity with community activity, residential activity and recreation activity in locations accessible by a range of modes of transport;*
  - vii. *supports the recovery of centres that sustained significant damage or significant population loss from their catchment, including the Central City, Linwood, and Neighbourhood Centres subject to 15.2.4.3 Policy Suburban centre master plans;*

- viii. *enhances their vitality and amenity and provides for a range of activities and community facilities;*
- ix. *manages adverse effects on the transport network and public and private infrastructure;*
- x. *is efficiently serviced by infrastructure and is integrated with the delivery of infrastructure; and*
- xi. *recognises the values of, and manages adverse effects on, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6 and natural waterways (including waipuna).*

137. The above objectives acknowledge the importance of commercial activity to the recovery and growth of the City, and seek a framework that supports co-location of commercial activities within centres. The importance of focussing commercial activity within centres is highlighted by the presence of its own objective - Objective 15.2.2 'Centres-based framework for commercial activities'. The location of most commercial activities within centres is important to support the function of those centres. While the location of a single commercial activity outside a centre may not adversely affect the function of that centre, and is provided for in certain circumstances, the dispersal of numerous activities holds the potential to undermine the overall approach.

138. While I do not intend to address each of the matters set out in Objective 15.2.2 here, considering this better approached through consideration of the policies intended to implement the objective, I do note the assessment provided by Mr Heath in **Appendix B** with respect to this. Mr Heath considers there to be support from an economic perspective within Objective 15.2.2:

- Matter (i) seeks commercial activity that supports intensification within centres. Mr Heath considers the proposal to achieve this. I do not share this view, noting the proposal represents expansion of an existing centre (discussed below), and that the application does not result in a higher density of use within the existing Local Centre;
- Matter (ii) enables the efficient use and continued viability of commercial centres and promotes their success and vitality. Mr Heath considers the proposal to achieve this. I accept that the proposal will promote the success and vitality of the existing Local Centre, noting that if consent is granted it will likely result in increased use of that centre, which is currently underutilised. However, I highlight that the majority of commercial activity proposed will be outside the existing Local Centre;
- Matter (iii) seeks commercial activity within a network of centres that supports the function of District Centres as major focal points, and Neighbourhood Centres as a focal point for convenience shopping and community activities. Mr Heath considers that the expanding of a Local Centre does not create issues from an economic perspective, noting that the convenience function will remain. Mr Heath is of the opinion that a centre can change its position in the centre's hierarchy if no other existing centre is adversely affected or has their role and function compromised or undermined from a retail economic perspective. He notes that there may be other planning related matters that are triggered by a centre's change in status, but that from an economic perspective there are no material resource management issues of concern. I accept that the proposal will not result in adverse effects on any District or Neighbourhood Centre, however, consider that the District Plan includes provisions that do constrain the ability to expand beyond an existing centre. I discuss this with respect to Policies 15.2.2.1 and 15.2.2.4 below.

#### **15.2.2.1 Policy - Role of centres**

- a. *Maintain and strengthen the Central City and commercial centres as the focal points for the community and business through intensification within centres that reflects their functions and catchment sizes, and in accordance with a framework that:*
  - i. *gives primacy to, and supports, the recovery of the Central City;*
  - ii. *supports and enhances the role of District Centres; and*
  - iii. *maintains the role of Neighbourhood Centres, Local Centres and Large Format Centres as set out in Policy 15.2.2.1, Table 15.1 - Centre's role.*

139. As discussed above, the proposal is not considered to adversely affect the function of the Central City or other higher order commercial centres in and of itself. However, in my view, neither does the proposal strengthen the roles of those centres as focal points or support intensification within those centres in a manner that reflects their functions. The proposal is for a large-scale retail activity and will result in the upscaling of a Local Centre (discussed below), resulting in expansion outside the existing centre's boundaries and a change in its function beyond that anticipated by the District Plan. This appears to be the fundamental distinction in the way myself and the Applicant's planner view this proposal. While I consider that the development as a whole will result in an expansion of the existing Local Centre, the Applicant seems to consider the supermarket separate from the Local Centre. I consider that such an interpretation does not lend itself in this circumstance (noting the site's location adjacent to a Local Centre) or within the context of Policy 15.2.2.4 (which contains specific provisions for expansion of commercial activity outside the commercial zoned land), discussed below.

140. Table 15.1 of Policy 15.2.2.1 sets out the parameters of a Local Centre:

*A small group of primarily convenience shops and, in some instances, community facilities. Accessible by walking, cycling from the area served and on a bus route in some instances. Also includes standalone supermarkets serving the surrounding residential community. The extent of the centre is the Commercial Local Zone, except Wainoni and Peer Street where the Commercial Core Zone applies.*

141. I highlight that the above role includes standalone supermarkets, however, the permitted size for a supermarket within the Commercial Local zone is 1,000m<sup>2</sup> Gross Leasable Floor Area. For comparison, the Net Floor Area for the proposed supermarket is 6,888m<sup>2</sup>. The size of local centres is set out in Table 15.1 as up to 3,000m<sup>2</sup>. I understand this calculation to refer to floor area. I consider this to be important for understanding the role of a Local Centre. Ostensibly the intent of a supermarket in a Local Centre is focussed on those of a size larger than a dairy but smaller than a full-scale supermarket. This is reflected by the inclusion of standalone supermarkets within the role of the centre, with these intended to serve the surrounding residential community rather than a wider area (as that being proposed would).

142. The role of a Neighbourhood Centre is broader in scope than a Local Centre, being:

*A destination for weekly and daily shopping needs as well as for community facilities. In some cases, Neighbourhood Centres offer a broader range of activities including comparison shopping, entertainment (cafes, restaurants and bars), residential activities, small scale offices and other commercial activities. Anchored principally by a supermarket(s) and in some cases, has a second or different anchor store. Serves the immediately surrounding suburbs and in some cases, residents and visitors from a wider area. Medium density housing is contemplated in and around the centre. Accessible by a range of modes of transport, including one or more bus services. The extent of the centre:*

- a. is the Commercial Core Zone in the identified centres, Commercial Local Zone at Wigram and Beckenham and Commercial Banks Peninsula Zone at Lyttelton and Akaroa; and*
- b. Community facilities within walking distance (400 metres) of the centre.*

143. Neighbourhood Centres are larger in the scale of activities they provide (including community facilities) and land area (with this between 3,000m<sup>2</sup> and 30,000m<sup>2</sup> floor area). The application site will include a number of activities including the existing and permitted commercial activities within the Local Commercial zone, a supermarket, petrol station, and the lawfully established Foodstuff's head offices. The Applicant has set out its function as an emergency coordination facility. I note that this falls within

the definition of 'emergency service facility'<sup>8</sup>, which in turn falls within the definition of 'community facilities'<sup>9</sup>. While I acknowledge this, as well as the function the emergency component of the proposal can play within a disaster, I have not placed a large amount of weight on that function within the context of its day to day commercial operation for the purposes of considering the role of the resulting centre.

144. The Independent Hearings Panel did not consider Foodstuff's proposal to rezone the Industrial zoned land to Commercial Core to result in an outcome consistent with a Neighbourhood Centre. The Panel considered: *"Fundamentally, a Neighbourhood Centre is much more than a retail destination. It is a community focal point that provides also for other community activities, as the CPRS makes clear"*. The Panel held their position that a supermarket on the site would fall short of what a Neighbourhood Centre ought to provide even if the neighbouring activities were taken into account.
145. I share the opinion of the Hearings Panel; I do not consider the proposal will result in a centre that will fulfil all the functions of a Neighbourhood Centre. It will serve some of those functions, particularly the commercial functions, however, will not include community facilities in its day to day operation. While I do not consider the proposal to result in an outcome consistent with the role of the Neighbourhood Centre, neither will it be consistent with that for a Local Centre.
146. With regard to size, the existing buildings on the Local Centre zoned land have an area of approximately 900m<sup>2</sup>. The proposed supermarket will have a net floor area of 6,888m<sup>2</sup>. The existing Foodstuffs Head Offices have a floor area of approximately 6,435m<sup>2</sup>. This will result in a total area of commercial / office use within the application site of approximately 14,223m<sup>2</sup>, some 4.5 times larger than the upper size limit of a Local Centre (2.5 times larger when the existing Foodstuffs Offices are excluded). The description of a Neighbourhood Centre sets out a size up to 30,000m<sup>2</sup>, with which this size will accord.
147. This proposal is essentially seeking an additional 16,625m<sup>2</sup> of land not zoned or lawfully used for commercial / office activities be consented for commercial use (including parking areas, access, etc.). This would bring the total land area of commercial and office use in the application site to approximately 43,671m<sup>2</sup> and total floor area to approximately 14,223m<sup>2</sup>.
148. On page 73 of their AEE, the Applicant's agent contends that granting the proposal would *"...in fact promote the success of and vitality of the existing Local Centre on the site"*. While I agree that the success of commercial activities within the Local Centre would likely be supported by granting the proposal, the statement obfuscates the fact that should consent be granted, the function of the centre will expand beyond that of a Local Centre. Such is not consistent with Policy 15.2.2.1 'Role of centres'. Importantly, the policy seeks intensification *within* centres that reflects their functions and catchment sizes and *maintains* the role of Neighbourhood Centres, Local Centres, and Large Format Centres. The proposal will result in expansion of a centre beyond its current boundaries and change its role beyond what is anticipated for Local Centres.

#### **15.2.2.4 Policy - Accommodating growth**

- a. Growth in commercial activity is focussed within existing commercial centres.
- b. Any outward expansion of a commercial centre must:
  - i. ensure the expanded centre remains commensurate with the centre's role within a strategic network of centres, while not undermining the function of other centres;
  - ii. be integrated with the provision of infrastructure, including the transport network;

<sup>8</sup> "means the facilities of authorities that are responsible for the safety and welfare of people and property in the community. It includes fire stations, ambulance stations, police stations and emergency coordination facilities."

<sup>9</sup> "means any land and/or buildings used for community activities or education activities. Community facilities include reserves, recreation facilities, libraries, community infrastructure such as community halls, health care facilities, care facilities, emergency service facilities, community corrections facilities, community welfare facilities and facilities used for entertainment activities or spiritual activities. Community facilities exclude privately (as opposed to publicly) owned recreation facilities, entertainment activities and restaurants."

- iii. *be undertaken in such a manner that manages adverse effects at the interface with the adjoining zone; and*
- iv. *be consistent with:*
  - A. *the scale of increasing residential development opportunities to meet intensification targets in and around centres, and*
  - B. *revitalising the Central City as the primary community focal point.*

149. In my view, the proposal does not focus growth of commercial activity within an existing commercial centre, being an outward expansion of a centre. I note that the term 'commercial centres' is underlined in this instance, with the District Plan defining this term as: "...district centres, neighbourhood centres, local centres and large format centres zoned Commercial Core, Commercial Local, Commercial Banks Peninsula and/or Commercial Retail Park". In this instance, the Local Centre on site is the small area in the northeast corner zoned Commercial Local. I accept that use of the word 'focussed' in clause (a) provides for some commercial activity outside of centres, however, the majority is intended to be within existing centres. For clarity, I do not consider the scale of commercial activity proposed outside the existing centre to find support within clause (a); it will not focus commercial activity within an existing commercial centre.
150. Where an activity seeks to expand beyond the boundaries of an existing commercial centre, that growth is further constrained by clause (b). This clause is relevant to "Any outward expansion of a commercial centre..." I note that 'commercial centre' is underlined and the above definition sets a clear delineation at to the extent of the Local Centre on this site (being that zoned Commercial Local). In my opinion, the current proposal would see commercial activity expand outward of the existing Local Centre into Industrial General zoned land. I understand the Applicant's planner holds a different position, having noted in conferencing that Local Centres are defined within the District Plan as: "...those areas zoned Commercial Local (excluding those areas at Beckenham and Wigram that are zoned Commercial Local but are characterised as a neighbourhood centre) and Commercial Core at Wainoni and Peer Street". They contend that Local Centres cannot expand outside the area zoned Commercial Local as the definition does not provide for the centre to be in any area other than that zoned Commercial Local. I understand that they prefer the interpretation that the proposal is for an out of zone activity next to a Local Centre. I do not agree with this interpretation, noting that the definitions of Neighbourhood<sup>10</sup> and District Centres<sup>11</sup> also use zoning to set out the extent of existing centres and that clause (b) relates to 'outward expansion', which must occur beyond the areas delineated for the centre. In my view, clause (b) is intended to be relevant to exactly this situation, where commercial activity is proposed at the edge of an existing centre and will result in expansion of that centre.
151. By expanding the commercial activity beyond the Local Centre to include that now proposed, the application is contrary to policy (b)(i). This policy requires any expansion of a centre *must ensure* it remains *commensurate* with the centres role within the strategic network of centres, *while* not undermining the function of other centres. I note the directive wording used in the main clause of (b)(i) as of importance in interpreting the weight to be placed on this ('ensure').
152. The Oxford English Dictionary defines 'commensurate' as: "*Having the same measure; of equal extent, duration, or magnitude; coextensive*", "*Of corresponding extent, magnitude or degree; proportionate, adequate*", "*Corresponding in nature (with, to); belonging to the same sphere or realm of things*", and

<sup>10</sup> "Means:

- a. *the Commercial Core Zone at Addington, Aranui, Avonhead, Bishopdale, Bush Inn/Church Corner, Colombo/Beaumont, Cranford, Edgware, Fendalton, Ferrymead, Halswell, Ilam/Clyde, Merivale, New Brighton, North West Belfast, Parklands, Prestons (emerging), Redcliffs, Richmond, Stanmore/Worcester, Spreydon (Barrington), St Martins, Sumner, Sydenham, Sydenham South, Wairakei/Greers Road, West Spreydon (Lincoln Road), Wigram (emerging), Woolston and Yaldhurst (emerging);*
- b. *the Commercial Local Zone at Beckenham and Wigram; and*
- c. *the Commercial Banks Peninsula Zone at Lyttelton and Akaroa."*

<sup>11</sup> "*in relation to Chapter 15 Commercial, means the Commercial Core Zone and, where applicable, the Commercial Retail Park Zone at Belfast/Northwood (emerging), Eastgate/Linwood, Hornby, North Halswell (emerging), Papanui/Northlands, Riccarton and Shirley/Palms."*

*“Characterized by a common measure”*. I have given consideration to whether the expansion of an existing centre as proposed will allow for that centre to remain commensurate with its initial role. I am of the opinion that the above definitions do not allow for such an interpretation. Policy 15.2.2.4(b) provides for expansion of existing centres in a very limited sense, with an expectation that such expansion will not be of such a scale or nature as to change the role the centre fills within the wider framework of centres. This interpretation is supported by the wording used in Objective 15.2.2 and Policy 15.2.2.1, seeking commercial activity that is *consistent with* and *maintains* the role of existing centres.

153. I do not consider the proposed expanded centre to be commensurate with the role of a Local Centre within the network of centres, being something between a Local and Neighbourhood Centre and fulfilling the role of neither. Granting of this application would result in activities taking place on site that are of a significantly different character and scale than what is anticipated for a Local Centre.
154. The question of whether other centres are adversely affected by this proposal is of little relevance within the context of Policy 15.2.2.4(b)(i), as this requirement forms a subordinate clause that is only relevant where the main clause is met. For clarity, I do not consider the proposal to undermine the function of other centres in and of itself, however, retain concerns relating to precedent and how granting of this consent may undermine the centres-based framework.
155. The proposal is generally integrated with the provision of infrastructure, with the exception of the transport network (matter (b)(ii)). The transport network is discussed in more depth below, however, I highlight the comments from Mr Gregory with respect to the transport network and do not consider that sufficient information has been provided to show that the proposal will be suitably integrated with it. While timing of the development will see operation occur after opening of the Christchurch Northern Corridor, which will change how the transport network functions in this area, there is a lack of integration with the future upgrading of Northcote Road. I also note ambiguity relating to integration with public transport, and the pedestrian connections from public transport stops, as well as into / out of and within the application site.
156. I accept that the proposal will be undertaken in a manner that generally manages adverse effects on the interface with the adjoining residential zones and consider that these effects can be appropriately managed through consent conditions (matter (b)(iii)). I consider that there will be minimal effects on the industrial zoned site to the west, and note the submission from the Catholic Diocese in support of the application.
157. Matter (b)(iv) relates to residential intensification and the Central City, and is not particularly relevant to this application.
158. I consider the proposal to be contrary to Policy 15.2.2.4 ‘Accommodating growth’ as the proposed expansion will change the commercial activity beyond its role as a Local Centre. For clarity, I do not consider the proposal to find support in either clause (a) or clause (b) of Policy 15.2.2.4. I do not consider that locating a supermarket some 6,888m<sup>2</sup> in area to be consistent with the drive to locate commercial activity within existing commercial centres (clause a). When considered within the context of the type of supermarket development anticipated within the adjacent Local Centre, that proposed is some 6.8 times as large as what is permitted. When considered as an outward expansion of the existing Local Centre, I do not consider the proposal to result in an outcome consistent with that Centres role (clause b). I also note the concerns raised with respect to integration with the transport network. I accept that the proposal meets some of the criteria set out in clause b, however, highlight that the policy mandates the achievement of each.

#### **15.2.4 Objective - Urban form, scale and design outcomes**

- a. A scale, form and design of development that is consistent with the role of a centre, and which:
    - i. recognises the Central City and District Centres as strategically important focal points for community and commercial investment;
    - ii. contributes to an urban environment that is visually attractive, safe, easy to orientate, conveniently accessible, and responds positively to local character and context;
    - iii. recognises the functional and operational requirements of activities and the existing built form;
    - iv. manages adverse effects on the surrounding environment; and
    - v. recognises Ngāi Tahu/ mana whenua values through landscaping and the use of low impact urban design, where appropriate.
159. Objective 15.2.4 seeks a scale of urban form and design of development that is consistent with the role of a centre and is implemented through Policies 15.2.4.1 'Scale and form of development' and 15.2.4.2 'Design of new development'. I discuss each policy below in turn.

#### **15.2.4.1 Policy - Scale and form of development**

- a. Provide for development of a significant scale and form in the core of District Centres and Neighbourhood Centres, and of a lesser scale and form on the fringe of these centres.
  - b. The scale and form of development in centres shall:
    - i. reflect the context, character and the anticipated scale of the zone and centre's function;
    - ii. increase the prominence of buildings on street corners;
    - iii. for Local Centres, maintain a low rise built form to respect and integrate with their suburban residential context;
    - iv. for Key Activity Centres and Large Format Centres, enable larger floor plates while maintaining a high level of amenity in the centre; and
    - v. manage adverse effects on the surrounding environment, particularly at the interface with residential areas, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6 and natural waterways.
160. Policy 15.2.4.1 'Scale and form of development' seeks to strengthen District and Neighbourhood Centres by locating development of a significant scale within the core of those, with buildings of lesser scale on the periphery of the centres. It also seeks specific outcomes in the scale and form of development within centres.
161. With regard to Policy 15.2.4.1(a), the clause is enabling in nature, seeking development of significant scale be located within the core of District and Neighbourhood Centres, with those of a lesser scale and form to be located on the fringe of those centres. The proposal will result in significant scale and form outside of an existing / on the periphery of an expanded Local Centre. As such, I do not consider the proposal to find support in this clause.
162. As discussed, I have adopted the approach that this proposal represents the expansion of a Local Centre beyond the role intended within the District Plan. I consider Policy 15.2.4.1(b) to be relevant. I do not consider the proposal to represent an outcome consistent with the context, character, or anticipated scale of the function of a Local Centre, for the reasons outlined above (matter i). If one were to consider the development within the context, character and scale of the underlying Industrial General Zone, the scale of built form is generally consistent with that anticipated but the character of the activity is fundamentally different. The Industrial General Zone provides for the scale of built form proposed (as shown by compliance with the built form standards), however, it does not anticipate the type of activities proposed. This has implications with respect to the transport network, pedestrian access, and CPTED.
163. The proposal does not seek to change existing buildings on street corners (matter ii). In terms of 'low rise built form' I note that the proposed supermarket is double storey and, noting the underlying zoning and receiving environment, do not consider it to be out of scale with the surrounding suburban residential context (matter iii). Matter iv is not relevant to this proposal. With respect to managing adverse effects on the surrounding environment I refer to my above assessment of effects, noting that

there are concerns with respect to urban design and transport, but less so with respect to the interface with residential areas.

164. Overall, I consider the proposal to be inconsistent with Policy 15.2.4.1. It does not locate development of a significant scale within the core of an existing District or Neighbourhood Centre. While the scale of built form is consistent with what one could expect in the Industrial General Zone the characteristics of the activity are different from what is anticipated for that zone. I do not consider the proposal to be consistent with the context, character, or scale of a Local Centre or the underlying Industrial General zoning.

**15.2.4.2 Policy - Design of new development**

- a. *Require new development to be well-designed and laid out by:*
- i. *encouraging pedestrian activity and amenity along streets and in adjoining public spaces, to a degree that is appropriate to the location and function of the road;*
  - ii. *providing a principal street facing façade of visual interest that contributes to the character and coherence of a centre;*
  - iii. *facilitating movement within a site and with the surrounding area for people of all mobilities and ages, by a range of modes of transport through well-defined, convenient and safe routes;*
  - iv. *enabling visitors to a centre to orientate themselves and find their way with strong visual and physical connections with the surrounding area;*
  - v. *promoting a safe environment for people and reflecting principles of Crime Prevention through Environmental Design (CPTED);*
  - vi. *enabling the re-use of buildings and sites while recognising the use for which the building is designed;*
  - vii. *incorporating principles of low impact design including energy efficiency, water conservation, the reuse of stormwater, on-site treatment of stormwater and/or integration with the wider catchment based approach to stormwater management, where practicable;*
  - viii. *achieving a visually attractive setting when viewed from the street and other public spaces, while managing effects on adjoining environments; and*
  - ix. *providing adequate and convenient space for storage while ensuring it is screened to not detract from the site's visual amenity values.*
- b. *Recognise the scale, form and design of the existing built form within a site and the immediately surrounding area and the functional and operational requirements of activities.*
- c. ...
165. Policy 15.2.4.2 sets requirements for development of commercial activities, requiring it to be well-designed and laid out in a manner that will create an area with high visual interest, provides for movement, is connected to the surrounding area, is safe, incorporates low impact design, achieves an attractive setting, recognises the existing built form within a site and the immediately surrounding area, and recognises the functional and operational requirements of the activities.
166. With regard to the matters set out in (a)(i) to (ix) I consider the following:
- The proposal will provide some benefit to pedestrian activity along Main North Road, with the installation of a signalised intersection providing for movement from the eastern side of the road into the application site. However, the pedestrian crossing over the main vehicle entrance proposed will require movement across three separate traffic areas. Pedestrian movement into the site from Main North Road is suitable for the northern pedestrian access, but not for the southern access. While not a public space, the pedestrian access via Lydia Street raises some concerns, as does the area between the supermarket and 2 Lydia Street. At a wider scale, the site is not well integrated with the surrounding area, noting the high walking times for site's within relatively close proximity.
  - The eastern elevation of the supermarket will provide the principal street facing façade. As noted by Mr Hattam, the visual interest of this is acceptable, rather than of high quality, but reduced with the location of the petrol station at the front of the site and by the yellow parapet on which the principal sign is affixed.

- Landscaping along the road boundary will provide amenity benefits along Main North Road. Having regard to the function of Main North Road and the underlying zoning for the site the proposal will result in an appropriate level of amenity on the whole from a landscaping perspective.
  - As discussed above, there are key concerns with pedestrian movements into / out of and within the site, largely related to the southern entrance from Main North Road and the rear of the site. Mr Hattam has raised concerns with the connection between the Foodstuffs head office and supermarket building, however, I consider this a lesser concern.
  - I do not have concerns with the ability for visitors to orientate themselves within the site or surrounding area.
  - There are concerns with the rear of the site and Lydia Street pedestrian connection with regard to CPTED. However, it is considered that these can likely be addressed.
  - The proposal will see the use of an underutilised industrial site. It may also encourage reuse of the existing vacant buildings on that part of the site zoned Commercial Local.
  - The proposal will include appropriate stormwater management (discussed below).
  - Mr Hattam harbours concerns over whether the proposal will result in a visually attractive setting when viewed from the street and other public spaces. The key concerns from Mr Hattam in this respect appear to be the service station at the front of the site, the yellow parapet on the supermarket building, and the large setback of the building.
  - The proposal accommodates space for storage within the proposed supermarket building and to the rear of that building (within an enclosed area).
167. Overall, the proposal is inconsistent with aspects of Policy 15.2.4.2(a). Chief concerns relate to pedestrian connections and CPTED. There are concerns with the visual outcomes of the proposal when assessed against the commercial provisions of the District Plan, however, these need to be tempered through acknowledgement of the underlying Industrial General zoning.
168. Mr Hattam has identified that there is a lack of continuity with the existing built form on the application site (being the Foodstuffs head office to the south and Commercial Local zone to the north) and is of the opinion that bringing the building forward to be in line with the Head Offices building would be a more appropriate outcome. This is a valid point, however, I consider that the application needs to be considered within the context of the site's zoning. I acknowledge that the proposal provides for the functional and operational requirements of the activities (and have taken this into account, particularly with respect to the lack of an internal pedestrian connection between the supermarket and Foodstuffs head office).
169. I consider the proposal to be inconsistent with Policy 15.2.4.2 in the round, however, acknowledge that it attains aspects of it and that other aspects may be less of relevance. In my view the key concerns relate to the pedestrian connections and safety.

#### Conclusion as to the Commercial Framework

170. Overall, I consider the proposal does not support the centres-based framework of commercial centres set out in Objective 15.2.1, Objective 15.2.2, and the relevant Policies 15.2.2.1 and 15.2.2.4. I am of the opinion that granting of the proposal will undermine the overall thrust of the framework and will result in expansion of a centre beyond its intended role. I consider the granting of this out of zone activity has the potential to undermine intensification within centres and damage viability of the centres-based approach. I am particularly concerned with issues of precedent and plan integrity, which I discuss further below.
171. Objective 15.2.4 and Policies 15.2.4.1 and 15.2.4.2 focus on the scale, form and design of commercial development. I do not consider the proposal to result in a scale, form or design that is consistent with the role of the existing Local Centre. Neither does the proposal recognise District Centres as strategically important focal points for community and commercial investment – noting that the proposal

will see the removal of an existing supermarket from a District Centre / Key Activity Centre to an out of centre location. I am of the opinion that it does not sufficiently achieve key design outcomes. The proposal does recognise the functional and operational requirements of the activities, manages adverse effects on the surrounding environment to a degree, and utilises locally sourced indigenous species within landscaping.

172. Overall, I do not consider the proposal to find support within the commercial objectives and policies of the Christchurch District Plan. As discussed, I consider the proposal to result in expansion of a commercial centre beyond its intended role, an outcome that is contrary to Policy 15.2.2.4.

## **Industrial**

173. The policy framework of the Industrial Chapter of the District Plan (Chapter 16) seeks to provide for activities within specific industrial zones that meet the role of those zones, while providing for some limited non-industrial activities. Provision of non-industrial activities must ensure that establishment or ongoing operation or development of industrial activities and strategic infrastructure are not hindered or constrained, and that the activities will not adversely affect the strategic role of the Central City, District Centres, or Neighbourhood Centres.
174. The Applicant has provided assessment against the industrial objectives and policies within Section 8.4.5 of their Assessment of Environmental Effects. They consider the proposal is not inconsistent with the policy framework when considered in the round and in the context of the overarching direction of the District Plan.

### **16.2.1 Objective - Recovery and growth**

- a. *The recovery and economic growth of the district's industry is supported and strengthened in existing and new greenfield industrial zones.*

#### **16.2.1.1 Policy - Sufficient land supply**

- a. *Maintain a sufficient supply of industrial zoned land to meet future demand up to 2028, having regard to the requirements of different industries, and to avoid the need for industrial activities to locate in non-industrial zones.*
175. I accept the assessments provided by the Applicant's and Council's economic specialists with regard to the more-than-sufficient supply of industrial land and consider the proposal to be consistent with Policy 16.2.1.1 'Sufficient land supply'.

#### **16.2.1.2 Policy - Enable the development of industrial areas to support recovery**

- a. *Encourage the redevelopment of existing industrial zones for industrial activities, particularly in areas that have lost industry and associated employment opportunities due to the earthquakes.*
176. I do not consider the proposal to be consistent with Policy 16.2.1.2 as it will result in industrial zoned land being used for non-industrial activities. However, I also note that the policy is enabling in nature, not particularly strongly worded (i.e. use of the term 'encourage' rather than 'ensure'), and that there are other policies that provide for non-industrial uses. While the proposal will not encourage redevelopment of existing industrial zones for industrial activities, this inconsistency is not fatal to the application.

#### **16.2.1.3 Policy - Range of industrial zones**

- a. *Recognise and provide for industrial zones with different functions that cater for a range of industrial and other compatible activities depending on their needs and effects as follows:*
- i. *Industrial General Zone*

- A. *Recognise and provide for industrial and other compatible activities that can operate in close proximity to more sensitive zones due to the nature and limited effects of activities including noise, odour, and traffic, providing a buffer between residential areas and the Industrial Heavy Zone.*

ii. ...

177. Policy 16.2.1.3(a)(i)(A) seeks industrial and other compatible activities occur on land zoned Industrial General. These compatible activities are set out in the permitted activities section of Chapter 16 for the Industrial General Zone, and include petrol stations. The phrasing of the policy requires the activity be compatible with both the Industrial Zoning and the neighbouring, more sensitive, zones (noting the Industrial General zoning).
178. I am of the opinion that the proposal will be compatible with 2 Lydia Street to the rear of the site (being the only other site zoned Industrial General). I note the intention for 2 Lydia Street to be developed as a school, however, am unable to give this weight and so have considered its use for industrial activities. The proposal will locate loading and warehousing type activities at the rear of the site, next to 2 Lydia Street.
179. With regard to more sensitive zoning, I consider that supermarkets are not anathema to residential activities, although highlight the matters raised in the submissions of some nearby residents with regard to noise and traffic. I am of the opinion that subject to appropriate conditions of consent (e.g. relating to noise, construction phase effects), the activity will be appropriate with respect to the adjacent Residential Suburban zoning.
180. Notwithstanding the above, I note that the proposal will result in a large number of traffic movements. These are far in excess of what could be anticipated for a permitted industrial activity. The proposal will not result in 'limited effects' with regard to traffic.

#### **16.2.1.4 Policy - Activities in industrial zones**

- a. *Maintain and support the function of industrial zones while, subject to Clauses (b) and (c), providing for limited non-industrial activities that:*
  - i. *are ancillary in scale (subject to Clause (d)) and on the same site as a permitted or consented activity;*
  - ii. *are not appropriate in more sensitive environments due to their potential noise, odour or other environmental effects;*
  - iii. *comprise yard based supplier or trade suppliers in the Industrial General Zone;*
  - iv. *provide an emergency service and/or provide for community activities;*
  - v. *support the needs of workers and businesses in the zone including food and beverage outlets, commercial services, and the care of children;*
  - vi. *meet the convenience needs of residents, workers and businesses in the Industrial General Zone (Waterloo Park) in a Local Centre;*
  - vii. *are rural activities associated with the irrigation of food processing wastewater in the identified area of the Industrial Heavy Zone (South West Hornby) (Appendix 16.8.8) that is integral to the ongoing operation of an established industrial activity.*
- b. *Avoid any activity in industrial zones with the potential to hinder or constrain the establishment or ongoing operation or development of industrial activities and strategic infrastructure. This includes but is not limited to avoiding:*
  - i. *sensitive activities located within the 50 dB L<sub>dn</sub> Air Noise Contour, the Lyttelton Port Influences Overlay Area and in proximity to the National Grid;*
  - ii. *discretionary or non-complying activities in close proximity to bulk fuel storage facilities unless a quantitative risk assessment establishes that the proposed activity in its location meets risk acceptability criteria appropriate to the applicable land use. (Plan Change No. 1)*
- c. *Avoid the use of industrial zones for non-industrial activities that could adversely affect the strategic role of the Central City, District Centres and Neighbourhood Centres as focal points for commercial activities, community activities, residential activities, and other activities.*
- d. *Provide for ancillary activities, recognising their role in supporting industry, while being incidental in scale and function to a principal activity on the same site, and not inconsistent with Clauses b. and c.*

181. Policy 16.2.1.4 seeks to maintain and support the function of industrial zones while providing for some non-industrial activities. Importantly, where the activity is non-industrial, the matters set out in (a) are subject to those of clauses (b) and (c). The directive nature of the wording used in clauses (b) and (c) set prescriptive requirements for any non-industrial activity.
182. I do not consider the supermarket use proposed to fall within the parameters of the non-industrial uses set out in Policy 16.2.1.4(a), which align with the permitted activities for the Industrial General Zone:
- I do not consider the proposal to be ancillary to a permitted or consented activity (matter i);
  - I do not consider the proposal to be inappropriate in more sensitive environments, noting that the Commercial Core Zone provides for the type of development proposed (matter ii);
  - The activity proposed is not a yard based supplier or trade supplier (matter iii);
  - Matter iv provides for non-industrial activities that either provide an emergency service and / or provide community activities. I accept that a component of the proposal can provide a function during emergencies. I consider the intent of this policy is to provide for fire stations, ambulance stations, etc. where the primary function is to provide an emergency service. This interpretation is supported by the permitted status for emergency service facilities. However, I also acknowledge that there is ambiguity in the phrasing used (with no definition of 'emergency service') and that the proposal has been designed to provide an emergency service function during disaster. I highlight the small component of that emergency function within the context of the commercial functions.
  - I do not consider the proposal to meet the needs of workers or businesses in the Industrial General zone, noting that subject to this consent and the stated desire of the Catholic Diocese with respect to 2 Lydia Street, the surrounding area will retain no industrial uses (matter v).
  - Matters vi and vii are not relevant to this proposal.
183. With respect to Policy 16.2.1.4(b), I do not consider the proposal to hinder or constrain industrial activities, however, highlight the concerns of Mr Gregory with respect to effects on the traffic network. For clarity, the District Plan definition of strategic infrastructure includes strategic transport networks, which includes state highways and major arterial roads, in this case being Northcote Road, QEII, and Main North Road north of the intersection of these roads. In light of the traffic assessment received, I am of the opinion that the Applicant has not adequately demonstrated that the proposal will not hinder or constrain the strategic transport network. The policy requires non-industrial activities be *avoided* where there is the *potential* to hinder<sup>12</sup> or constrain<sup>13</sup> the ongoing operation or development of such infrastructure. This sets a high threshold which, in light of the assessment provided by Mr Gregory and the peer review undertaken by Quality Transport Planning, I cannot conclude has been met.
184. With respect to (c), I consider that the proposed use, in isolation, will not adversely affect the strategic role of the Central City, District Centres, or Neighbourhood Centres as focal points. As per the above, I retain concerns with respect to precedent and plan integrity, which I discuss below.
185. Matter (d) provides for ancillary activities, while being incidental in scale and function to the principal activity and not inconsistent with matters (b) and (c). The proposed offices within the supermarket could be considered under this.
186. Overall, I consider the proposal to be contrary to Policy 16.2.1.5 as the advice I have received from Council's transport engineer does not enable an interpretation that the proposal will demonstrably not

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<sup>12</sup> Defined in the Oxford English Dictionary as: "To keep back, delay, or stop in action; to put obstacles in the way of; to impede, deter, obstruct, prevent".

<sup>13</sup> Defined in the Oxford English Dictionary as: "To compel or enforce (an action, etc.); to bring about by compulsion or of necessity".

hinder or constrain the strategic transport network. There appears to be potential for such to be adversely affected, based on the information available at this time.

#### **16.2.1.5 Policy - Office development**

- a. Avoid office development in industrial areas other than where it is:
    - i. ancillary to a permitted or consented activity on the same site (subject to Policy 16.2.1.4 (d));
    - ii. a secondary component to a high technology industrial activity located in the Industrial Park Zone that supports the function of the zone for primarily industrial activities.
187. The proposal will include offices ancillary to the supermarket use. As such, matter (i) is relevant and provides for offices ancillary to a (possible) consented activity, subject to Policy 16.2.1.4(d). I am satisfied that the office component will be ancillary to the supermarket use. Policy 16.2.1.4(d) requires activities not be inconsistent with clauses (b) and (c) of that same policy. The proposed supermarket offices will not be inconsistent with clauses (b) or (c) in and of themselves. I consider this better considered for the application as a whole, and refer to the above assessment against Policy 16.2.1.4.

#### **16.2.2 Objective - Brownfield redevelopment**

- a. The recovery and economic growth of the Christchurch District is provided for by enabling redevelopment, including mixed-use development, of appropriate brownfield sites while not compromising the function of the wider industrial area for primarily industrial activities.

Advice note:

1. 16.2.2 Objective - Brownfield development and 16.2.2.1 Policy - Brownfield site identification and 16.2.2.2 Policy - Brownfield redevelopment are the only objective and policies in the Industrial Chapter to be considered for any proposal for residential or mixed-use development of a brownfield site.

#### **16.2.2.1 Policy - Brownfield site identification**

- a. Unless a site is identified by a 'brownfield' overlay on the planning maps, a brownfield site shall meet the following criteria:
    - i. the land is abandoned or underutilised industrial land, or no longer required by a requiring authority for a designated purpose; and
    - ii. the redevelopment of the brownfield site will not adversely affect the supply of land to meet anticipated needs of industrial activities to 2028, including industrial activities with specific locational requirements; and
    - iii. the brownfield site is in a location that is not surrounded by industrial activities and/or will not erode the anticipated outcomes, including the function and amenity levels, of those parts of the zone not subject to brownfield redevelopment.
188. The District Plan definition of 'brownfield' "means abandoned or underutilised commercial or industrial land, or land no longer required by a requiring authority for a designated purpose". I agree with the Applicant that the site can be considered to meet this definition.

#### **16.2.2.2 Policy - Brownfield redevelopment**

- a. Support the redevelopment of brownfield sites for residential activities or mixed use activities including a limited quantum of commercial activities.
- b. Brownfield regeneration proposals shall ensure that:
  - i. any residential or mixed use development will not give rise to reverse sensitivity effects on existing industrial activities, or other effects that may hinder or constrain the establishment or ongoing operation or development of industrial activities and strategic infrastructure;
  - ii. the safety and efficiency of the current and future transport system is not significantly adversely affected;
  - iii. an appropriate level of residential amenity can be achieved on the site;
  - iv. the site enhances connectivity to public transport routes, commercial and community services, and open space where appropriate;
  - v. any contaminated land is managed in accordance with national and regional standards;
  - vi. the redevelopment maintains the strategic role of commercial centres as the focal points for commercial and other activities, and the efficient and effective use of land and/or community and transport infrastructure investment in centres; and
  - vii. the environmental and cultural values of waterways within or adjoining the site are recognised and provided for in any redevelopment.

189. The Applicant's AEE states that the application is not being put forward as a brownfield redevelopment. I agree that it should not be considered as such, which is restricted to residential activities or mixed use activities<sup>14</sup>, including a limited quantum of commercial activities. I do not consider the proposal to accord with clause (a), noting that the application is for a large quantum of commercial activities, with a limited function outside that which may be implemented during times of disaster.

### **16.2.3 Objective - Effects of industrial activities**

- a. *Adverse effects of industrial activities and development on the environment are managed to support the anticipated outcome for the zone while recognising that sites adjoining an industrial zone will not have the same level of amenity anticipated by the Plan as other areas with the same zoning.*
  - b. *The cultural values of Ngāi Tahu/ mana whenua are recognised, protected and enhanced through the use of indigenous species in landscaping and tree planting, a multi-value approach to stormwater management in greenfield areas, low impact urban design, and the protection and enhancement of wāhi tapu and wāhi taonga including waipuna.*
190. Objective 16.2.3 refers to adverse effects of industrial activities and development. It is not clear from the wording of this objective whether it (and the attendant policies which implement the objective) apply only to *industrial* activities and *industrial* development, or to *industrial* activities and *any type* of development. The title of the objective and wording within part (a) suggests this is limited to only industrial activities and industrial development. This interpretation is supported by the presence of other policies within the Industrial Chapter that deal with non-industrial activities (although I note these do not cover the same matters). However, the wording of Policy 16.2.3.2 'Managing effects on the environment' is, in places, sufficiently broad to encapsulate both industrial activities and non-industrial development on industrially-zoned land (e.g. Policy 16.2.3.2(a), (c), (d), and (e))<sup>15</sup>. It is not clear how this framework should be applied in this instance, noting that the proposal is not industrial in nature. Taking a conservative approach I have assessed Objective 16.2.3 and Policies 16.2.3.2 and 16.2.3.3 below.
191. I discuss adverse effects of the proposed activities on the environment below, however, consider it important to highlight that the nature of the proposed activity in some ways provides a better outcome than permitted industrial activities, particularly with regard to neighbouring residential amenity. This does not hold true in all respects, however, and I consider that the industrial activities provided for on this site would not result in the number of people visiting the site (and associated effects relating to traffic movements, pedestrian movements, and CPTED).
192. I note that the proposal does include planting of a significant number of indigenous specimens, and a multi-value approach to stormwater management. The site is not identified as of cultural significance to Ngāi Tahu.

### **16.2.3.2 Policy - Managing effects on the environment**

- a. *The effects of development and activities in industrial zones, including reverse sensitivity effects on existing industrial activities as well as, visual, traffic, noise, glare and other effects, are managed through the location of uses, controls on bulk and form, landscaping and screening, particularly at the interface with arterial roads fulfilling a gateway function, and rural and residential areas, while recognising the functional needs of the activity.*
- b. *Effects of industrial activities are managed in a way that the level of residential amenity (including health, safety, and privacy of residents) adjoining an industrial zone is not adversely affected while recognising that it may be of a lower level than other residential areas.*
- c. *Development and activities are managed to avoid adverse effects on strategic infrastructure within or in proximity to industrial zones.*

<sup>14</sup> Within the District Plan, mixed-use: "means development which combines, within a [building](#), [buildings](#) or development area, a range of activities, including [residential activity](#), [commercial activities](#) and/or [community facilities](#)."

<sup>15</sup> While Objective 16.2.3 refers to the adverse effects of *industrial activities and development*, Policy 16.2.3.2(a) requires consideration of the effects of *development and activities in industrial zones*.

- d. *The quantity of wastewater discharged in areas over unconfined or semi-confined aquifers is restricted to minimise any risk of contamination.*
  - e. *The cultural values of Ngāi Tahu/mana whenua are recognised and supported through the protection of wāhi tapu and wāhi taonga, including waipuna, from the adverse effects of development, through the use of low impact urban design, use of indigenous species appropriate to the local environment, and stormwater management.*
  - f. *Development in the Industrial Park Zone is designed and laid out to promote a safe environment and reflects principles of Crime Prevention through Environmental Design (CPTED).*
193. I have discussed adverse effects of the proposal above. I note that the proposal meets the built form standards for the zone and will provide a higher amount of amenity planting than would be required in that zone (matter a). I consider that adverse effects on residential amenity will be appropriately managed, although highlight that this matter relates to industrial activities only (matter b).
194. I have discussed effects on strategic infrastructure above, and again note the directive nature of the wording used (matter c). With regard to wastewater and cultural values I consider the proposal to be appropriate (matters d and e). While the site is not within the Industrial Park Zone I note the comments of Ms Dray with regard to CPTED (matter f).

#### **16.2.3.3 Policy - Managing stormwater**

- a. *Ensure that stormwater is managed in a way that:*
    - i. *mitigates the adverse effects of flooding; and*
    - ii. *improves water quality in a manner which is consistent with maintaining environmental and public health.*
  - b. *Encourage methods that achieve:*
    - i. *a multi-value approach, using swales, wetlands, infiltration and retention basins, having regard to the location and environmental constraints; and*
    - ii. *integration with the wider network, reflecting a catchment based approach.*
195. I consider the proposal to accord with Policy 16.2.3.3 in that stormwater will be managed in such a way as to mitigate the adverse effects of flooding and will not adversely affect water quality. I note the use of a multi-value approach within the proposal with regard to stormwater.

#### **Conclusion at to the Industrial Framework**

196. Overall I consider the proposal will be contrary to the industrial policy framework, largely due to concerns that the Applicant has not demonstrated that it will not hinder or constrain the strategic transport network. I note the directive language and high threshold with respect to this policy (16.2.1.4), which I consider should be given significant weight. Similar wording is used within Policy 16.2.3.2, although its relevance to this application is not as clear (being a commercial activity in an industrial zone). If the Applicant were able to resolve concerns relating to the strategic transport network, I would consider the proposal to be inconsistent with the industrial policy framework.

#### **Transport**

197. The policy framework for the transport chapter of the District Plan (Chapter 7) seeks an integrated transport system that is safe and efficient, responsive to current and future needs, enables economic development, maximises integration with land use, reduces dependency on private vehicles while promoting the use of public and active transport, and is managed using the one network approach. While providing for use of the transport system, the framework also seeks to manage adverse effects of that system on the environment.

#### **7.2.1 Objective - Integrated transport system for Christchurch District**

- a. *An integrated transport system for Christchurch District:*
  - i. *that is safe and efficient for all transport modes;*

- ii. *that is responsive to the current recovery needs, future needs, and enables economic development, in particular an accessible Central City able to accommodate projected population growth;*
- iii. *that supports safe, healthy and liveable communities by maximising integration with land use;*
- iv. *that reduces dependency on private motor vehicles and promotes the use of public and active transport;*
- v. *that is managed using the one network approach.*

*Advice note:*

1. *The "One Network Approach" is an approach where the transport network is considered as a whole. The aim of this approach is to ensure that the management and provision of all transport infrastructure (including all transport modes) is well connected and undertaken in an efficient and integrated manner. For more guidance on how the "one network approach" is applied, please refer to the Greater Christchurch Transport Statement 2012 and Christchurch Transport Strategic Plan 2012.*

198. Rather than assessing the proposal against Objective 7.2.1, I will assess each of the policies that implement the objective. However, it is important to note that the objective seeks management utilising the one network approach. This is particularly relevant to this proposal given the comments from Mr Gregory that the transport modelling appears to be re-routing traffic movements. My understanding is that when an intersection reaches a point of such saturation that it becomes inefficient, the modelling tools used re-route traffic to other intersections. This mimics the anticipated decisions made by drivers to avoid congestion, however, results in additional movement on transport corridors away from the application site, as viewed in this instance for Winters and Vagues Roads.

#### **7.2.1.2 Policy - High trip generating activities**

- a. *Manage the adverse effects of high trip generating activities, except for permitted activities within the Central City, on the transport system by assessing their location and design with regard to the extent that they:*
  - i. *are permitted<sup>1</sup> by the zone in which they are located;*
  - ii. *are located in urban areas and generate additional vehicle trips beyond what is already established or consented, unless the already established or consented vehicle trips are specifically included in rule thresholds;*
  - iii. *are accessible by a range of transport modes and encourage public and active transport use;*
  - iv. *do not compromise the safe, efficient and effective use of the transport system;*
  - v. *provide patterns of development that optimise use of the existing transport system;*
  - vi. *maximise positive transport effects;*
  - vii. *avoid significant adverse transport effects of activities where they are not permitted by the zone in which they are located;*
  - viii. *mitigate other adverse transport effects, such as effects on communities, and the amenity values of the surrounding environment, including through travel demand management measures;*
  - ix. *provide for the transport needs of people whose mobility is restricted; and*
  - x. *integrate and coordinate with the transport system, including proposed transport infrastructure and service improvements.*

<sup>1</sup> *Refers to the activity being listed as a permitted activity in the activity status table for the zone in which it is located.*

*Advice note: Policy 7.2.1.2 also achieves Objective 7.2.2.*

199. Having regard to the assessment of Mr Gregory, I do not consider that the proposal has adequately shown that it will not adversely affect the transport system. I highlight general concerns with regard to location, being adjacent to an intersection operating at capacity with modelling of future scenarios suggestive that this will not significantly change, as well as the more specific concerns discussed below.

200. The proposal has estimated that 20% of the traffic movements will be primary, as opposed to existing movements within the transport network. With 870 vehicle movements estimated by the Applicant per peak hour, this equates to some 174 additional movements per peak hour. The site is located in an existing urban area, however, there are concerns that the proposal will result in movements that cannot

be appropriately accommodated within the roading network (matter ii), with the modelling apparently reliant on re-routing of vehicles to other parts of the transport network.

201. I do not consider the proposal to be designed in a way that encourages public and active transport (matter iii). While the site will be located on a public transport route and near a major cycleway, the current site design does not adequately provide for public and active transport, apparently being designed based on the needs of vehicular transport (exemplified by the location of the service station, which compromises a key pedestrian connection from Main North Road to the supermarket).

202. Having regard to Mr Gregory's assessment:

- I cannot conclude that the proposal will not compromise the safe, efficient, and effective use of the transport system (matter iv).
- I consider that the proposal will largely use an existing transport system, however, the addition of a signalised intersection along Main North Road will be adding to that system (matter v). Compared to location of the activity within an existing centre (e.g. the Papanui centre), the proposal represents a less optimal pattern of development with regard to the transport system.
- I am unaware of how the proposal may maximise positive transport effects (matter vi).
- Noting that a supermarket is not permitted within the Industrial General zone, matter vii is relevant. In light of issues raised with the transport modelling, I cannot conclude whether adverse effects on the transport network will, or will not, be significant. Noting the complex transport environment, which is expected to be operating near capacity without the development, it appears that adverse effects have the potential to be significant.
- The proposed conditions provided by the applicant includes the use of Travel Demand Management measures for future staff at the proposed supermarket. My understanding is that these would assist in mitigating increased reliance on private vehicles to some degree, however, highlight the lack of integration with / provision for public and active transport modes within site design as potentially hindering the uptake of such measures (viii).
- The proposal includes mobility parking (matter ix).
- The proposal does not integrate or coordinate well with the transport system, including likely upgrades to the public transport network along Main North Road (in relation to the narrowing of the public transport corridor) and upgrades to Northcote Road (which will likely remove the ability for vehicles to turn right from Northcote Road into Lydia Street – a movement that the current modelling suggests will be utilised by some 100 vehicles per hour).

203. I consider the proposal to be, at the least, inconsistent with Policy 7.2.1.2. The policy requires that adverse effects of high trip generating activities be managed. There is potential that the proposal may compromise the safe, efficient, and effective use of the transport system, and could result in significant adverse transport effects. Given issues relating to transport modelling, I am unable to conclude on these matters. However, if the transport system were compromised or adverse significant effects were to eventuate the proposal would be contrary to Policy 7.2.1.2.

### **7.2.1.3 Policy - Vehicle access and manoeuvring**

- a. *Provide vehicle access and manoeuvring, including for emergency service vehicles, compatible with the road classification, which ensures safety, and the efficiency of the transport system.*

*Advice note: Policy 7.2.1.3 also achieves Objective 7.2.2.*

204. The proposal will provide for vehicle access to the site via a new signalised intersection on Main North Road. As discussed above, it is not clear that this will provide for the efficiency of the transport system. Mr Gregory has raised concerns with some of the vehicle accesses and manoeuvring areas proposed.

205. An additional concern has been raised with regard to the Redwood Family Dentist, the site access for which conflicts with the proposed signalised intersection and has been assessed through a Safety Audit as 'occasional' but 'likely' to result in serious injury or death. I understand that the Applicant has consulted with this party and reached an agreed solution. At present I am unaware of this solution and, therefore, cannot conclude that safety has been ensured with respect to this access.

#### **7.2.1.4 Policy - Requirements for car parking and loading**

- a. *Outside the Central City:*
- i. *Require car parking spaces and loading spaces which provide for the expected needs of an activity in a way that manages adverse effects.*
  - ii. *Enable a reduction in the number of car parking spaces required in circumstances where it can be demonstrated that:*
    1. *the function of the surrounding transport network and amenity of the surrounding environment will not be adversely affected; and/or*
    2. *there is good accessibility by active and public transport and the activity is designed to encourage public and active transport use; and/or*
    3. *the extent of the reduction is appropriate to the characteristics of the activity and its location; and/or*
    4. *the extent of the reduction will maintain on-site parking to meet anticipated demand.*
- b. ...

#### *Advice note:*

1. *Policy 7.2.1.4 also achieves Objective 7.2.2.*

206. I generally consider that the provision of vehicle parking is sufficient for the proposed activity, noting that the number of spaces proposed meets those required once parking reduction factors are taken into account. I note that the site itself has good accessibility to public transport and a major cycleway, however, the site design does not encourage its use. The Applicant has proposed the use of Travel Demand Management measures for staff of the proposed supermarket. The lack of clarity around movement of cyclists and the connections for pedestrians cannot be said to encourage their use or the uptake of Travel Demand Management measures. I consider that more appropriate provision for public and active transport modes would result in a more suitable outcome.

#### **7.2.1.5 Policy - Design of car parking areas and loading areas**

- a. *Require that car parking areas and loading areas are designed to:*
- i. *operate safely and efficiently for all transport modes and users;*
  - ii. *function and be formed in a way that is compatible with the character and amenity values of the surrounding environment; and*
  - iii. *be accessible for people whose mobility is restricted.*

#### *Advice note:*

1. *Policy 7.2.1.5 also achieves Objective 7.2.2.*

207. Mr Gregory has raised concerns with respect to the safety and efficiency of some aspects of the car parking and loading areas (specifically the roundabout 50m west of the proposed signalised intersection). Other aspects he considers exceeds the requirements set by the District Plan (i.e. the basement car parking). I consider the car parking and loading areas to function and be formed in a way that is generally compatible with the character and amenity values of the surrounding environment. However, I do highlight the concerns raised by Ms Dray with respect to safety for the area to the rear of the supermarket and the Lydia Street connection. There is provision for accessibility for people whose mobility is restricted via mobility car parking.

#### **7.2.1.6 Policy - Promote public transport and active transport**

- a. *Promote public and active transport by:*

- i. ensuring new, and upgrades to existing, road corridors provide sufficient space and facilities to promote safe walking, cycling and public transport, in accordance with the road classification where they contribute to the delivery of an integrated transport system;
- ii. ensuring activities provide an adequate amount of safe, secure, and convenient cycle parking and, outside the Central City, associated end of trip facilities;
- iii. encouraging the use of travel demand management options that help facilitate the use of public transport, cycling, walking and options to minimise the need to travel; and
- iv. ...
- v. ...
- vi. ...

Advice note:

1. Policy 7.2.1.6 also achieves Objective 7.2.2.

208. As discussed above, I consider that as proposed the application does not appropriately promote public and active transport. Mr Gregory has raised concerns that the proposal will reduce the space in the road corridor for public transport along Main North Road, a matter he considers particularly important given its identification for rapid transit in the future (matter i). It appears the proposal will provide safe secure, and convenient cycle parking (matter ii). This and the inclusion of travel demand management options are positive aspects of the proposal (matter iii). However, overall, I consider the proposal does not achieve the intent of Policy 7.2.1.6.

### **7.2.2 Objective - Adverse effects from the transport system**

- a. Enable Christchurch District's transport system to provide for the transportation needs of people and freight whilst managing adverse effects from the transport system.

209. I consider that Objective 7.2.2 is relevant to this proposal, noting that it will result in increased reliance on the transport system and also involves changes to that system. I consider this objective through the attendant policies below.

#### **7.2.2.1 Policy - Effects from the strategic transport network**

- a. To manage any adverse effects from the ongoing use, repair, and development of the strategic transport network, whilst recognising the national and regional scale and economic importance of this network, and the role of the strategic transport network in the recovery of Christchurch.

210. The strategic transport network includes major arterial and state highways, in this case being Northcote Road, QEII, and Main North Road north of the intersection of these roads. The policy requires adverse effects from the ongoing use, repair, and development of strategic infrastructure be managed, while recognising the importance of those roads. I consider this relevant as it relates to the existing and planned layout of Northcote Road. As indicated by Mr Gregory, the existing layout of Northcote Road does not lend itself to the number of right hand turns into Lydia Street estimated by the proposal (some 100 vehicles per hour). The ability to make this turn will be further constrained at the time of upgrades to Northcote Road, which will likely remove the ability for vehicles to turn right from Northcote Road travelling east completely. Mr Gregory's concerns in this regard sit with the ability for the Applicant to service their delivery needs without this right hand turn.

#### **7.2.2.2 Policy - Activities within the Transport Zone**

- a. Enable activities for transport purposes and ancillary activities within the Transport Zone that seek to provide, maintain or improve:
  - i. the safety, amenity values, efficiency and functionality of the Transport Zone, in particular the strategic transport network; and
  - ii. structures, facilities, services and installations of the transport network.
- b. ...
- c. ...
- d. ...

211. I consider the proposal to be neutral with respect to Policy 7.2.2.2, noting that the proposed changes (including the addition of a signalised access and addition of a second right hand turning lane from Main North Road heading northeast into QEII) are required to mitigate effects of the proposed development, rather than improve the functionality of the network.

### **7.2.2.3 Policy - Effect on adjacent land uses to the Transport Zone**

- a. *Manage the adverse effect(s) of an activity within the Transport Zone so that the effects of the activity are consistent with the amenity values and activity of adjacent land uses, whilst providing for the transport network, in particular the strategic transport network to function efficiently and safely.*
- b. *To ensure adjacent land uses are designed, located and maintained in such a way as to avoid reverse sensitivity effects on the strategic transport network.*

#### *Advice note:*

1. *Policies 7.2.1.1, 7.2.1.2, 7.2.1.3, 7.2.1.4, 7.2.1.5, 7.2.1.6, 7.2.1.7, 7.2.1.8 also apply to Objective 7.2.2.*
  2. *Policies 7.2.2.2, 7.2.2.3 also apply to Objective 7.2.1.*
  3. *For more details on the Council's vision, expectation and plans for transport, during the recovery period and longer term, please refer to the 'Christchurch Transport Strategic Plan'.*
212. Policy 7.2.2.3 seeks to manage the adverse effects of an activity within the transport zone on land uses adjacent to that zone. In relation to the current proposal, I consider this most relevant to the Redwood Family Dentists and potential conflict between the signalised intersection and their vehicle access. Taking account of the assessment of Mr Gregory, I do not consider that adverse effects as they relate to safety and efficiency have been addressed. I accept that the Dentist's have removed their submission in opposition to the proposal, however, have not received any details on how any agreement met between the two parties may mitigate the safety concerns. Without such, I cannot conclude that the safety concern has been suitably addressed.

#### Conclusion as to the Transport Network

213. In its current form the proposal does not find support within the policy provisions of the transport chapter of the District Plan. I consider the proposal to be at least inconsistent with the policy framework, and potentially contrary to it (noting concerns with the transport modelling). As set out in the evidence of Mr Gregory, there is potential for changes to the application to account for some of the adverse effects identified. Such changes would also increase alignment with the policy framework.

### **Water Bodies**

214. The proposal seeks to pipe 225m of the Lydia Street Drain, a network waterway within the Christchurch District Plan. Objective 6.6.2.1 'Protection of water bodies and their margins from inappropriate use and development' and accompanying policies 6.6.2.1 'Naturalisation of water bodies and their margins', 6.6.2.1.2 'Setbacks from water bodies', and 6.6.2.1.3 'Management of activities in water body setbacks' generally seek to manage activities within waterbody setbacks to enhance its functions and associated values<sup>16</sup>. Those functions and values include; flood management, water quality, riparian or aquatic ecosystems, the natural character and amenity values of the water body, historic heritage or cultural values, and access where appropriate for recreation activities, customary practices, or maintenance.
215. Policy 6.6.2.1.2 sets out that adverse effects of activities should be managed in a manner consistent with the function of the waterbody. For network waterways this is: "*Where feasible, creating or enhancing ecological corridors for terrestrial and aquatic animals and plants*". The policy also sets out the following for all waterbodies:

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<sup>16</sup> See **Appendix T** for these and subsequent objectives and policies not set out in full in the report text.

- a. *Providing a buffer zone for natural erosion, sedimentation and land movement in the weak saturated soils that border water bodies; and minimising the risk that these processes pose to buildings or other structures.*
- b. *Minimising flood risk and damage by providing flood storage capacity, dispersal and effective land drainage; and managing risk and damage from structures that transfer flood hazard.*
- c. *Improving water quality and catchment-wide ecosystem health by filtering potential contaminants.*
- d. *Allowing space for riparian planting where possible in a continuous corridor to improve ecological values, and bank and slope stability.*
- e. *Providing access for the maintenance of water bodies and any associated hazard protection works.*

216. The Applicant has highlighted that the requirement for creation of ecological corridors for network waterways is *where feasible*. Similar phrasing is used within Policy 6.6.2.1.1 which supports “...the provisions of ecological corridors and public access where possible, recognising this may not be fully achievable for some classifications of water body because of historic development patterns or adjoining land uses”. The Applicant has highlighted that alternative options have been explored, however, these have not been deemed suitable (in part by Council). They also make note of the location of the drain between the neighbouring residential properties and right-of-way, which limits the space in which to undertake naturalisation. I agree that the requirement is only where it is feasible to do so. I am not convinced that it is infeasible to design an approach that would limit the amount of piping proposed (e.g. by having the pipe open in the eastern part of the site), but accept that alternatives have been explored and there are specifics of the site layout (including the residential lots to the north and right-of-way to the south) that restrict the extent of naturalisation that could take place.

217. The proposed works within the waterway setback for that part of the site to remain open will include planting of native vegetation along its margins. I consider the proposal to be appropriate with regard to matter a. For the reasons outlined above, I consider that flood risk and damage will be appropriately minimised and the proposal will not result in transfer of flood hazard (matter b). As noted by Council’s waterways specialists, the proposal is not considered mitigation for the existing contamination entering the waterway, so consider the proposal neutral with respect to matter c. I note that the part of the drain to remain open will remain a box drain, so will not be fully naturalised, although acknowledge the positive effects of the planting along its margins and the additional planting proposed throughout the site, which Dr Burrell (Council’s ecologist) considers appropriate mitigation (matter d). The open section of drain will be available for access for maintenance purposes and the piped section will include an easement to provide for access (matter e).

218. With respect to Policy 6.6.2.1.3, and having regard to the assessment from Dr Burrell and Ms Tredinnick, I have the following comments:

- I am unaware of any cultural significance of the water body to tangata whenua (matter i).
- I do not consider the proposal to result in enhancement of water quality (noting their comments regarding the pollution source), however, accept Dr Burrell’s opinion that the planting proposed will adequately offset habitat loss (matter ii).
- I do not consider that piping of a waterway will increase connectivity between the land and freshwater system (matter iii).
- I am satisfied that the proposal will not adversely affect stability of the banks and that sedimentation and erosion will be appropriately minimised (matter iv).
- Access for maintenance will be enabled (matter v).
- The ability of the water body to convey surface water will be retained (matter vi).
- Flooding events will not be exacerbated (matter vii).
- Adverse effects of flooding will not be transferred to an adjacent site (matter viii).

- I do not consider that piping of the waterbody will increase amenity values or natural character values, although note Dr Burrell's comments with respect to mitigation planting throughout the site (matter ix).
- The activity will not affect any sites of ecological significance, Outstanding Natural Landscape's, Outstanding Natural Feature's, significant features, rural amenity landscapes, areas of character in the coastal environment, heritage items or settings, significant trees, or areas of Ngāi Tahu cultural significance (matter x).
- The proposal will provide for public access along that part of the waterway not to be piped, with this to be increased in amenity values through proposed planting (matter xi).

219. I consider that the policy framework for waterbodies generally seeks their enhancement and that, as such, an application to partially pipe a waterway will not be entirely consistent with the objectives and policies. That is the case here. I note that the Applicant's proposal appears to rely heavily on the fact piping of the waterway will limit a pollution source from entering the waterway and that it will form part of their stormwater management, both aspects that Council specialists have placed little weight upon. However, I do accept that there is limited space for naturalisation to occur, and that as a network waterway the primary function for conveyance will be retained. I have placed a large amount of weight on the mitigation planting that the Applicant has proposed in consultation with Council's ecologist, Dr Burrell. In light of that I am of the opinion that while the proposal is not consistent with the policy framework for waterways, this is not fatal to the application.

## Signs

220. Objective 6.8.2.1 'Signage' and associated policies 6.8.2.1.1 'Enabling signage in appropriate locations', 6.8.2.1.2 'Controlling signage in sensitive locations', 6.8.2.1.3 'Managing the potential effects of signage', and 6.8.2.1.4 'Transport safety' seek to enable signage, while mitigating adverse effects of that signage (including that on residential amenity and transport safety). I am satisfied that the signage proposed will be consistent with these policies.

## Noise

221. Objective 6.1.2.1 'Adverse noise effects' seeks to manage noise effects on amenity and health consistent with the anticipated outcomes for the receiving environment. Policy 6.1.2.1.1 'Managing noise effects' seeks to limit the sound level, location, and duration of noise activities, and requires sound insulation for sensitive activities or by limiting their location. Policy 6.1.2.1.2 'Noise during night hours' requires lower noise levels during night time hours to protect sleep and the amenity values of residential environments so far as is practicable. Having regard to the assessment provided by Ms Stout, I am satisfied that the proposal will be consistent with this policy framework. I highlight the existing ambient noise levels, underlying industrial zoning of the site, and the limited use during night-time hours.

## Outdoor Lighting

222. As relevant to this proposal, Objective 6.3.2.1 'Artificial outdoor lighting and glare' and Policy 6.3.2.1.1 'Enabling night-time activity while managing the adverse effects of artificial outdoor lighting' seek to provide for outdoor lighting that enables night-time activities and safety, while managing adverse effects on the rest or relaxation of residents and does not interfere with the safe operation or the transport network. Subject to the proposed conditions of consent I am satisfied that outdoor lighting will be consistent with this framework.

## **Contaminated Land**

223. Objective 4.2.2.1 'Contaminated land – managing effects' and associated policies 4.2.2.1.1 'Best practice approach', 4.2.2.1.2 'Remediation', and 4.2.2.1.3 'Future use' seek to control the use of contaminated land to protect human health and the environment. Having regard to the assessment of Ms Stout and the conditions of consent proposed should consent be granted, I am satisfied that the proposal is consistent with this policy framework.

## **Flood Hazard**

224. Objective 3.3.6(a) 'Natural Hazards' seeks subdivision, use and development to be undertaken in a manner that mitigates risks of natural hazards to people, property and infrastructure where the site is not in an area where natural hazard risk is assessed as being unacceptable. In this case, the site is within a Flood Management Area, rather than High Flood Hazard Management Area so the objective seeks mitigation of risk. This is reflected in the policy framework – Policy 5.2.2.1.2 requires activities be managed to address natural hazard risk in a manner commensurate with that risk, and Policy 5.2.2.1.4 requires that development ensure natural hazard risk is not transferred or created to other people, property, infrastructure, or the natural environment. These outcomes are solidified with respect to flooding risk within Policy 5.2.2.2.1 'Flooding'. This policy requires that development does not transfer risk and new buildings have floor levels above flooding predicted to occur in a major flood event, except those that are unlikely to suffer material damage. Accepting the advice provided by Council specialists, I am satisfied that the proposal is consistent with this framework. The proposal will not transfer flooding risk to other persons, property, infrastructure, or the natural environment. I note that the majority of the proposed supermarket building meets the minimum floor level. While the basement car parking does not, the Applicant's design mitigates flood risk through use of a bund that reduces flooding risk to that consistent with a building that does meet the minimum floor level. I highlight Ms Keenan's assessment that expected flooding of the basement will most likely be the result of wave action, and the Applicant's confirmation that building materials used will be unlikely to suffer material damage.

## **Earthworks**

225. I am satisfied that the proposed earthworks can be carried out in a manner consistent with Objective 8.2.4 'Earthworks' and attendant policies 8.2.4.1 'Water quality', 8.2.4.3 'Benefit of earthworks', and 8.2.4.4 'Amenity', as well as Objective 8.2.5 'Earthworks health and safety' and attendant policies 8.2.5.1 'Land stability', 8.2.5.2 'Nuisance', 8.2.5.3 'Vehicle movement', 8.2.5.4 'Earthworks design', and 8.2.5.5. 'Management of contaminated land'. Should consent be granted, I have recommended a number of conditions to ensure that adverse effects of earthworks are appropriately mitigated. These include conditions relating to contaminated land, enabling an outcome consistent with Objective 4.2.2.1 'Contaminated land – managing effects', and Policies 4.2.2.1.1 'Best practice approach', 4.2.2.1.2 'Remediation', and 4.2.2.1.3 'Future use'.

## **Significant and Other Trees**

226. Objective 9.4.2.1.1 'Trees' seeks (among other matters) to maintain and enhance the contribution of trees in road corridors to community amenity. Of particular relevance to this proposal, Policy 9.4.2.2.3 'Tree protection' seeks to protect street trees from inappropriate physical works to the extent consistent with maintaining the functions of the road corridors, Policy 9.4.2.2.4 'Tree maintenance' seeks to appropriately maintain and manage trees in the road corridor, and Policy 9.4.2.2.7 'Felling of trees' seeks to limit the felling of trees in road corridors, having regard to size, location and species, except where there are no reasonable alternatives. I am of the opinion that the proposed tree removal and earthworks within 5m of the base of other street trees accords with the policy framework. I highlight that their removal is necessary to construct the proposed intersection, and the proposed consent conditions

which include planting of replacement trees and restriction on works within 5m of a street tree to protect the health of the trees to remain.

### **Conclusion as to Objectives and Policies**

227. After considering the relevant objectives and policies it is my conclusion that the application is contrary to the intent of the policy framework. While I am satisfied that the proposal accords with the framework in some respects, I have significant concerns that the use of industrial land for commercial activities will undermine the centres-based framework for commercial activity within the Christchurch District Plan. I have set out these concerns above within the context of the upscaling of a Local Centre beyond that anticipated by the District Plan. However, if the decision-maker was of the opinion that this does not represent such and is instead an out of zone activity, I still consider the proposal does not find support within the policy framework.
228. I also hold significant concerns with respect to effects on the transport network, and strategic transport network in particular. The Industrial policy framework sets a high threshold for non-industrial activities, requiring any such activities with the potential to hinder or constrain the strategic network be avoided. I do not consider that sufficient information has been provided to be satisfied that this threshold has been met. I have a similar position with respect to the Transport policy framework, considering the proposal to be at least inconsistent with, and potentially contrary to, the relevant provisions.

### **Other relevant Statutory Documents (S.104 (1)(b))**

229. Statutory documents of relevance to this application include the Canterbury Regional Policy Statement and the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.
230. The Canterbury Regional Policy Statement includes provisions that seek to locate new commercial activities within existing centres and ensure that land use and infrastructure are integrated to avoid outcomes that have the potential to limit the provision, operation, maintenance or upgrade of strategic infrastructure. In its submission the Canterbury Regional Council has raised a number of, what it considers to be, inconsistencies with the Regional Policy Statement. I have not undertaken a thorough review of the Regional Policy Statement here, noting that the Christchurch District Plan gives effect to that document, with one exception. That exception relates to proposed changes to Chapter 6 of the Regional Policy Statement to give effect to the 'Our Space 2018-2048 Greater Christchurch Settlement Pattern Update *Whakahāngai O Te Hōrapa Nohaanga*'. The proposed changes relate to residential intensification and I do not consider them to be relevant to this application.
231. I am of the opinion that the key issues raised by the Canterbury Regional Council with regard to the Canterbury Regional Policy Statement are the same that have been identified above (particularly the out of zone nature of the activity and concerns with effects on strategic infrastructure), which the District Plan provides clear direction on.
232. The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health is relevant to this proposal and discussed above. Subject to the proposed conditions of consent recommended I am satisfied that this will be appropriately given effect to.

### Recovery Plans and Regeneration Plans

233. Section 60(2) of the Greater Christchurch Regeneration Act 2016 requires that decisions and recommendation on resource consent applications are not inconsistent with Recovery Plans and Regeneration Plans. The Land Use Recovery Plan is relevant to this proposal. As with the above, the Christchurch District Plan has been developed to align with the Land Use Recovery Plan and I have not assessed it specifically here.

### Precedent Effect / Plan Integrity

234. It is appropriate to have regard to the issue of precedent, as well as the effect of granting consent upon the integrity of the District Plan and public confidence in its consistent administration. Case Law has established, through the High Court in *Rodney District Council v Gould*<sup>17</sup>, that concerns relating to plan integrity and precedent effect are not mandatory considerations. The Court held that they are matters that decision makers *may have regard to*, depending on the facts of a particular case including:

1. Whether a proposal is contrary to the objectives and policies of the plan; and if so
2. Whether in the circumstances of a particular case a proposal can be seen as having some unusual quality.

235. I consider these matters below, however, before doing so address the suitability of considering precedent and plan integrity for discretionary activities. While precedent is more commonly addressed for non-complying activities, I highlight the position of the High Court in *Stirling v Christchurch City Council*<sup>18</sup> which, with reference to *Norwood Lodge v Upper Hutt City Council*<sup>19</sup>, stated: *“This decision dispels any suggestion that precedent effect might not be a legitimate consideration when the application under consideration is an application for a discretionary activity.”* *Stirling v Christchurch City Council* shares similarities with the current application, both being discretionary activities for out of zone commercial activities that will not result in distributional effects in and of themselves.

236. More recently, the matter of precedent was considered through the Environment Court in *Ohau Protection Society Incorporated v Waitaki District Council*<sup>20</sup>. This decision states at paragraphs 105 and 106, that while adverse precedent is more typically considered in relation to non-complying activities:

*“That is not to say adverse precedent could not be a valid RMA issue for a discretionary activity although it would be unusual. As is the case for non-complying activities, however, the issue essentially comes back to a proper interpretation of the related intentions of the relevant plan. Although somewhat counter-intuitive, we accept there is a theoretical possibility that grant of consent for a discretionary activity could be so at odds with the relevant objective and policies of a plan as to undermine its integrity and so set an adverse precedent...”*

237. I have concluded above that the application is contrary to the objectives and policies of the District Plan and consider that precedent and plan integrity are relevant considerations. This differs from the Applicants Assessment of Environmental Effects, which does not consider such matters.

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<sup>17</sup> [2006] NZRMA 217.

<sup>18</sup> [2011] 16 ELRNZ 798.

<sup>19</sup> [2016] CA 37/06.

<sup>20</sup> [2018] NZEnvC 243.

238. I have given consideration to the uniqueness of this site within the context of the District Plan. There are similar examples of underutilised Industrial sites situated adjacent to a Local Centre, so it is worth considering whether this is sufficient to distinguish it from other applications. I have reviewed the online District Plan map viewer to identify similar scenarios, and have identified a small number<sup>21</sup>. However, the key issue at play relates to the expansion of commercial activity into adjacent non-commercially zoned land. This will result in the upscaling of a centre beyond its intended function, an issue that is not particular to the zoning applicable here. The District Plan sets a directive that such should not occur, and I see no reason why the granting of this consent would not set an expectation for other Applicants that the expansion of a commercial centre beyond its intended role is acceptable.
239. Taking a broader view of the application, it is for a large-scale commercial activity in an industrial zone that has not adequately demonstrated that the operation of the strategic transport network will not be hindered or constrained. Setting aside the question of whether this proposal will result in a change of the function of the existing centre, granting consent to it would set an expectation for similar out of zone activities – particularly commercial activities within the Industrial General zone. I consider that the policy framework is directive for a specific reason, and highlight that it is not unusual for one out of zone commercial activity in isolation not to adversely affect the functioning of nearby centres. The granting of multiple out of zone activities will give rise to effects on centres, and if an activity cannot sufficiently identify itself as a true exception there are real risks relating to precedent. I am not convinced that this proposal represents such an exception, being a large retail activity (supermarket) on industrial zoned land.
240. In relation to plan integrity, I note the position of the High Court in *Stirling v Christchurch City Council* at [90]:
- “While in some situations the concept of precedent and integrity of the District Plan might amount to the same thing, that is not necessarily the case. I agree with Ms Dunningham that whereas the concept of precedent reflects the concern that the granting of consent may have planning significance beyond the immediate vicinity of the land concerned, plan integrity is more likely to reflect the public confidence in the Plan.”*
241. Having regard to this, I consider the current application has the potential to affect plan integrity in two ways. Firstly, there is the risk that it could set a precedent, resulting in similar commercial activities seeking to be located outside of commercial centres or seeking to expand commercial centres beyond their intended role. Accepting that like applications will be treated alike, it will be difficult for Council to decline similar activities and there is the potential for this to undermine the centres-based framework. This will undermine the achievement of the objectives of this relatively new District Plan. The other way in which I consider plan integrity may be undermined is that granting of this consent that has been assessed as being contrary to the commercial and industrial objectives and policies could, in itself, undermine public confidence in the administration of the District Plan.

## Part 2 of the Act

242. The matters outlined previously are subject to Part 2 of the Act which outlines its purpose and principles.

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<sup>21</sup> For example, the corner of Ferry Road and Ensors Road in Woolston includes a Local Centre with adjacent Industrial General zoning – this is also situated next to arterial roads. A similar example exists at the corner of Riccarton and Whareui Road. There are multiple examples of existing neighbourhood centres with adjacent industrial zoning (e.g. Cranford, Fairymead, Woolston). This would not necessarily result in the same upscaling in the role of a centre, however, poses similar concerns.

243. The Christchurch District Plan has recently been reviewed. Its provisions were prepared under the higher order planning documents and, through its preparation and the process of becoming operative, have been assessed against the matters contained within Part 2.
244. Taking guidance from recent case law<sup>22</sup>, the District Plan is considered to be the mechanism by which the purpose and principles of the Act are given effect to in the Christchurch District. It was competently prepared via an independent hearing and decision-making process in a manner that appropriately reflects the provisions of Part 2. Accordingly, no further assessment against Part 2 is considered necessary.

## Conclusion

245. After considering the actual and potential effects on the environment of allowing the application, it is my conclusion that adverse effects on the environment will be **more than minor** and **potentially significant** as they relate to urban design and transport. Adverse effects as they relate to other matters can be suitably controlled through conditions of consent, such that they are no more than minor and acceptable.
246. In my opinion this proposal is **contrary** to the objectives and policies of the District Plan as it will result in the expansion of a Local Centre beyond the intended role of that centre within the strategic network of commercial centres. The activity does not focus commercial activity within commercially zoned land, and I do not consider that the threshold has been met whereby one can say that the ongoing operation or development of the strategic transport network will not be hindered or constrained. The proposal does not find support within the policy framework, may give rise to issues of precedent, and has the potential to undermine the centres-based framework for commercial activities and public confidence in the District Plan.
247. Having considered all of the relevant matters under Sections 104 and 104B it is my opinion that consent should be **declined**.

## Sections 108 and 108AA - Conditions

248. Should the decision-maker be of a mind to approve the application, I have included a set of possible consent conditions as **Appendix U**. As noted in the Appendix, conditions in black text have been accepted by the Applicant, while those in red have not at the time of writing this report. Those conditions that have not been accepted relate to landscaping, which was discussed through expert conferencing. At that time, landscape experts from both the Applicant and Council agreed that the outstanding matters could be suitably addressed via conditions. The Applicant has been provided a copy of the proposed landscaping conditions.
249. I note that the conditions in **Appendix U** do not cover matters relating to the transport concerns of Mr Gregory. Nor do they address the site layout and urban design issues raised by Mr Hattam, or the CPTED issue at the rear of the supermarket raised by Ms Dray. Each of these experts have provided matters relating to these issues that they recommend be addressed should the decision-maker be of a mind to grant the proposal. However, given their respective positions on these matters, and the large-scale changes required in some instances, I have not formed these into consent conditions.

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<sup>22</sup> R J Davidson Family Trust v Marlborough District Council [2018] NZCA 316.

## Recommendation

250. I have assessed this application to establish and operate a supermarket with associated self-service petrol station, ancillary offices, emergency coordination facility, car parking, roading realignment (addition of a signalised intersection along Main North Road), signage, earthworks, and modifications to the Lydia Street Drain (a network waterway) at 171 & 165 Main North Road, and 7, 7A, & 7B Northcote Road. Having considered all the matters relevant to this application, I recommend that this application be **declined** pursuant to Sections 104 and 104B of the Resource Management Act 1991.



Nathan Harris  
Planner

### Reviewed by:



Emma Chapman  
Senior Planner

11<sup>th</sup> November 2019

## **Appendix A – Summary of Submitters**

## APPENDIX A – SUMMARY OF SUBMITTERS

ID	NAME	ADDRESS	POSITION	REASON
1	A Taylor	171 Guthries Road	Support	Progression of area. Access will be better than Northlands. Fuel on site is convenient.
2	A Tily	1/267 Pages Road	Support	Need for a supermarket in area.
3	CDEM Canterbury	Attn: James Thompson PO Box 345	Support	The Canterbury Civil Defence Emergency Management Group supports the application, particularly the creation of an emergency response centre. A number of advantages with using this site from an emergency management perspective (location, can be self-sufficient).
4	M A Schiphorst	25 Northcote Road	Support	N/A
5	M K Homan	194 Main North Road	Support	Existing supermarkets are congested with sometimes difficult parking.
6	N Davies	438 Barrington Street	Support	Will provide more jobs and easier to access than that at Northlands Mall.
7	N Spink	44 Oxley Avenue	Support	Support the application in its entirety but seeks it be ensured that there is access in either direction on Main North Road.
8	O.C & P.M Trounce Family Trusts Partnership (Abbella Motel)	Attn: Oscar Trounce 26 Bamber Crescent	Support	Support the proposal. Consider the industrial zoning to be inappropriate. Any lighting of car parks and fuel station should be LED type downlights to minimize disturbance of adjoining properties.
9	Oil Changers – On Behalf of Franchise operator Oil Changers Papanui	7 Northcote Road	Support	Will benefit their business, will assist in clearing up social movements after hours on the application site – consider that the Pak'nSave will improve general security of the area. Seek a requirements that chains or gates are installed across site entry / exits after hours.
10	The Roman Catholic Bishop of the Diocese of Christchurch	Attn: Shaun Mitchell PO Box 4544	Support	Consider the proposed development is an efficient and compatible use of the land. Will be a better outcome with respect to their future school. Industrial activity would give rise to greater adverse effects on future school. Having the supermarket in this location would provide for multi-purpose travel (families going to supermarket after visiting school) and employment for school attendants. Support the use of travel management to reduce adverse effects on future school. Consider pedestrian linkages through the site and along the right-of-way to be safe, separated, and of high-quality. Support provision of signalized intersection, which will enable pedestrians to cross Main North Road and access bus stops. Support provision of a

ID	NAME	ADDRESS	POSITION	REASON
				northbound bus priority phase, which will benefit their students. Consider noise effects would be a better outcome than what could occur as a permitted activity. Support the Stormwater approach, use of native vegetation, and information boards.
11	W J Maynard	174A Main North Road	Support	N/A
12	Canterbury Regional Council	Attn: Joanne Stapleton PO Box 345	Oppose	Location of the development in industrial zoning inappropriate within the context of the CRPS. Moving outside the KAC may increase reliance on private vehicles and adversely affect the transport network. Moving such commercial activities away from KAC's is not supported in CRPS. Also speak to the GCUDS 2016 and Our Space 2018-2048.  Additional traffic lights could impact upon bus line, which CRC operate. Concerns with changes to bus lanes.  Contaminated land – request that CRC are provided with investigation, management plans, remedial action plans, and that an accidental discovery protocol be included in any conditions.
13	Christchurch Citizens Collective	40 Elizabeth Street	Oppose	Traffic congestion and disruption of traffic flows. Existing Pak'nSave location at Northlands. If the application were to go ahead want no traffic lights along Main North Road.
14	D Wagstaff	10 Redfern Street	Oppose	Traffic congestion – congestion along Main North Road, QEII/ Main North Road/Northcote intersection a concern for safety. Adding traffic lights will further increase congestion. Concerns with additional school to be built that there will be traffic safety issues with children.
15	J Jones	153 Main North Road	Oppose	Traffic effects, including pedestrian safety, effects on bus services, effects on safe access from their site and property price relating to this). Noise effects on their property. Safety concerns (appear to be related to traffic).  There is an existing petrol station in the vicinity and no need for another.
16	NZ Transport Agency	Attn: Richard Shaw PO Box 1479	Oppose	Concerns with effects on the traffic network – including specific aspects of the model, effects on the QEII/Main North Road/Northcote intersection (which NZTA are the road controlling authority for). Concern that consent may be granted for changes to above intersection, which NZTA then do not approve. Concerns with public transport, walking and cycling. Concerns with commercial use of land zoned for industrial use – do not consider this aligns with the GCUDS or CRPS.
<del>17</del>	<del>Redwood Family Dentists</del>	<del>Attn: Mary-Clare Clemence</del>	<del>Oppose</del>	<del>Change of layout of Main North Road will affect on street parking and the ability for them / customers to access driveway.</del>

ID	NAME	ADDRESS	POSITION	REASON
		<del>186 Main North Road</del>		
18	S J Steel	21B Northcote Road	Oppose	Concerns relating to flood management / earthworks – construction phase effects with trucks (effects on house). Noise at both day and night – trucks and car noise, forklifts, delivery trucks. Traffic congestion along Northcote Road. If consent is granted, suggest a buffer between properties be created, speed bumps be removed before earthworks occur, speed limit is put in place to protect housing from vibrations.
19	D J Beck	15 Northcote Road	Neutral	Concerns with noise from customer and delivery vehicles. Light pollution from building and outdoor lighting. Concerns if there are any upper floor windows facing residential units to the north. Suggest planting of a three meter wide greenbelt between boundary line and residential to the north.
20	G Watts - In Behalf of Canterbury Neighbourhood Support	2A Camden Street	Neutral	Sets out six points they want addressed (making of entry / exit, improvement for exit / entry on Northcote Road, locking device on trolleys so not left around area, contribution by Foodstuffs to a community project, better customer service than currently at Northlands, inclusion in Canterbury Civil Defense Management and Canterbury Neighborhood Support.
21	J R Sinclair	172 Main North Road	Neutral	Notes concerns with traffic noise and fumes on those living close to the new Main North Road intersection. Consider that Foodstuffs and CC should contribute to acoustic insulation of houses affected by traffic noise and fumes.



## **Appendix B – Economics Assessment**

# PROPERTY **E**CONOMICS



**PROPOSED PAK'N SAVE**

**PAPANUI, CHRISTCHURCH**

**ECONOMIC PEER REVIEW**

**Client:** Christchurch City Council

**Project No:** 51763

**Date:** October 2019



## 1. INTRODUCTION

Property Economics has been engaged by Christchurch City Council (CCC) to undertake a peer review of the proposed Papanui Pak’N Save (PNS) supermarket at 171 Main North Road, Christchurch. Specifically, this peer review assesses the economic impact assessment of the proposed PNS store by Insight Economics (IE) dated 2 August 2018 provided as part of the resource consent application.

The proposal contains numerous elements additional to the proposed supermarket. Property Economics have focused their review of potential economic impacts on the new supermarket and not the balance of the elements that form part of the wider proposal.

As requested by CCC, Property Economics has focused their review on potential economic effects, review submissions against the application and outline a high-level position on some key policy objectives. As such, the overview considers the appropriateness of the approach and methodology utilised and outlines whether any material trade competition and retail distribution effects are likely to be generated by the proposed development in the context of the RMA, and considers relevant objectives in the Strategic Directions and Commercial chapter of the Operative City Plan

Property Economics then contextualise potential retail distribution effects in terms of commercial centres in respect of the surrounding centre network as well as potential implications on the development and recovery of the Central City. Ultimately, Property Economics forms a view on whether the development can be supported from an economic RMA perspective.

## 2. DEVELOPMENT OVERVIEW

The proposed supermarket development involves the establishment of a new PNS supermarket of 6,890 sqm GFA. The development will be located on a 1.6ha site adjacent to the existing Foodstuffs South Island head offices.

The proposed Pak N Save is a relocation of the existing PNS store from the Northlands Shopping Centre to a stand-alone building on the subject site. The subject site is located approximately 1300m north of the existing Northlands / Papanui Key Activity Centre (KAC) along Main North Road.

The proposed PNS store's floorspace can be broken down into 4,678 sqm retail trading area, 1,281 sqm back-of-house area for warehousing and storage, and 621 sqm of floorspace for office and staff facilities. There is also 310 sqm of additional floorspace accounted for by corridors, stairs, lifts and ramps.

## 3. REVIEW

This section of the peer review evaluates the methodology and approach to determining growth, retail expenditure and subsequent supermarket demand.

The IE assessment takes a broad perspective of the market (too broad in Property Economics view) to assess demand and growth relevant to the proposed store. Property Economics consider this market to go well beyond the realistic core trade catchment of the proposed PNS store, encroaching into other supermarket (and PNS stores) core markets. This has the effect of amplifying the market size and potential of the proposed store.

However, Property Economics do not see the demand and growth aspects of the economic analysis as being particularly pertinent in this instance given the proposal is in effect a relocation of an existing PNS supermarket (albeit acknowledging it is slightly larger). It is useful to have the demand and growth projections to ensure the market is not falling away (which this market is not projected to do), but the new PNS store is basically a circa 1km relocation of an existing successful store and will service the same market.

As such the economic effects of the proposal are largely already 'in play' in the market from an economic impact potential perspective and the sale diversion will predominantly come from the existing PNS store being relocated.

The proposed store would not be equivalent to a new store entering the market, but more simply a relocation of spend and shoppers already shopping at PNS locally. As such, the economic impacts of the proposal cannot realistically reach a threshold where significant 'new' adverse economic effects are generated. While there might be some minor trade diversion from other stores due to better access, new store, easier parking, etc, this is unlikely to reach a level that can cause significant trade competition effects.

Retail distribution effects need to be assessed against whether the repatriation of all PNS spend from its current store in Northland's Mall would cause significant adverse effects to the Papanui KAC as a whole. The Papanui KAC is the centre most likely to observe adverse economic impacts as a result of the new supermarket development.

The new PNS is in relatively close proximity (circa 1km north along Main North Road) from Papanui and Northlands Mall. Given this proximity, Property Economics consider it unlikely that the relocation will lead to wholesale changes in local resident shopping patterns. Shoppers at the new PNS store are still highly likely to utilise Papanui / Northlands for their general merchandise shopping similar to current levels.

Given this, the following contextualises these retail distribution effects further in terms of potential impacts on the Northlands Shopping Centre, Christchurch Central City, Northwood KAC and other smaller commercial centres within Christchurch City. Property Economics also consider the appropriateness of alternative locations (commercial centres) that could potentially accommodate the proposed supermarket.

### Potential Impacts on Papanui KAC / Northlands Shopping Centre

A key question from Property Economics perspective in relation to economic impact considerations is whether the Northlands Mall / Papanui KAC is likely to be adversely affected to a degree that it alters the centre's amenity, vitality, role and function, future growth potential and status in the commercial hierarchy of the city. Given the size and number of national banner anchor tenants in the KAC, it is implausible to suggest the Northland's / Papanui KAC would have its KAC functions and future potential compromised. KAC's are large multi-faceted centres that are not reliant on a single retail store, particularly a homogeneous convenience store that is moving just a short distance up the road.

Also given projected market growth in the area and the low level of store vacancy in the Papanui KAC (est. at 2.6% of GFA), the vacated PNS tenancy in Northlands Mall is likely to be re-tenanted within a short period of time by other retailers offsetting any potential sales losses and impacts, albeit the PNS sales would not be completely offset due to its store sales productivity being one of the highest for a retail brand in the country. Furthermore, there is also a national banner supermarket brand still in Northlands meaning this store type will still be available in the KAC.

Additionally, from a practical perspective having been involved in many supermarket resource consent applications over the last two decades, there would be difficulty either finding or cumulatively acquiring a 1.5-2.0 ha land holding typically required to support the development of a new PNS supermarket in and around the Papanui KAC.

### Potential Impacts on City Centre (Re)development and Recovery

Another important consideration is whether the proposed new store would adversely affect the rebuild and recovery of the Central City area. In Property Economics view this application would not, for the simple reason that the store is already in the Papanui market and the proposal is simply a relocation.

Furthermore, the central area of Christchurch already has a high performing, well established PNS supermarket on Moorhouse Avenue (as well as two other national banner supermarket brands – New World and Countdown). None of these stores would close as a result of the proposed development. As such the proposed development is considered to have no potential to adversely affect the CBD's rebuild and recovery, and ultimately its long term performance, role and function.

### Potential Impacts on Northwood Supa and Other Commercial Centres

The other centre of focus is the Northwood / Styx KAC which has vacant commercially zoned land available for additional retail development on the south side of Radcliffe Road (opposite the Northwood Supa Centre).

This KAC destination already has two supermarkets in its composition (New World and Countdown). From an economic perspective, adding a third supermarket would not add to its role and function. However, it would consume a significant amount of land designed to accommodate smaller scale (than PNS) future general merchandise retail store types and commercial service activities.

The Northwood / Styx KAC location is also considered to be a more inefficient location in terms of satisfying a large proportion of PNS Papanui's current market. This market primarily consists of the more established areas in the northern and north-western suburbs of the city.

The PNS supermarket in Southbrook, Rangiora also reduces its northern (Waimakariri) catchment limiting the potential for a PNS store to be established in the Northwood KAC over the foreseeable future.

There are also some other smaller future localised centres planned in growth areas in the surrounding market. These are small in scale and are not likely to accommodate a PNS supermarket as their role and function would need to change. Additionally, these localised centres are often located in more internalised growth areas / suburbs than on major arterials, which PNS require for operational and function purposes.

Also, a PNS supermarket in a more internal suburban environment would create a significant volume of truck movements into and out of the suburb. This would create tension with residential neighbourhoods by lowering amenity in the suburb and likely increase safety concerns.

In respect of industrial land, Property Economics agrees with the conclusions in IE assessment that the loss of the subject land would not result in any meaningful adverse implications for industrial land supply and capacity in the city.

The small strip of local retail activity and zone land on the corner of Main North and Northcote Roads would operate and function as part of the wider development and elevate this centre's status, role and hierarchy from local to neighbourhood. This would not add retail distribution effects as once again the stores are already established in the market.

#### 4. SUBMISSIONS

There is a fairly even number of submissions both in support and oppose the application. Most of the submissions opposing appear to be on traffic and noise effects, which given the location and the busy road the development is sited and accessed from is not unexpected.

Two submissions lightly brush some economic issues - The Canterbury Regional Council (CRC) and New Zealand Transport Agency (NZTA).

The Canterbury Regional Council submission identifies two broad (potential) issues. The first appears to conflate two separate components of location and policy by raising a concern of the *"location of the development in industrial zoning inappropriate within the context of the CRPS"*. The location is fixed so the submission's link to CRPS is not clear. It appears the CRC submission means the proposed activity type (supermarket) in the industrial zone.

Both the applicant's economist and Property Economics have considered the industrial land supply question and identified there are no supply issues in that space, so in respect of economic effects on industrial land supply these are not considered material. CRC provide no evidence or material to identify industrial land supply is an issue and therefore no new material on which to reconsider Property Economics' position.

Furthermore, industrial activity in that location, given surrounding land uses (e.g. a school), might give rise to more reverse sensitivity issues than commercial activity. Also commercial activities are already operating from the site, and have existing use rights, so commercial in that location is not considered an issue by itself.

CRC also note that because the supermarket is moving outside the Northlands / Papanui KAC this may increase reliance on private vehicles. Again, no data is provided to support this submission point. This submission point appears to be based on theory rather than commercial realities as when considering market realities and where shoppers at PNS Northland's are likely to come from at present, a large proportion of shoppers travel down from north of the centre. As such the proposed new PNS store location would actually reduce travel requirements for these shoppers (given the limited cross over shopping for PNS shoppers), i.e. these consumers would not have to travel as great a distance to get to the PNS store

This would also 'free up' capacity within the Northlands / Papanui KAC given any new tenancy would not likely be as high a traffic generator as a PNS supermarket. Furthermore, the proposed store is located on Main North Road, so would have easy access from a main public transport route.

Whilst these submission points relate to traffic issues, they do have economic implications as well that should be considered. Ultimately CRC concerns appear to sit with the policy context.

NZTA have followed a similar path as CRC and focused on traffic and policy issues. Specifically, the NZTA submission purports the commercial use of industrial zoned land does not align to the policy context. This is addressed in my response above and appears a policy context issue with the CRPS.

## 5. ADDITIONAL QUERIES FROM COUNCIL

Council articulated a few additional questions as a result of the submissions which they sought Property Economics' opinion on. These were in relation to queries regarding PNS Northland's space being taken up by another supermarket as a permitted activity and whether this impacts the Property Economics assessment and conclusions.

The short answer is no it does not. First the query is considered speculation and not certain to occur, and second the opportunity for another supermarket to occupy the vacated space is not lost with any new supermarket a permitted activity, and the proposal represents a relocation not an additional supermarket to the market, so there are no problems with a supermarket potentially locating in the vacated space.

Another Countdown supermarket is unlikely to backfill the vacated space given its already in Northlands, so in reality the most likely options are New World and Fresh Choice. These are 'higher pitched' supermarkets that have higher priced goods so have limited cross over with PNS. Therefore, any back-filling potential by another supermarket is not undermined. Additionally, a smaller supermarket would have less carparking requirements which is arguably a better 'fit' for a shopping mall environment than PNS.

In respect of the higher-level objectives of the District Plan, Property Economics canvassed the Strategic Objectives and the Commercial chapter objectives, and consider the following objectives and policies support the application.

In respect of the Strategic Objectives 3.3.7 A - Urban Growth, Form and Design

- (iii) discusses a consolidated urban form that provides for urban activities in existing urban areas
- (vi) supports redevelopment of brownfield sites for business and mixed-use activities
- (vii) promotes the reuse and redevelopment of buildings and land
- (viii) improves overall accessibility

In respect of the Commercial Chapter 15 of the District Plan:

- 15.2.2(i) commercial activity is focused within a network of centres including neighbourhood and local centres
- 15.2.2(ii) enables the efficient use and continued vitality ..... of commercial centres ..... promotes their success and vitality
- 15.2.2(iii) supports the function of ..... neighbourhood centres as a focal point for convenience shopping
- Table 15.1(c) Neighbourhood Centre - describes what this centre would function and operate as (currently a local centre moving to a neighbourhood centre which Property Economics have no problem with from an economic perspective given the proposed commercial activity is in effect expanding an existing convenience (local) centre and has the same convenience function, and therefore supports 15.2.2(iii) identified above). Property Economics' understanding is a centre can change its position in the centre hierarchy if no other existing centre is adversely affected or has their role and function compromised or undermined from a retail economic perspective. There may be other planning related matters that are triggered by a centre's change in status, but from an economic perspective there are no material RMA issues of concern in this instance.

In summary the application is for a convenience activity in a convenience centre that does not adversely affect the role and function of any centre in the city's centre network. In retail economic terms, both a local centre and a neighbourhood centre play a convenience role and function, the difference in 'status' is primarily based on whether the centre has a supermarket or not.

## 6. SUMMARY

During the Replacement Plan hearings, Property Economics was against this site and surrounds being afforded a centre zone. The primary reason for this was the number of similar convenience centre zones in close proximity and no guarantees a quite large centre of small stores would result duplicating the same role and function of other centres in the area.

This application makes it clear that outcome is not sought, with a single new supermarket filling up the bulk of the land area subject to the application. This gives Council more confidence and certainty in the outcomes sought and the outcome to be delivered by the applicant. The application removes a lot of the uncertainty that remained during the Replacement Plan hearings and confirms the development is not simply replicating surrounding convenience centres.

In summary, from an economic impact perspective, in Property Economics opinion no existing centres are likely to have their role, function, vitality, and growth potential undermined or jeopardised as a result of the proposed PNS development. Furthermore, Property Economics consider many of the strategic objectives in the District Plan support the application when interpreted from an economic perspective overlaid with commercial market practicalities.

## **Appendix C – Transport Assessment**

**Transport planning Report  
On behalf of Christchurch City Council**

**In the matter of the Resource Management Act 1991**

**Application to establish a supermarket and associated fuel facility, ancillary  
offices, car parking, access, signage and landscaping at**

**171 Main North Road, Northcote**

**Application number RMA/2018/2029**

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## 1 Qualifications

1. My full name is Mark Andrew Gregory. I hold the position of Transport Network Planner at Christchurch City Council. I have been in this position since April 2013. I hold a BA(Hons) in Planning with Transport from the University of the West of England, UK and a Master of Engineering Degree (in Transportation), completed at the University of Canterbury.
2. I am a member of Engineering NZ, and serve on the committee of the national NZ Model User Group. I have expertise in the theory and practical application behind all tools and methods used in the Application, including extensive experience of developing models using methods referred to in this report.
3. I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

## 2 Key documents

4. The key documents I have used, or referred to, in forming my view while preparing this brief of evidence are:
  - Minute 1 of Commissioner, 24<sup>th</sup> September 2019
  - Application document, dated 7<sup>th</sup> June 2019 (TRIM 19/819845), including Integrated Transport Assessment (**ITA**).
  - Conferencing between CCC, CTOC, Abley Transportation, New Zealand Transport Agency (**NZTA**), on matters pertaining to modelling.
  - Conferencing between CCC, CTOC, Environment Canterbury (**ECan**) Abley Transportation, NZTA, on the Integrated Transport Assessment.
  - Safety Audit Report (dated 11<sup>th</sup> March 2019)
  - Model validation memorandum, CCC, for use of CAST model
  - Plan change evidence in Chief Andrew Milne (CCC) for the rezoning request put forth by Foodstuffs during the District Plan review process.

### 3 Summary

5. The location of the proposal is pivotal in the transport network, with the frontage road being historically recognised as one of two Core Public Transport (**PT**) routes, scheduled for significant upgrades including Light Rapid Transit (**LRT**) or similar.
6. The development proposal does not demonstrate responsiveness to the vision of the Regional and District Plan policies for a significant development on a core PT route. The proposed layout does not demonstrate integration with the PT corridor (for example, achieved through much greater proximity to PT stops, (including walking access that is direct, attractive, weather proof), integration with real time information systems and including suitably located trolley parks).
7. Development integration with the key PT routes is recognised by the Regional Public Transport Plan (RPTP) as a delivery mechanism towards strategic transport outcomes. The design response envisaged is one which integrates development and PT infrastructure such as to increase and enhance PT usage over time, and in tandem with more and higher quality services being provided.
8. The site is bounded by Northcote Road: A major arterial road as part of the Lyttleton Port – Southern Motorway Ring Road, identified as having a key freight function, including as an over dimensioned freight corridor and subsequently a route of regional significance. The Network Management Plan<sup>1</sup> and network modelling show significant growth in demand and user costs on this corridor, in the coming 30 years. \$13m is set aside in the Long Term Plan (LTP) to respond to significant growth in demand on Northcote Road.
9. The key concern at this stage is that the requirements of the development would be sensitive to the delivery of schemes of regional importance, potentially including the Main North Road Core Public Transport Corridor and Northcote Road Route Improvement projects. There are reasons set out through this report, and a lack of information currently to abate these concerns. For example, the future environment will likely include restricted access to and from Lydia Street that the Application possibly relies upon, and the requirements at the signalised access on Main North Road appear to be squeezing the bus lanes; space that needs to be safeguarded.

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<sup>1</sup> CCC's forecasting method of prioritizing intervention across the network based on need, and developed to be consistent with NZTA's One Network Road Classification policy

10. There simply is not enough information at this stage to support the technical assessment. The design outcomes do not demonstrate a responsiveness or the safeguarding of the Core PT corridor, and the modelling outcomes are generally over reliant on modelling limitations and the forecast operations of critical movements appear over exposed to forecast limitations, with implications on safety. Please note that an Independent Modelling Peer review has been commissioned.

11. There is also a live matter specifically affecting the 'Redwood Family Practice.'

12. Some of the Conferencing has been positive with a number of conditions agreed. However, it is not possible to support the Application at this stage.

13. The following are identified as important matters needing to be addressed, prior to a recommendation of support on Transport matters being advisable:

- a. Demonstrate the safeguarding of the Core PT route, including space to develop the corridor, and measures to mitigate delays.
- b. Demonstrate integration with the PT corridor, through design, such that Public Transport access is enhanced.
- c. Demonstrate that the site can function and operate with Lydia St as left in – left out, including delivery vehicle access
- d. Demonstrate the network effects, with all access movements operating safely, and with modelling risks suitably managed.
- e. Suitably demonstrate plausible mitigation of effects upon the Redwood Family Practice
- f. Address matters relating to safe cycle and pedestrian access to the site, including the facilitation of desire lines from the identified walkable catchment, including safe passage across Northcote Road.

14. If the above matters in paragraph 13 are achieved, then support could be given, but subject to conditions on themes<sup>2</sup> pertaining to:

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<sup>2</sup> Not including proposed detailed wording at this stage

- a. That any changes to the road network shall be subject to approval by the Delegated Authorities, at cost of the Consent Holder and to the satisfaction of the Road Controlling authorities.
- b. Requirements to continue Safety Audit processes and adhere to their outcomes. (Safety Assessment is covered in Section 7.5, page 68).
- c. The need to resolve access issues, including:
  - i. Reducing the number of accesses on Main North Road,
  - ii. Extending of Northcote Road median island to restrict right turn movements to and from the access referred to as the 'Oil Changers' (3-5 Northcote Road),
  - iii. Monitoring / reviewing the above Northcote Road access with a view to restricting access from Northcote Road, should a high turning demand prove to affect the capacity of the Northcote Road exit from Main North Road intersection.

Point ii and iii (above) have been agreed in conferencing. (Assessment of Access is covered in Section 7.4.2, page 63), and relevant summary of Joint Witness Statement is included in section 7.5 (page 68).

- d. The need to mitigate the potential network effects resulting from internal layout, including access onto the proposed roundabout (located 50m west of the proposed signalised access). The Applicant has volunteered a condition to install a gate preventing direct access to the roundabout from the Food Stuff International Ltd Offices, and to restrict access (by closing the gate) during periods when there are risks of effects.
- e. The need to monitor and if necessary mitigate effects of development traffic routing to the Northern Arterial Motorway, via Winters Road. (Assessment of inappropriate vehicle routing is covered in section 7.4.1, page 62).
- f. As part of the broader requirement to integrate with Public Transport, ensure provision of access infrastructure and bus stops, to the satisfaction of Council's Public Transport Engineer and Environment Canterbury.
- g. The need to monitor and review matters relating to staff car parking, and ensuring that on street parking does not occur (noting future scheme plans which will seek

to alter existing on street parking opportunities). (Covered in Section 7.5.2 (page 69) and 9.3 (page 77)).

- h. The need to manage time of day site access by delivery vehicles, such as to minimise conflicts with other users.

15. There are other matters which the Applicant may seek to resolve through conditions of consent, but with Policy ramifications. For example, the detailed design of the signalised access. At this stage it appears that the bus lane would be narrowed to accommodate the design, (also a subject of the Road Safety Audit) which directly contradicts the need to safeguard space for the Core PT corridor development.

16. Some of the above conditions have been the subject of discussion during the General transport conferencing session (see Section 7.5 (Summary of Joint Witness Statement on the matter of Transportation Assessment)).

17. In my opinion, there is a general need for a more coherent transport strategy. For example, the proposed parking provision explanation cites aspects of the 'parking reduction factors'<sup>3</sup> to justify a proposed parking provision less than the Transport Chapter minimums. These aspects include proximity to Public Transport and a Major Cycle Route. Yet in my opinion, meaningful integration with neither of these alternative modes is demonstrated at this stage. There is also the proposed use of Travel Demand Management (TDM) as mitigation of parking and access related effects, which would also rely upon quality integration with non-car based transportation.

18. From reviewing the Applicant's draft Conditions (received 5<sup>th</sup> November 2019), there are some key points of disagreement at this stage, including:

- a. Proposed condition 1 ("post opening monitoring of access") does not include the sought reduction of access points identified in this assessment, (see section 7.4.2), and doesn't specify the time of year when this monitoring would be undertaken. Paragraph 322 sets out concerns about seasonal variance in traffic generation. Undertaking a review in July would yield different outcomes to, say, November. Furthermore, the proposed condition is lacking a review action, which is a step backwards from the review actions discussed during Transport causing, which included specific mitigation (see Section 7.5).

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<sup>3</sup> See District Plan Chapter 7, Appendix 7.5.14

- b. Proposed condition 8: “Semi-trailer and fuel tanker deliveries shall be restricted to turning right from Northcote Road into Lydia Street”.

The assessment finds that the existing design of the Northcote Road / Lydia Street intersection is not suitable for the use as proposed, due to insufficient median width. This is discussed more in paragraphs 273 - 274 (page 65).

Further, importance of this matter relates to a likelihood of reducing access to / from Lydia Street as part of the Northcote Road Route Improvements scheme, particularly the restriction of right turn in movements from Northcote Road. This has been discussed including at the Transport Conferencing (section 7.5). The Applicant was requested to demonstrate that semi trailer vehicles can access Lydia Street via a left-turn-in movement, thus demonstrating non-reliance upon the right turn in movement . The Applicant has also stated that, in the event of access restrictions via Lydia Street, use of smaller vehicles would be acceptable mitigation. (However, I have questioned the Commercial reality of this proposal (paragraph 327)). This proposed condition seeks to establish an access arrangement via a movement that is identified as both inappropriate for the proposed scale of use and furthermore likely to be identified as requiring removal in order to deliver the Northcote Road Route Improvements, (a matter of Policy significance). Therefore, it is advised that the proposed (draft) Condition 8 is not appropriate at this stage.

- c. It should be noted that the draft Advice note states that the ‘Consent Holder is advised that the approval of Council’s Asset & network Planning team is required prior to the construction of the new signalised access...” This statement should make reference to the Joint Witness Statement, which also sets out the need for resolution from the Delegated Authorities, which are the Community board and Council, and not staff.

#### **4 Details of application**

19. The ITA sets out the Application in the executive summary (listed below), but also in more detail in section 4 (ITA p19)

- a. establish, operate and maintain a supermarket of 6890m<sup>2</sup> and associated fuel facility, ancillary offices, car parking, access, signage and landscaping at 171 Main North Road;
- b. provide an emergency coordination facility at 171 Main North Road;
- c. alter the existing site access and relocate existing car parking arrangements for the existing Foodstuffs South Island Limited Head Office at 165 Main North Road;

20. The site area as set out in the Application is mapped in the ITA on p5, (described on p29 of the Aurecon Planning report), from now on known as 'the site'.
21. The Application is reliant upon changes to the wider network (beyond just establishing access), including the changed lane and signal phase configuration at the intersection of Queen Elizabeth II (**QEII**) Drive / Northcote Road / Main North Road, which is not explicitly set out in the proposal section. However, this change will be captured through the (discretionary) transportation assessment.
22. The Applicant intends that the proposal would become operational from c2023.

## **5 Compliance assessment.**

23. The site is zoned mostly Industrial General (except the 3-7 Northcote Road which is 'Commercial Local' and a vehicle access zoned 'Residential Suburban').
24. Chapter 16 of the District Plan ('Industrial') makes no provision for the proposed activity (as either a permitted, controlled or restricted discretionary activity), and thus directs assessment as a Discretionary Activity. As such, Assessment includes that of Policy.
25. Notwithstanding the activity status, Chapter 7 would direct assessment (under the High Trip Generator rule) against all matters, including Access and manoeuvring, design and layout, heavy vehicles, accessibility if location, network effects and strategic framework.
26. Other matters of interest include:
  - a. Number of accesses: the area included within the Application includes five vehicle accesses via Main North Road, whereas the District Plan would require two.
  - b. Provision for allocated staff parking
  - c. Provision for design of parking layout

## **6 Receiving environment**

### **6.1 Planning context**

27. Consideration of the future baselines, most notably the representation of neighbouring site “2 Lydia Street” has been a discussion point in the Transport Assessment.
28. Although purchased by the Roman Catholic Diocese of Christchurch, with publicised intent to operate an educational facility, the processes to rezone the land have not commenced. Furthermore, a Resource Consent granted in 2015 to establish a netball centre will likely not be given effect to.
29. The most reasonable approach to assessing the future baseline is to include its current use, noting that any future land use application for adjoining sites will be assessed on their own merits.
30. A legal Right of Way (**ROW**) passes through the site. Any revisions to accesses will need to respect the availability of right of way to those adjoining land parcels (including 2 Lydia Street), shown in Figure 1. Any changes to the alignment of the ROW (including through possible conditions of consent) would require to be surveyed and registered with LINZ, (at Consent Holders’ cost).



Figure 1: ROW as shown on Council's database

## 6.2 Anticipated Transport network changes defined within the receiving environment

### 6.2.1 Effects of the Christchurch Northern Corridor (CNC)

31. The CNC comprises a package of transport measures, including the Christchurch Northern Motorway and management of the “Downstream Effects” (Downstream Effects Management Plan (**DEMP**)), centred around Cranford Street, and a package of measures including Park and Ride and Express bus services.

32. Whereas historically, Main North Road has been a Major Arterial route, serving longer trips connecting key employment sites to the northern suburbs and beyond, this ‘mobility’ function will be superseded by the CNC to a great extent.

33. A detailed description of the known effects of the Northern Corridor will be given in analysis of Future Baseline (2021) changes relative to the present day, covered in section 7.2.4.1 (“Difference between Future Baseline (2021) and ‘present day’ model”).
34. However, there are uncertainties around the exact details of the CNC which has bearing on the Application. The modelling supporting the Application is based on a version of the city-wide network model (‘CAST’), calibrated for this Resource Consent application in September 2018, before Key information around the design of the CNC was known.
35. In August 2019 it was decided that revised modelling would continue with this version, owing to imposing time constraints.
36. As of 26<sup>th</sup> September 2019 Council staff have approval to widen Cranford Street corridor to allow for an additional lane north and south between Innes Road and Berwick St. However, use of this extra capacity either as a general traffic lane, or as a High Occupancy Vehicle lane is yet to be resolved.
37. The details of how the additional Cranford Street capacity will be used appears contingent upon decision of partners (Environment Canterbury, Waimakariri District Council and NZTA), especially in terms of whether or not the NZTA include a High Occupancy Vehicle Lane on the Northern Motorway.
38. Due to uncertainties, it has not been possible to include a future baseline scenario which includes any of the options.
39. It is possible that either option would significantly reduce the likelihood of the predicted outcomes identified through modelling, from eventuating.
40. I have attempted to provide some information around the extent to which the modelling outcomes may be changed, by applying a second general vehicle lane to Cranford Street in the development CAST model, and comparing the difference between this hybrid scenario and the current future baseline assumptions for 2021.
41. The outcome did not include any significant change in demand around the Application site. More traffic was drawn to Cranford Street with the additional lane, but came from the surrounding local road network. This suggests that:

- a. The value of the second lane was in reducing local rat running effects, more than wider network changes.
  - b. This finding is also synonymous with the conclusion that, post CNC, the type of traffic passing the Application site changes to becoming more 'localised' rather than supporting the longer distance trips that will be using Cranford Street.
42. The impacts of the CNC could potentially worsen the future baseline. Measures to reduce car travel on the CNC would likely cause re-routing as well as a mode shift. There is a hierarchy of behaviour change responses to delay, and changing of route would more likely occur before changing of mode choice.
43. Implications of the changing of route could change the forecast reduction in movements, especially on Main North Road, highlighted in section 7.2.4.1 (Difference between Future Baseline (2021) and 'present day' model).
44. In my opinion, there would be very limited value in exhaustively modelling all possible permutations, given that some of the proposals, especially the use of High Occupancy Vehicle lanes, are very difficult to predict, especially in terms of demand (behaviour change).
45. All things considered, it is possible that the CNC changes, as presently unknown, could change the network around the site such as to increase or decrease forecast demands, and therefore increase or decrease the practical spare capacity and therefore Assessment of Environmental Effects. Very limited evidence so far suggests a neutral outcome.
46. The possibility that Environment Canterbury run express bus services to Kaiapoi past the site frontage (instead of the Northern Motorway) also cannot be discounted at this stage.

## **6.2.2 Planned Network changes (Long Term Plan)**

### *6.2.2.1 Northcote Road Route Improvements*

47. The current LTP includes 'Route Improvements' for Northcote Road, currently scheduled 2025-26 and allocating \$13.5m.
48. The project will aim to reduce congestion in the Northcote Corridor by increasing capacity. It should be noted that this does not necessarily mean 'four-laning,' (as referred to in ITA), as more dynamic and intelligent forms of capacity increase

are being considered. There is also a growing case to bring this funding forward. Planning is scheduled for the current financial year and is well underway.

49. Any option for the corridor will likely result in the need to reduce turning movements to and from the corridor. Should the proposal be approved, the consented plans should include contingency in its design in the event that an option for Northcote Road is preferred, which requires Lydia Street to be changed to a 'left in-left out' intersection.

#### 6.2.2.2 *Greater Christchurch Public Transport: A Case for Investment / Regional Public Transport Plan*

50. Improving Public Transport (**PT**) is a cornerstone of current transport policy and Investment Directives. The LTP is responding to the Regional Public Transport Plan (RPTP), of which CCC are a crucial delivery agency.

51. The current LTP (2018 – 28) rationale includes mode shift targets, and plans to do so through improved journey time reliability and increasing accessibility to PT infrastructure.

52. Main North Road has long been established as a Core PT route<sup>4</sup> with longer-term aspiration for Light Rapid Transit (LRT) operations. This goal is currently being realised through the RPTP, with the Case for Investment focussing on a stepped programme, initially establishing bus priority in the near term.

53. The development proposal has significant impact on the future direction, by including more traffic signals on Main North Road, with potential to add to the delay of PT, against policy direction seeking reduction and removal of points of delay, and safeguarding options for either Light Rail or Trackless trains.

#### 6.2.2.3 *Network Management Plan and Road hierarchy*

54. The District Plan (Chapter 7, Appendix 7.5.12) includes the roading hierarchy, developed in accordance with the national 'One Road Network Classification'<sup>5</sup> principals. It shows that Northcote Road is a Major Arterial Road and Main North Road (on the site frontage) is a Minor Arterial Road

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<sup>4</sup> Christchurch Transport Strategic Plan, 2012-42, p37, Canterbury Regional Public Transport Plan, Land Use Recovery Plan

<sup>5</sup> ONRC developed by NZTA in 2016

55. Major arterial roads are described as:

*State Highways and key roads in Christchurch District that cater especially for longer trips. Major arterial roads are the dominant elements of the roading network which connect the major localities of the region, both within and beyond the main urban area, and link to the most important external localities. Some major arterials, particularly some state highways, serve an important bypass function within Christchurch District, directing traffic through it to areas beyond. They are managed to minimise adverse effects from access on network efficiency. All motorways within Christchurch District are classified as major arterial roads.*

56. Minor arterial roads are described as:

*Roads that provide connections between major arterial roads and the major rural, suburban and industrial areas and commercial centres. Generally, these roads cater for trips of intermediate length. They will generally connect to other minor arterial roads and major arterial roads and to collector roads. Arterial roads provide the most important movement function and as such require the highest degree of movement function protection. They may also define the boundaries of neighbourhood areas.*

57. The Network Management Plan (**NMP**) is a forecasting process undertaken by CCC<sup>6</sup> for informing investment programming by identifying future service gaps in the network, in accordance to core functions, by time of day, and by future modelled scenario year. The NMP shows that for the QEII Drive / Northcote Road / Main North Road intersection, there is a forecast increasing user cost for all users, including for freight and Public Transport, measured across 2021, 2031 and 2041, as shown in Figure 2:

<b>Total Daily Service Cost Index</b>			
<b>User:</b>	2021	2031	2041
Cycling	158	176	196
<b>PT</b>	<b>3,105</b>	<b>3,090</b>	<b>3,162</b>
<b>Freight</b>	<b>887</b>	<b>915</b>	<b>1,047</b>
General Traffic	12,626	13,008	13,721
<b>Total</b>	<b>16,776</b>	<b>17,189</b>	<b>18,126</b>

*Figure 2: Network Management Plan forecast user cost, by year, QEII Drive / Northcote Road / Main North Road intersection*

<sup>6</sup> And in accordance with the NZTA One Network Road Classification (ONRC) principals

58. A key theme of the assessment will be around the management of the QEII Drive / Northcote Road / Main North Road intersection, with respect to prioritising one route over another. The modelling and assumptions made in support of the AEE have been required to respect the road hierarchy, in order to ensure that the operation changes do not detriment the Major Arterial Road. This position is also informed by specific network modelling, which estimates how much 'green time' to give the competing routes at the intersection, in order to achieve an optimally efficient network.
59. Although the modelling section reports on numbers of vehicles, the purpose of the journeys being measured should be an important consideration in drawing conclusions.
60. Although both roads carry high volumes (and will continue to do so), the traffic on Northcote Road will be associated with longer journeys by distance, than traffic on Main North Road. Longer North-bound trips will switch to the CNC when it opens in 2020. The traffic on Main North Road will be more associated with local and access based movements (noting proximity to the Key Activity Centre (KAC), including Northlands Mall). Many of these trips would be targeted by mode shift policies and aims, especially noting the aspirations for the Main North Road core Public Transport corridor.

### **6.3 Road safety assessment**

61. A synopsis is provided, although brief as the ITA covers this off in more detail.
62. The QEII Drive / Northcote Road / Main North Road intersection has ranked consistently on the past intersection safety risk lists ('KiwiRAP'), and is currently ranked as the 14<sup>th</sup> worst intersection. This is a calculated metric, which accounts for the number of crashes in terms of exposure ('volume') outcome severity. The rate of injurious outcomes is considered very high.
63. Main North Road / Cranford Street is ranked at 65<sup>th</sup>, lower in part due to the rate of injurious outcome being 'medium'.
64. Figure 3 shows the crash history (injury crashes only) on the adjacent network: Main North Road between Cranford Street and QEII Dr (inclusive), for the past five complete years (2014-18). Analysis (including all crashes) shows that of all reported crashes, 35% resulted in injury (including serious), and 7% serious

injury only. As explained above, the rate of injury is considered very high at the QEII Drive / Northcote Road / Main North Road intersection.

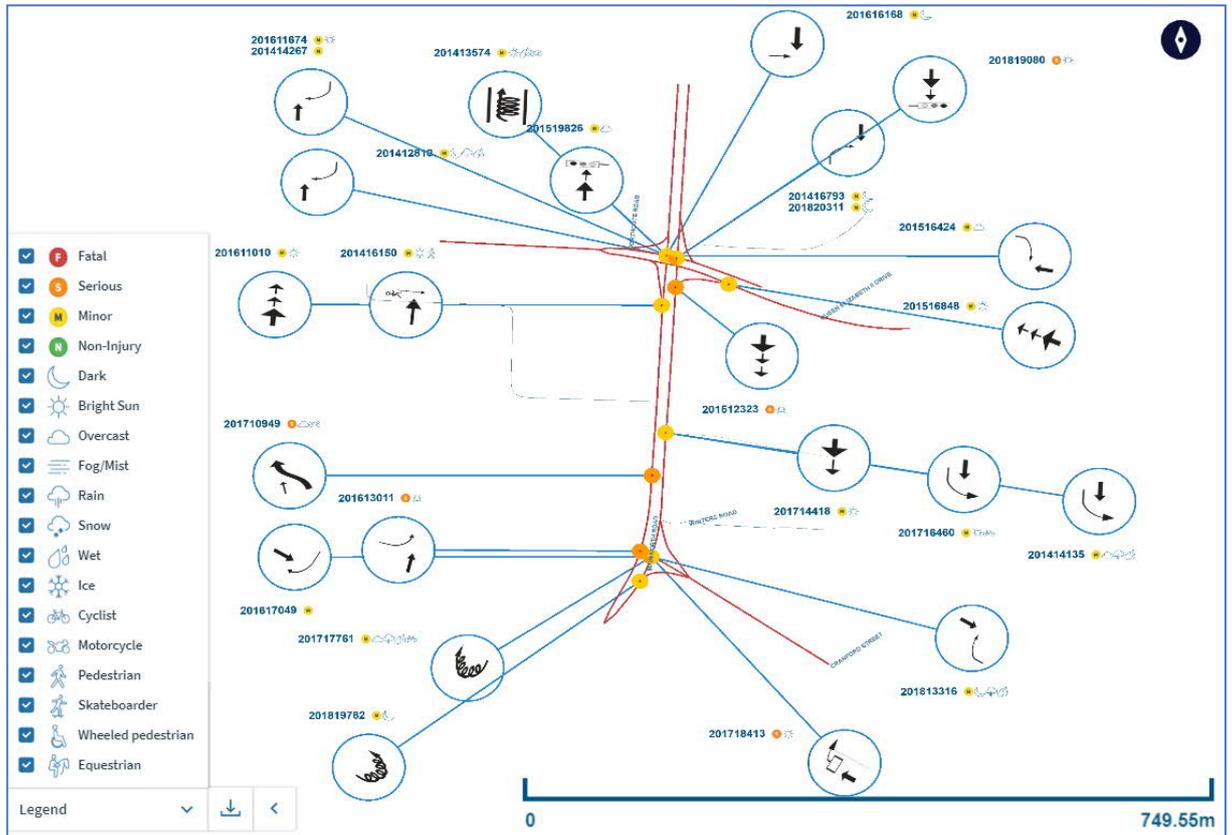


Figure 3: Figure 4: Collision diagram - crashes resulting in injury, 5-year period (2014-18), Main North Rd: Cranford St – Queen Elizabeth II Drive (from NZTA Crash Analysis System (CAS) query).

65. A brief description of crash types and parties involved is shown in Figure 5

Crash type category	%	Crash party	%
Crossing/Turning	29%	Car/Wagon	77%
Rear end/obstruction	22%	Van	5%
Bend-Lost control/Head on	7%	SUV	11%
Overtaking	6%	Truck	1%
Straight-Lost control/Head on	3%	Bus	1%
Miscellaneous	1%	Motorcycle	1%
Pedestrian vs Vehicle	1%	Moped	1%
		Cycle	1%

Figure 5: Brief summary of crash outcome based on crash query in Figure 3, five years, all crashes, by type and party involved

66. Figure 5 shows that the biggest crash group is 'crossing / turning', followed by 'rear end / obstruction.' The former crash type tends to result in a higher proportion of injury outcomes, relative to the latter. The latter are typical crash outcomes in more congested environments where there is variability in vehicle speeds.
67. Measures to reduce crossing and turning type crashes are considered in the Joint Witness Statement related to establishing a future baseline scenario, wherein the intersection layout and operations at the QEII Drive / Northcote Road / Main North Road intersection are considered in part to reduce these crash types. Presently, some turning movements are allowed to 'filter' (meaning turn right across oncoming traffic when clear). However, there has been a recent shift (2018) in signal design practice requiring turning movements to be exclusively signalised, where they give way to two or more lanes of oncoming traffic, as in this case. This is an outcome sought in the QEII Drive / Northcote Road / Main North Road intersection future baseline and development model scenarios.
68. Figure 5 also shows crash parties. There are no anomalies shown. There is one pedestrian crash resulting in minor injury and two crashes involving cyclists, resulting in minor injuries. This does not suggest that there is an existing safety problem affecting pedestrians and cyclists.
69. However, the existing observed safety performance is unlikely to remain unchanged in the future. As well as the design changes identified above (paragraph 67), the CNC changes are expected to transform operations as well. (This is described in more detail in section 7.2.4.1, "Difference between Future Baseline (2021) and 'present day' model). The changing turning movements and intersection management may or may not fully resolve the more urgent crash outcomes, and will be monitored post CNC.
70. It is also unclear as to how development traffic would affect the crash rates. It could be expected that the removal of filtering (described above) could be a major mitigating factor. A Road Safety Audit process is underway, being undertaken in accordance with NZTA practice guidance. This requires that audits be carried out at various project stages, and this process would continue into the 'detailed design' phase, should Consent be granted.

## **7 Assessment**

## 7.1 Assessment of Policy

### 7.1.1 Summary of policy outcomes

71. The Policies considered are a suite, with Urban Development Strategy (UDS) feeding into the Canterbury Regional Policy Statement (CRPS) and delivered through the Regional Public Transport Plan (RPTP) and Regional Land Transport Statement (RLTS). Some of the analysis is repetitive, indicating a very clear direction.

72. The Policies advocate that:

- a. Activities such as those proposed should be located at or close to a Public Transport Hub / Key Activity Centre, and / or be integrated with Public Transport infrastructure, to ensure the success of increasing PT patronage in tandem with ongoing public investment.
- b. Provide walking and cycling access which is attractive.
- c. Avoid effects on Regionally Significant Infrastructure. This could include the Main North Road core PT corridor development and the Northcote Road Route Improvement.

73. Policy combines transport and land use objectives in a way that is especially relevant to this Application. The Strategic Policy aims call for investment in transport infrastructure that keeps pace with development, but also envisages that integration between land use and transport, implicitly PT (RPTP) is a key delivery mechanism of a step changed policy approach.

74. A useful synopsis from the UDS update ("Our Space"): *"If traffic volumes increase at the same rate as population, there will be more congestion and longer journey times. Further major investment in the road network is not scheduled. For Greater Christchurch to remain productive, the integration of land use and transport planning is therefore essential to managing our future urban growth"*.

75. There is an identified need for PT patronage to increase in Greater Christchurch, as the most resource and environmentally efficient manner of supporting long term growth and strategic objectives. The RPTP takes a realistic approach to this process, through a step change process, currently being programmed for funding through the Case for Investment. The significance of the RPTP approach is the role of development in the delivery of PT outcomes, but also one which increases in tandem with investment over time, through the step change approach.

76. The development proposal aims to commence operations at the start of the second step of the RPTP: “Tactical transition” (period to 2028). This aims to deliver growth in PT to prepare for the post 2028 “Long-term” phase. The Long-term phase anticipates an increase in transit-oriented development, such as to support major investment in transformative PT options, specifically for the two Core PT corridors, including Main North Road. The success of this PT strategy, which has significant public support, is partly dependent on developments such as this being developed to be Transit oriented, and poised to work in tandem alongside major investment.
77. The proposed activity is moving away from a core PT hub, and is becoming less accessible by Public Transport. There are also concerns that it could undermine strategies which are likely to be resolved as ‘regionally significant’, including development of the Core PT route and Northcote Road Route Improvements.
78. The current level of access (at Northlands Mall) involves a 250m walk between the supermarket access and the PT interchange on Main North Road. There is access to seven bus routes, including the Orbiter and Blue Lines which run at 10 minute frequencies.
79. The proposed site includes a lower level of access, noting that the Orbiter and 28 turns right into Cranford Street and does not pass the site. These services do stop at the St Joseph’s bus stop, just south of Cranford Street, which would be a 400m walk from the proposed Supermarket access. 400m is considered to be maximum distance that most people would be prepared to walk for a bus, given a choice of transport modes available.
80. The proposed development response to the enhancement of access by active modes is limited. Although there is a pedestrian crossing proposed at the Main North Road signalised access, it is not known how cyclists will arrive at this crossing location, or whether they will be catered for by the crossing. Furthermore, there would be limited ability for pedestrians to safely cross Northcote Road, rendering the local walkable catchment as less likely to arrive on foot, or safely. The geographic extent of the walkable catchment is also limited, and noting that it includes a mostly low-density residential area. Furthermore, proposed walking connectivity within the site is indirect and does not encourage people to walk.
81. There is concern about the impact of the proposal on the Northcote Road Route Improvement. The improvement of this corridor will include an increase in design

capacity to carry a forecast significant post-CNC demand flow rate. Detailed planning has been underway since July 2018, and ongoing with the NZTA, and there is a \$13m allocation in the current LTP. Planning work is suggesting that the preferred option would likely require restricting of turning movements to and from Northcote Road. This scheme is supported by Designations included in the District Plan, and planning is being progressed with NZTA.

82. From a policy context, it is very possible that the Northcote Road route improvement would be included in the Regional Land Transport Plan, and may also be resolved by the Regional Transport Committee as “Infrastructure of Regional Significance.”
83. The Applicant has been advised of this concern, and furthermore the preference of the Road controlling authority that the development include a degree of access versatility and non-reliance on a sole access option (e.g. right turn into Lydia Street), particularly concerning proposed servicing arrangements. The JWS indicates acknowledgement of this point, and that alternative options would be available. Nonetheless, the scope for the Consent Holder to undermine the design outcomes of a future scheme remains a concern.
84. Overall, from interpreting the policy, it is reasonably concluded that better sites could be chosen for this activity in pursuance of achieving UDS objectives.

## **7.1.2 District Plan Policy**

### *7.1.2.1 Objective 7.2.1: Integrated transport system for Greater Christchurch*

85. *“Safe and efficient for all modes”*: The Applicant suggests that a reduction in u-turn activities from the Foodstuffs head office site constitutes an improvement to safety. However, to put this in context, the CCC traffic count has counted zero vehicles undertaking a u-turn manoeuvre, and no recorded crashes involving such manoeuvres.
86. *Effects of changes to the network will outweigh the benefits of reducing the u-turn manoeuvres.*

### *7.1.2.2 Policy 7.2.1.2: High Trip Generating Activities*

87. Policy matter a.(iii) requests accessibility by a ‘range of modes and encourage public and active transport use’. At this stage, there is no demonstration that this policy matter has been responded to. There are still live matters including the

need to develop suitable internal walking linkages and address matters of walking and cycling accessibility, including across Northcote Road. The key word is 'encourage' which should be clearly manifest in design, such as to demonstrate responsiveness.

88. Policy matter a.(v) requests 'patterns of development that optimise use of the existing transport system'. It should be noted that the Applicant proposes substantial change to the network to accommodate the development, with additional conditions identified through this report. To some extent, the work undertaken by the Applicant in developing a future baseline would respond to optimising use.
89. Policy matter a.(vi) requests that the development 'maximise positive transport effects'.
90. Policy matter a.(vii): "avoid significant adverse transport effects of activities where they are not permitted by the zone in which they are located".
91. Policy matter a.(ix) requests providing for the transport needs of people who mobility is restricted. Although accessible parking is proposed, the current internal walking layout may not be as easily navigable for one accessing the site in a wheelchair.
92. Policy matter a.(x) requests 'integration and coordination' with the transport system. This still requires demonstration. The proposal is located on a core Public Transport corridor, and should be a Public Transport oriented development, with frontages which engage with PT infrastructure. Instead, the fuelling station appears to be the primary regime, with other access modes marginalised by comparison.

#### 7.1.2.3 Policy 7.2.1.3: *Vehicle access and manoeuvring*

93. Policy requests that developments "Provide vehicle access and manoeuvring, including for emergency service vehicles, compatible with the road classification, which ensures safety, and the efficiency of the transport system."
94. This advocates that the development minimise impacts on the Arterial road network, the core PT corridor, and provides safe access for all users. This may be achievable through conditions.

7.1.2.4 *Policy 7.2.1.4: Requirements for car parking and loading*

95. Policy a.(ii) requires rationalisation of on-site parking, where it can be demonstrated that any reduction would be able to meet anticipated demand. The proposal is not planning to include marked staff spaces, and there would need to be checks and balances to ensure that the proposed mitigation Travel Demand Management (**TDM**) is successful.

7.1.2.5 *Policy 7.2.1.5: Design of car parking areas and loading areas*

96. Policy matter a.(ii) requests that it ‘function and be formed in a way that is compatible with the character and amenity values of the surrounding environment’. There may be need for controls around the timing of delivery vehicle access unless sufficient alternative mitigation is provided on effects upon residential amenity.

7.1.2.6 *Policy 7.2.1.6: Promote public transport and active transport*

97. Policy matters a.:

- (i): “ensuring new, and upgrades to existing, road corridors provide sufficient space and facilities to promote safe walking, cycling and public transport, in accordance with the road classification where they contribute to the delivery of an integrated transport system”.
- (ii): ensuring activities provide an adequate amount of safe, secure, and convenient cycle parking and, outside the Central City, associated end of trip facilities;
- (iii): “encouraging the use of travel demand management options that help facilitate the use of public transport, cycling, walking and options to minimise the need to travel”

98. At this stage, it is not known how the site integrates with cycling networks. TDM is proposed, in lieu of providing marked on site staff parking. However, little is known about this proposed approach, including targets, methods, performance indicators or monitoring.

### 7.1.3 Greater Christchurch Urban Development Strategy (GCUDS) / Greater Christchurch Settlement Pattern Update (2018 – 48)

99. The purpose of GCUDS is to set out policy for the long-term development pattern of the Greater Christchurch area, which considers the inter relation between land use and transportation needs. It considers the competing transport needs within this framework, including the need for

- ‘internationally competitive freight’,
- ‘public passenger transport use...encouraged through the provision of consistent, high quality infrastructure, excellent services and by ensuring easy, direct access through new and existing development...’
- Clear emphasis on walking, cycling, and other ‘non-car’ modes of transport, recognising congestion as an impediment to a sustainable and prosperous economy, society and environment.

100. GCUDS is developed based on extensive analysis of census data and ongoing monitoring of sociological changes. It identifies the shape and form that enables the Greater Christchurch Area to continually evolve into the best, most prosperous conurbation that it can be. The success of the strategy has implications upon the ongoing prosperity and opportunity. The strategy is realistic inasmuch as that it considers the range of possible futures, and generally plans for the ‘medium growth rate’.

101. GCUDS describes urban growth challenges as including the dispersal of development and reduced densities, resulting in urban form more reliant on longer distance connections, poorer walkability and less access to Public Transport.

102. It describes key approaches to these issues as being the increase in densities and targeting of major development around Public Transport hubs. The proposed movement of the Supermarket away from the Northlands Transport hub seems to contradict this approach.

103. It also describes the need for investment into Public Transport that ‘keeps pace with development’; a matter responded to through the RPTP and the Greater Christchurch Public Transport Case for Investment on the effective delivery of Strategic Public Transport policy.

104. The Settlement Pattern Update “Our Space” (2019) is a progress and update report on the goals and ongoing relevance of the GCUDS strategy.

105. Figure 6 is an extract from ‘Our Space’ which explicitly shows Main North Road as a core PT route, identified as a rapid transit corridor, supported by intensification of development at Papanui. The implications of Figure 6 being achieved would include a much more populated walking catchment to the existing site at Northlands Mall, and expected increase in non-car access options through proximity to the Northlands PT interchange.

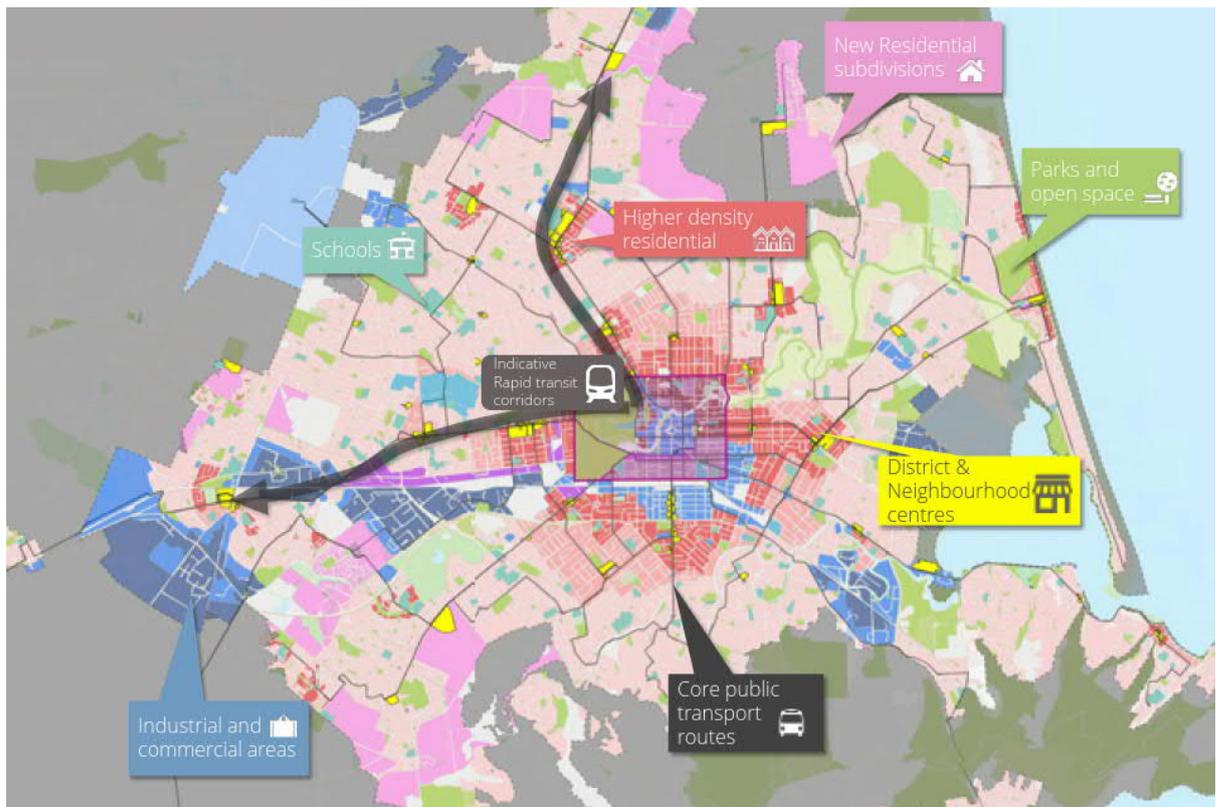


Figure 6: Settlement Pattern Review, p36, showing the Indicative Rapid Transport Corridor of Main North Road and proximity to higher residential density location (Papanui)

#### 7.1.4 Canterbury Regional Policy Statement (CRPS) / Regional Public Transport Plan (RPTP)

106. The CRPS and RPTP set out the Regional vision of the use of Resources and Development outcomes of Canterbury, and implementing the key objectives of the UDS. Chapter five largely focusses on the delivery of regionally significant infrastructure and integration of land use and transportation infrastructure, requiring that development (particularly commercial) be directed to locations offering maximum transport mode choice, with a view to minimising energy consumption. Chapter 6, which is the Region’s vision for the Rebuilding of

Greater Christchurch echoes this requirement and further states the “supporting (of) opportunities for exemplar approaches to infrastructure and urban form to lift the benchmark in the development of new urban areas in the Christchurch region”.

107. Summary of Chapter 5: Land Use and Infrastructure:

Objective 5.2.1 / Policy 5.3.1 seeks to promote more sustainable forms of development, minimise energy consumption, encourage greater mode choice, reduce trip distances and promote healthier transport options.

The proposal is located on a PT priority corridor, but services are mostly only available to the north and south, with reduced access to the Orbiter route, which covers a broader catchment.

108. Summary of Chapter 6: Recovery and rebuilding of Greater Christchurch

Policy 6.3.2 (7): “Supporting opportunities for exemplar approaches to infrastructure and urban form to lift the benchmark in the development of new urban areas in the Christchurch region.

109. The RPTP includes a thirty-year vision for Public Transport, and sets out a plausible action plan set into the short term (3 years), “operational turnaround”, medium term (10 years), “tactical transition” and long term, ‘Strategic Transformation’. The current business case approach for PT is working in tandem to secure funding for the longer-term vision.

110. Both the RPTP and GCPT build on the five core established PT routes, including the Blue line on main North Road as the basis for carrying PT development forward, as shown in Figure 7. The Main North Road corridor is planned for longer-term enhancement, which is identified as including either a Guided Bus, Light Rail or ‘trackless train.’

111. In the short to medium term, route improvements, including priority measures throughout the corridor) and increased frequencies are proposed as part of the strategy to improve accessibility to PT and increase patronage, in pursuit of strategic goals of the Urban Development Strategy.

112. The draft RPTP sets out a definition of Public Transport (PT) as being ‘a multi modal system which integrates passenger vehicles with ferries, walking,

cycling...’ and also states that “the integration of public transport and land use planning is essential to managing this growth”.

113. The role of integrating land use with PT, in the context of the longer-term strategy is shown in Figure 8.

114. The development proposal includes a signalised access, which, without appropriate mitigation will add delay to PT journeys and work against the strategy. However, if the development proceeds and provides direct and accessible walking connectivity to the bus stops, (that is, following the desire lines), and took other possible measures to integrate with the PT network (e.g. providing real time PT information within the development), this would represent a better response the aims of the RTPP.

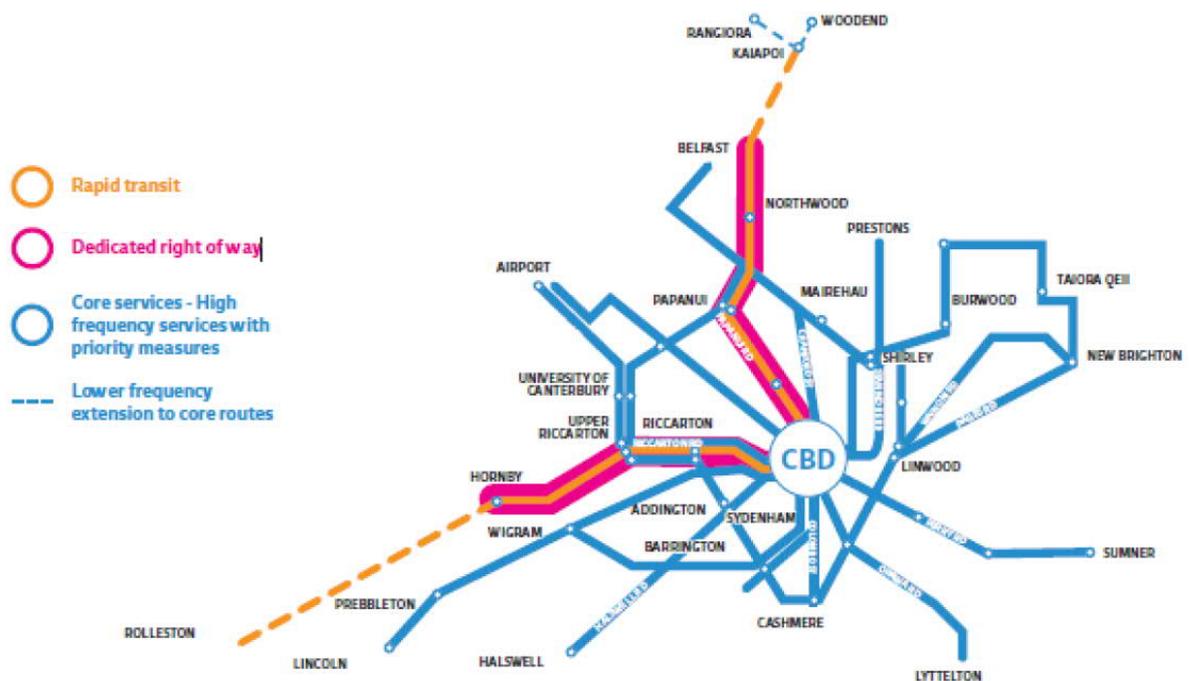


Figure 7: The identity of Main North Road as one of two corridors earmarked for regionally significant PT investment

Policy area	Short-term (Three years: 2018-2021)	Medium-term (Ten years: 2018-2028)	Long-term (30 years: 2018-2048)
<b>The network (integrated planning)</b>	<p>Complete the public transport future business case and identify and protect rapid transit corridors<sup>1</sup>.</p> <p>Complete the Future Development Strategy, and identify areas for future land use development that are integrated with, and highly accessible by public transport.</p> <p>Work together with partner agencies and developers to identify opportunities for public transport to be incorporated in design of areas of new development.</p> <p>Develop an integrated transport programme by June 2019.</p> <p>Engage with central government to secure an investment package for transport that includes significant investment to transform public transport and rapid transport to enable transport to shape urban form (i.e. urban development is focused on locations near public transport corridors).</p>	<p>Begin construction of infrastructure that will separate public transport from the traffic congestion (i.e. rapid public transport systems).</p> <p>Transit oriented development is supported, by ensuring urban development is focused on locations near public transport corridors, through future reviews of the Canterbury Regional Policy Statement and the District Plan.</p>	<p>Rapid transit services provided on the highest demand corridors and surrounded by transit oriented development.</p>

Figure 8: Role of land use – PT integration within the context of the PT strategy

## 7.2 Modelling and Assessment of Effects on road network efficiency

### 7.2.1 Background

115. During the Request for Further Information, I requested that the model be developed according to best practice and tested for robustness against the NZTA Model development guidelines, and that changes to network technical specifications be approved by the specified appropriate network managers. CCC was proactive in assisting the model development process, through supplying calibrated data from Council's CAST model,<sup>7</sup> including an assessment of validation for this specific use of the CAST model.

116. It is noteworthy that the safety audit states (section 2.1) that “the SAT [Safety Audit Team] considers that accurate modelling of traffic generated by the site will be critical to the success of this project. The outputs presented to the SAT suggest that the intersection will perform at or close to its limits and that any

<sup>7</sup> A network model of the whole of C

hristchurch specifically developed for predicting changes in route choice

errors or wrong assumptions in the modelling may cause the intersection to operate beyond its limits with consequent safety implications...”

117. Because of the expert conferencing, the modelling section of the ITA is being re-written. In addition, aspects of the modelling are also being independently peer reviewed,
118. As such, it is not entirely possible to identify all issues associated with the impacts upon traffic efficiency at this stage. However, there are outstanding concerns from the conferencing, and from my own review of the models.
119. The preferred methodology is the combined use of the “CAST model” demands into a Paramics microsimulation. In short, the CAST model is a powerful but reasonably coarse tool used to measure wider network changes. Paramics is a more precise and dynamic tool (a ‘vehicle following’ method, which simulates the interactions between individual vehicles), but covering a smaller area, often constrained by computing limitations. By combining the two tools together, predictions of both wider route choice impacts and more precise operation outcomes are available.
120. There was a period of some months whilst Abley worked on the modelling. However, during this time there was a realisation (from the safety audit process) that there would need to be changes made to the QEII Drive / Northcote Road / Main North Road intersection (described in detail in paragraph 150).
121. I took receipt of the modelling and commenced a peer review, but this was not completed due to a disagreement over the findings. Without going into too much detail, there were concerns that network changes had been proposed which were not part of the original methodology, and how these changes had been represented in the modelling. Further, there were specific attributes of the Paramics model, which did not capture the full effects and hence did not facilitate assessment. There was also concern that the Applicant was proposing too many changes to the network that could be rejected by the network managers (including the NZTA) subsequent to being granted Resource consent, thus obstructing the effect of the Consent.
122. The Applicant is reliant on changes to the QEII Drive / Northcote Road / Main North Road intersection, in the form of re-allocating lane movements. Consequently, it would be no longer possible to continue the existing signal operations, and hence the proposed change is significant.

123. The reason for the change originates from the Safety Audit (section 2.8.3). There were concerns raised about the length of the proposed right turn lane along Main North Road, providing right turn access into the site from the north. The safety concern was deemed 'serious,' with the proposed length adjudged not long enough, with overflow queues causing requirements for 'sudden decisions to change lanes in a congested traffic environment'.
124. In response to this, the Applicant has proposed an increase in right-turn lane length, by approximately 40m. However, the space required to undertake this change is currently utilised by the northbound right turn lane approaching the QEII Drive / Northcote Road / Main North Road intersection.
125. Therefore, the Applicant proposes to mitigate the impacts of the shortening of the northbound right turn lane, by reallocating lane layouts, such as to create two northbound right turn lanes, from Main North Road to QEII Drive.
126. However, even with this mitigation, there is still no certainty that the right turn bay will be long enough to fully accommodate the queues. In my opinion, there is unresolved risk surrounding this issue.
127. The intersection of QEII Drive / Northcote Road / Main North Road intersection is co-managed between the NZTA, CCC (and signals managed by CTOC). The right turn movement affected is significant, and predicted to increase in the future as it provides access between Papanui and the CNC. The changes would only be made possible through approval from the road controlling authorities.
128. The Safety Audit has also required some minor physical works as well, in order that the two proposed lanes could simultaneously support the turning movements of two heavy vehicles side by side, including realigning the kerb on the QEII Drive exit.
129. The proposed lane re-configuration is possible due to the forecast substantial reduction in northbound 'ahead' movements (towards Belfast) and therefore the anticipated ability to reallocate the northbound capacity to the right turn movements, forecast to increase significantly.
130. In light of this, there were uncertainties, including as to feasibility of implementation to the satisfaction of the road controlling authorities, and noting that NZTA (a critical party) had not been consulted at the time of notification.

131. The result of this was a period of conferencing involving the road controlling parties, including:

- the Applicant's Transport Engineers (Mr Dave Smith, Mr Jarred White, Abley),
- CCC, (myself, Mr Richard Holland),
- NZTA (Mr Ian Clarke, Flow)
- Christchurch Transport Operation Centre (CTOC), (Mr Bill Sissons)

132. Of note, Mr Clark is a senior figure in transport modelling, and Mr Sissons is Christchurch's foremost traffic signals engineer.

133. These sessions were productive, with most of the original points of disagreement being identified and resolved, and many of the questions raised from the original Request for Further Information being addressed also.

134. The outcome is a series of signed agreements.

135. The models used by the Applicant were provided on 23<sup>rd</sup> October and have been reviewed by Council in pursuit of missing information from the Conferencing, including extracting the extraction of key performance statistics, and a limited amount of sensitivity testing. It is anticipated that that the independent review (currently being undertaken by Quality Transport Planning (QTP) will provide a basis to resolve remaining disagreement.

## **7.2.2 Outcome Summary**

136. The modelling outcome is complicated:

- a. The network intersection operation models show that the effects of development do not add to the overall level of congestion at the intersections of QEII Drive / Northcote Road / Main North Road and Main North Road / Cranford Street.
- b. The conclusions drawn have given respect to most of the specific concerns raised by delegates of the road controlling authorities, for example, allowing for delays associated with pedestrian crossings (within the confines of model limitations).
- c. However, the demand modelling method includes risks and limitations that appear not to have been fully managed through the modelling process. (This will be discussed further in section 7.2.5, Points of disagreement). There are ramifications,

as critical turning movements, including as identified in the Safety Audit, are expected to operate very 'close' to capacity from commencement.

- d. There are some other concerns as well, including route choice and reliance upon certain outcomes which would not be consistent with major scheme aspirations (as discussed in the Policy section).

137. Figure 9 outlines the conclusions drawn through the Paramics work, presented after the modelling caucusing:

**Papanui Paramics Model Results PM Peak (1630-1730) - Final Models post Conferencing**

**Main North Rd - QE2 Signal Intersection (25% call of Eastern Pedestrian Crosswalk)**

Approach	Turn	2018 Base					2021 Base					2021 + dev					2031 Base					2031 + dev					
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	
North	Left	172	24	C		196	13	B			208	21	C			205	14	B			193	16	B				
North	Thru	730	63	E		212	50	D			221	59	E			195	56	E			226	70	E				
North	Right	160	123	F	65.8	111	54	D	37.0	D	62	56	E	42.4	D	177	139	F	66.6	E	96	65	E	48.9	D		
East	Left	164	14	B		390	22	C			447	14	B			397	21	C			472	16	B				
East	Thru	607	44	D		903	56	E			881	48	D			1095	48	D			998	40	D				
East	Right	152	59	F	41.5	126	133	F	53.6	D	124	70	E	39.4	D	119	139	F	47.8	D	129	98	F	37.8	D		
South	Left	192	82	F		161	40	D			132	33	C			153	122	F			189	64	E				
South	Thru	1272	103	F		876	67	E			730	67	E			824	161	F			732	106	F				
South	Right	160	126	F	103.0	518	68	E	64.3	E	684	74	E	67.5	E	467	150	F	153.2	F	684	120	F	107.0	F		
West	Left	161	103	F		78	40	D			125	30	C			219	122	F			263	87	F				
West	Thru	757	134	F		964	62	E			918	57	E			1087	131	F			1004	98	F				
West	Right	198	91	F	121.7	217	51	D	58.8	E	55	37	D	52.9	D	206	117	F	127.9	F	78	70	E	94.1	F		
Intersection		4728			87.0	4752			56.7	E	4588			52.4	D	5143			103.0	F	5065			75.8	E		

**Cranford - Main North Signal Intersection**

Approach	Turn	2031 Base					2021 Base					2021 + dev					2031 Base					2031 + dev					
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	
North	Left	566	11	B		188	7	A			167	8	A			242	7	A			148	17	B				
North	Through	566	33	C	21.9	608	33	C	26.6	C	620	33	C	28.0	C	544	27	C	21.2	C	506	32	C	28.8	C		
East	Left	275	45	D		285	11	B			275	11	B			133	10	B			105	31	C				
East	Right	794	123	F	102.8	557	46	D	34.4	C	543	53	D	38.9	D	607	66	E	56.1	E	584	113	F	100.1	F		
South	Through	870	102	F		961	16	B			1032	15	B			887	129	F			1047	52	D				
South	Right	251	88	F	98.8	363	29	C	19.8	B	273	22	C	16.4	B	137	107	F	126.2	F	105	37	D	50.9	D		
Intersection		3322			73.9	2963			25.8	C	2910			25.9	C	2549			73.5	E	2495			58.7	E		

Figure 9: Intersection modelling results following modelling conferencing

138. The outcomes show that the development models result in a better level of service than the baseline model. It is reasonable to suggest that this would be a counter intuitive outcome, but not a conclusion rejected out of hand.

139. There is a mix of likely causes for this, some of which are model limitations (which will be specified), but also some plausible reasons as well, such as some of the 'pass-by' traffic entering the site via Main North Road and exiting onto Northcote Road, and vice versa, thus bypassing the QEII Drive / Northcote Road / Main North Road intersection.

140. The performance of the signalised access (in the development models) has not been included at this stage, but I have extracted outcomes from the 2021 model (as discussed in section 7.2.4.2 ("Difference between Future Development model and Future Baseline (2021)")).

141. At the end of caucusing, there was need for some more development in terms of understanding the relationship between outcomes at the two intersections: as one worsens, the other improves.
142. Many of the inputs constantly needed to be changed throughout this process, and agreement on the future baseline technical parameters, (signal design, layouts) was achieved late in the piece. As such, some of the original inputs, including demand modelling, were not changed *precisely* to reflect this.
143. Since caucusing, I have re-run the CAST demand models to reflect the future environments, including technical operating parameters that would be acceptable to the road controlling authority delegates. The outcomes of this work (in terms of modelled demands – shown in more detail in the Figure 20 - Figure 22, Appendices) differs slightly from the demands included in Figure 9. One key difference is that the development model demands increase from the base line demands – which is more intuitive.
144. The baseline paramics model demands (reported above in Figure 9) include 247 vph more at the QEII Drive / Northcote Road / Main North Road intersection than predicted by CAST whilst the difference between CAST and the development model is about 10 vehicles. For purposes of Assessment of Environmental effects, it is more reliable to result in more similar differences for both baseline and development models, to minimise bias. If the effects of the baseline model are overstated, then the difference between the baseline and development model will be understated.
145. The conclusion drawn from CAST modelling is that the baseline intersection operations will continue to operate at capacity, including post CNC. Though operations are forecast to change significantly, intersection delays are forecast to be redistributed, more than reduced.
146. The south approach to the QEII Drive / Northcote Road / Main North Road intersection is predicted to operate at 99% of capacity, in the baseline model. The adding of development traffic does not change this, but rather results in the displacement of some baseline traffic, in order to accommodate the development traffic.
147. The risk associated with relying on the assumption (that significant baseline traffic reroutes to accommodate the development traffic, within design capacity) appears to not be fully managed; however there are some mitigating factors as

well that need to be considered. These are described in more detail in paragraphs 244 - 249.

148. During the process it has been estimated and agreed by all parties that the AM and Inter peak period models show considerably fewer effects, on the two reported intersections (see Figure 9) and also that there is less exposure to risk. There is a high degree of confidence in the results, simply because of the considerably lower demands that will occur during the AM period, and due to the lower traffic levels and availability of capacity for key movements identified in the Inter peak.

149. The future baseline was also tested during the AM and Inter peak periods, and found to operate well enough to be accepted by the road controlling delegates, to the point of agreeing to consideration of implementing it, post CNC.

### **7.2.3 Modelling Assumptions**

#### *7.2.3.1 Future baseline: Network operation assumptions*

150. Changes to the QEII Drive / Northcote Road / Main North Road intersection have been identified as mitigation for the impacts of development, and these include:

- Remarking the southern approach to change the centre 'through' lane to a shared 'through / right ' lane (resulting in two right turn lanes)
- Widening the QEII (east) exit road to accommodate the turning demands of two trucks turning right from Main North Road (south), simultaneously
- Redesigning the signal phase operations to accommodate the above geometric changes

151. The experts have agreed that these changes should be included in the future base line as well.

152. The consideration of the future baseline includes speculation as to how the network will be managed post CNC. The best speculation on this comes from Mr Sissons, who will likely be among those making decisions on how the intersection be best managed. Although CTOC has not yet commenced work at this level of detail.

153. Effectively, the work undertaken by Abley has identified a likely need to re-design the intersection, in order to provide for the forecast growth in right turn demand from Main North Road to QEII Drive.
154. The original proposed baseline included the existing lane configuration and signals operations. However, a recent change in design standards means that the existing signals operations would be required to change in any case. Currently, some vehicles turning right across the intersection do so in part by waiting for gaps in opposing traffic. This practice is to cease where right turn traffic is required to cross two lanes, as in this case, (as also covered in Section 6.3, "Road safety assessment", and paragraphs 64-69).
155. The experts agreed not only that the changes be included in the base line model, but also made a statement that the changes would be investigated and likely implemented upon the opening of CNC, on grounds that:
- a. the signals plan would be changed in any case to reflect network demand changes and implement safety improvements
  - b. CTOC would routinely review broader operations
  - c. the changed intersection layout (as initially included in the development model only) represented a likely future operations plan, the experts agreed.
156. This outcome has ramifications on the Applicant's Assessment of Environmental Effects (AEE), on grounds that the original baseline model (without changes) performs "more poorly" than a base line model including the changes. Therefore, comparing the development model with the original base line model would show fewer effects, as the development model would contain those changes that the experts agree would be required, regardless of there being development or not.
157. Another matter of discussion relates to the assumed operations, including the modelled phase operations at the QEII Drive / Northcote Road / Main North Road intersection.
158. A key variable in the management of a signalised network is the 'cycle time,' (that is, the amount of time it takes for a signal plan to move through all the movements). The original modelling suggested a time of 100 seconds, whereas the existing plan includes a time of 85 seconds.

159. The significance of this change is twofold. Firstly, the length of cycle time impacts upon the level of service of the intersection. The 'practical cycle time' is calculated by software, such as to minimise the delay to all users. Secondly, the intersection does not operate in isolation; it is currently operated in tandem with downstream intersections on Main North Road (in attempt to generate 'green waves,' or at least minimise delays) for northbound traffic, north of Harewood road. Usually, all of the intersections involved in an optimization plan need to operate with a common cycle time.
160. It is likely that this optimisation will need to be maintained into the future, as northbound demands on Main North Road (through Papanui) are not forecast to reduce by much, for several reasons.
161. However, there are complications in establishing the future operational assumptions, on grounds that the Northcote Road – QEII Drive east-west corridor demands increase, and noting that it is the Major Arterial corridor (Main North Road is minor arterial). Therefore, there will be increasing competing demands for 'green time'. It would be unlikely that both the north-south movements and east –west movements could be simultaneously prioritised.
162. Resolving the question as to identifying the most efficient optimisation plan for a future network is complex, because the variables of assigning green time and route choice are closely inter-related.
163. However, the CAST model is an invaluable tool for resolving matters such as this, as it can iteratively both 'predict' route choice and optimise signal timing, (in accordance with very specific criteria, which determines how much confidence one can have in the outcome).
164. Using this method, I determined the optimum network performance, based on assumptions of retaining current optimisation of Main North Road and assuming the proposed revision to intersection layout (including the double right turn).
165. The outcome was that CAST retained the northbound optimisation, whilst also allocating about 40% of green-time to the Northcote Road and QEII Drive approaches. Based on the above assumptions, this is the most efficient operational outcome predicted, and considering the entire network.

166. These findings were relayed to the experts, along with the expectation that simulation includes the assumption of a 40% phase allocation to the west-east movements.

#### *7.2.3.2 Future baseline: Consented baseline assumptions*

167. The Applicant's first ITA and modelling assumptions included traffic assumptions associated with the RMA/205/1438; the development of Netball Courts, and associated conditions of consent, relating to management of movements at the Northcote Road / Lydia Street intersection.

168. Since the granting of Consent, the site has been purchased by the Roman Catholic Diocese. Although the intended use is for a secondary education facility, weighting might not be given to this eventuality (for purposes of establishing a baseline), as there would be need for a Private Plan Change process to rezone the land.

169. It is not practical to include the netball courts (RMA/2015/1438) due to the high probability that the Consent will lapse in 2020.

170. An agreed way forward by both parties would be to include a permitted activity within the Industrial General Zone . This is not ideal, given that there are no identified 'high traffic generating' activities that might establish on the site.

171. In the absence of a better identified activity, which complies with the requirements of the Act, the existing freight operation is represented in the future baseline analysis.

### **7.2.4 Modelling outcomes**

#### *7.2.4.1 Difference between Future Baseline (2021) and 'present day' model*

172. A version of the CAST model developed for 2018 has been compared with the 2021 future baseline network. The major difference is the CNC and the transformation this has on network demands.

173. Figure 10 shows a network flow plot between the 2018 and 2021 models. The green represents decrease and the red increase in traffic flows. The modelled turning count data for the Main North Road intersections subject assessment are included in Appendices.



Figure 10: PM peak difference in flows before and after CNC (red is increase and green decrease in forecast traffic)

174. The changes in intersection turning demands for the QEII Drive / Northcote Road / Main North Road, Main North / Cranford Street intersections and the Main North Road / signalised access are included in the Appendices, as Figure 20 - Figure 22.

175. The modelled difference in baseline demands (2021 minus 2016) shown in Figure 10 shows:

- Increase on Northcote Road / QEII Drive, Eastbound, ~+ 300 vph
- Increase on Northcote Road / QEII Drive, Westbound, ~+300 vph
- Decrease on Main North Road, Northbound (south of Northcote), ~ minus 900 vph
- Decrease on Main North Road, Southbound (south of Northcote), ~+900 vph
- Decrease on Cranford Street, Eastbound, ~ minus 300 vph
- Decrease on Cranford Street, Westbound, ~minus 430 vph

176. Turning movement changes at the intersections are shown in the appendices (Figure 20 -Figure 22). Of the 16 intersection movements at the QEII Drive /

Northcote Road / Main North Road intersection, 11 will experience transformative changes in demand.

177. The biggest difference at the QEII Drive / Northcote Road / Main North Road intersection is the reduction in travelling through the intersection: there is a drop of 1100 vph, about 20%. There is an increase in east-west movements of around 300 vph, representing a change of 50%.
178. For clarification, the Northern Arterial itself is not shown in Figure 10. This has no bearing on assessment and is a limitation in the CAST reporting programme. The major difference is the amount of change focussed around the subject development site. Flows on Main North Road, north of QEII Drive are halved from 2,000 vph exiting northbound to 1,000 vph. By contrast, the west – east movements increases by around 300 vph in either direction.
179. The leading safety issue at the intersections are ‘crossing - turning’ crash types. (Refer to section 6.3, Road safety assessment). Right turn movements failing to give way to oncoming traffic is the leading cause. The base line model includes a different operation to reduce this outcome. It should also be noted that the baseline model shows a reduction in right turn demands for three of the four right turn movements, with the exception of the right turn from Main North Road (south) to QEII Drive, which increases by 113vph (around 25%).

#### *7.2.4.2 Difference between Future Development model and Future Baseline (2021)*

180. Development modelling has been undertaken such as to reflect as best as possible the number of ‘primary’ vehicle trips to the development. Although the ITA suggests around 1,000 vehicle trips per hour (evenly split between in and out), 20% are estimated to be primary vehicle trips, (that is generating sole-purpose trips thereby adding to the network).
181. The model has been developed assuming that approximately 30% of trips are ‘primary’. However, the model is unable to exactly replicate this. It is suggested that the majority of trips would be diverted or pass-by, thus forming part of a multi stop ‘tour’. Although ‘tour’ models are being developed, they are not yet available for wider use. In addition, it is not possible to know exactly from where diverted trips are diverted. Although there is much focus on ‘primary trips’, the effects of diverted trips should also be considered, in the context of attracting movements to an already sensitive part of the network.

182. The method used in the CAST model was to assign all of the development traffic and then factor down the other origin - destination pairs passing through the adjacent network, thus resulting in an increase in demands that do not represent an excessive primary trip rate.

183. Modelling for all timeperiods was completed, and determined that effects during the AM and Inter peak periods would be considerably less, based on there being less existing traffic, and generally fewer capacity constraints. More information is available in the Joint Witness Statements (JWS)

184. Operations during the PM peak are more critical, as there is strong growth forecast for north, east and westbound movements, and a greater degree of conflict between these movements requiring optimised management.

185. Figure 11 shows the modelled changes in network movements during the PM peak, comparing 2021 'with development' to the 2021 baseline models. Red lines denote growth, green predicted reductions. The changes in intersection turning movements are included in the Appendices (Figure 20 -Figure 22).

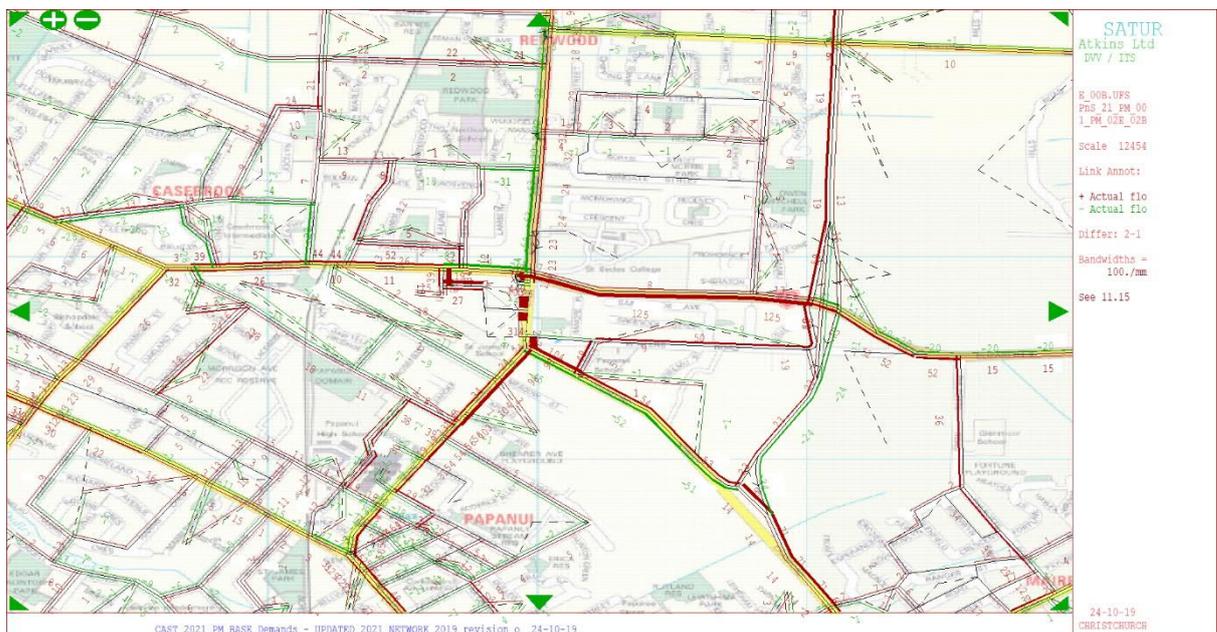


Figure 11: PM peak difference in flows, development model versus baseline, 2021

186. Figure 11 shows the increase of traffic, resulting from development. The forecast turning movements are available in the Appendices (Figure 20 -Figure 22). Changes include:

- Increase on QEII Drive, westbound, ~+125 vph

- Increase on Main North Road, north of Cranford Street, southbound, ~+220 vph
- Increase on Main North Road, south of QEII Dr, ~+57 right turns, ~+31 left turns
- Decrease on Main North Road, south of QEII Dr, ~ minus 87 through movements.
- Decrease on Northcote Road, (east of Lydia Street) eastbound, ~ minus 87 vph
- Increase on Northcote Road, (east of Lydia Street) eastbound, ~+50 vph

187. There are three key notable outcomes:

- a. The Main North Road northbound approach total (south of QEII Dr) remains largely unchanged, and the demand for capacity remains critically high at around 98%. The main difference for the south approach is that more traffic is modelled to turn right and fewer vehicles continue northbound, than in the baseline. (See Figure 23, p84). Henceforth there is no real option to add further traffic to this approach, without relying on rerouting, or demand that exceeds capacity.
- b. Changes in demand further afield. Although outside of the immediate network, the intersections being studied are of such significance that operations would likely influence route choice from far away. However, effects of this are minimised, within limited cause at this stage to widen the area affected beyond the network captured by the paramics model.
- c. The right turn movement from Main North Road – QEII Drive is operating close to / at capacity. The CAST model has therefore assigned approximately 70vph via Winters Road.

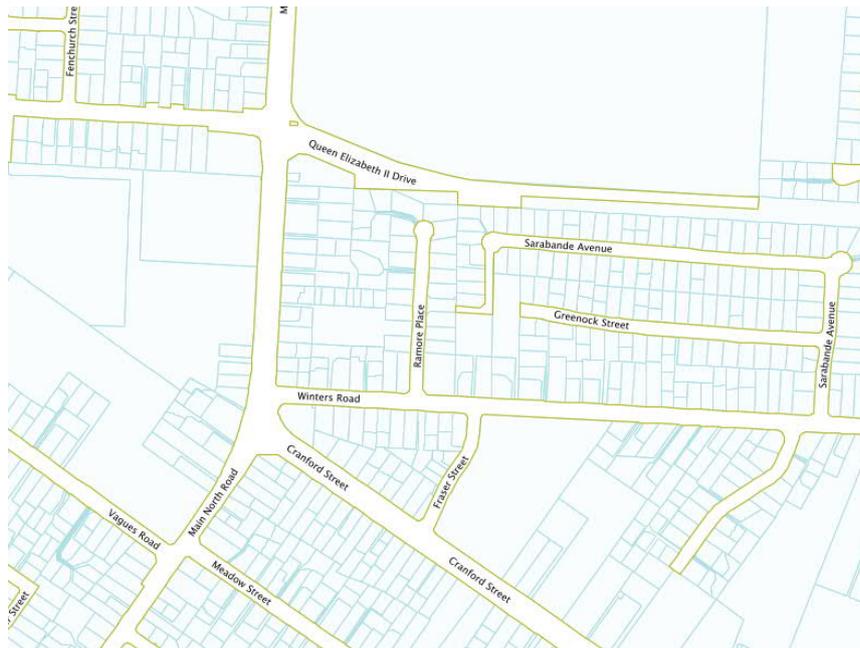


Figure 12: Location of Winters Road

188. The proposed CNC includes access from Winters Road to the CNC interchange at Queen Elizabeth II drive. Winters Road is a local road, with some network management measures in place to reduce speed. It serves access to the Papanui Primary School, and increased through traffic could not be in accordance with desired outcomes for road safety.

189. Despite being coded in the CAST model as a local road with slow speed, it is still forecast to be attractive, owing to the relatively more onerous route choice of turning right from Main North Road to QEII Drive. The forecast use by development traffic might exceed the intended operation of the local road, and generate effects on the community safety, including that of Papanui Primary School.

190. As it is beyond scope of this process to change the design of access to the CNC, a measure of mitigation might be to treat Winters Road with additional traffic and speed calming, such as to render it unappealing as an alternative route choice.

191. The modelled 'origin' and 'destination' movements are shown in Figure 13 and Figure 14, respectively. This helps understand the extent of the development traffic itself. In the model, the development is split into two zones, with the same origin and destination inputs. The zones used are duplicates of the existing supermarket zone at Northlands, assuming that the catchment area and

characteristics would remain similar, given the move of 1.0km. Representing one of the two zones, Figure 13 and Figure 14 represent approximately 60% of the development traffic.



Figure 13: Modelled destination of trips from the proposed development (not including FUSIL offices)

192. The analysis from Figure 13 suggests that about 100vph seek to turn right into QEII Drive from Main North Rd, though the overall increase is of 57 vph (meaning that about 50 vph modelled in the future base line have re-routed). Approximately 75 vph are estimated to have a destination accessed via the Northern Arterial. This translates into a prediction that around 75 vph may divert prior to turning right into QEII Drive and assigning via the CNC.

193. Approximately 100 vph would also turn left onto Northcote from Lydia Street. Effectively, this means that pass-by traffic that (in the future base model) would turn left from Main North Road to Northcote Road via the QEII Drive / Northcote Road / Main North Road intersection, effectively routes through the site instead.

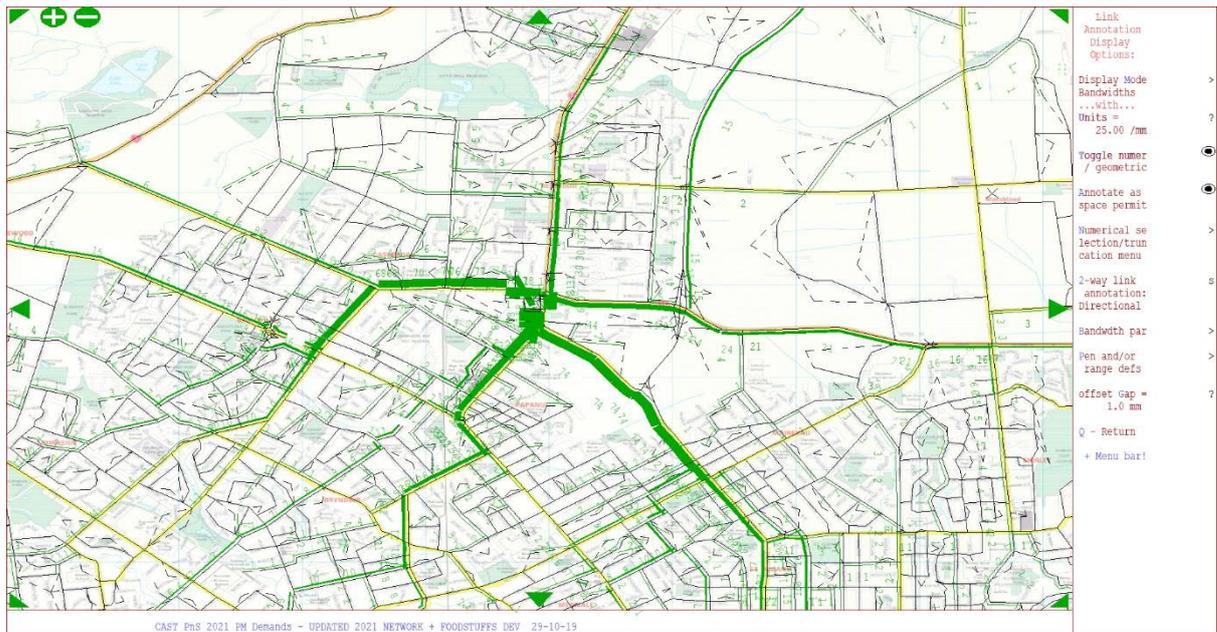


Figure 14: Modelled origin of trips to the proposed site (not including FUSIL offices)

194. Figure 14 suggests the origins of the traffic for one of the two development zones (noting each has the same proportional assignment outcome). Approximately 100 vph would arrive from Cranford Street and a similar number from Main north Road to the south.
195. Figure 22 (in the Appendices) show that the changes in demands at the Main North / Cranford Street intersection do not increase by the same margin, again showing that traffic modelled in the Baseline is re-routed in the development model.
196. Approximately 100vph arrive from the west on Northcote Road, turning right into Lydia Street, (again bypassing the intersection, as described in paragraph 193).
197. Much smaller amounts arrive from the north. The bulk of the traffic arriving from the south and west is a reasonable simulation reflective of the pass-by and diverted trip functions, noting the tidal demands towards the north and east.
198. Effectively the Assessment of Environmental Effects shows that the development impacts are manageable; however, the premise of this conclusion is reliant on the rerouting of other traffic in the network, noting that available capacity is finite.

199. Furthermore, the Paramics 2021 development model includes some significant differences to the CAST outcomes, including:

- a. Under representation of 200vph on QEII Drive approach to Main North Road
- b. Under representation of 150vph on the Northcote Road approach to Main North Road
- c. Over representation of the right turn movement from Main North Road (south) to QEII Drive, by 176vph.

200. In addition, there are 100 vph seeking to turn right into Lydia Street. There are plans to develop a scheme option that removes this turning movement as part of the Northcote Road route improvement scheme. Should the consent be granted, the outcome would be to add up to 100vph extra to the right turn from Northcote to Main North Road.

201. Subsequently, the paramics model has been used to further test some outcomes, including some sensitivity testing for the 2021 changes. The following changes were included:

- Addition of the shortfall in traffic for Northcote Road and QEII Drive through movements, reported above in paragraph 199.
- Restriction of right turns into the site from Northcote Road – Lydia Street
- Changes to signal operations at Main North Road / site access to accommodate additional right turn demand (resulting from closure to right turn movements at Northcote / Lydia

202. Analysis has only been undertaken for 2021, but should also be undertaken for the 2031 period as well.

203. The outcome is that the QEII Drive / Northcote Road / Main North Road intersection overall operations are unchanged, with the main difference being an increase in right turn delay from Northcote Road to Main North Road (noting above the increase in modelled demands), which increases from 37 seconds per vehicle to 55 seconds. The overall outcome appears acceptable.

204. However, the modelled impact on the signalised access is significant, with concerns about the capacity of the signalised right turn lane into the site blocking back towards (and into) the QEII Drive / Northcote Road / Main North Road

intersection. The Abley development model predicts a delay of 47 seconds per vehicle however this increases to 67 seconds.

205. There are concerns about the right turn capacity into the site for all model assumptions, including those which assume the preservation of full access from Northcote Road. The modelled capacity of the right turn movement is 132 vph, which is low. The assumed demand from Abley is about 112 vehicles per hour.
206. There was very little discussion on the matter of right turn capacity, during expert conferencing. However, the safety Audit raises it as a crucial matter. The present prediction is that the 'degree of saturation' would be 85% of capacity on day one. Please note that in Transport Engineering, capacities in excess of 85% are generally identified as approaching the end of life.
207. In the event that the right turn demand into the site (from Main North Road) has been under estimated, even by as few as 10 or 20 vph (the equivalent of 1% - 2% of daily peak hour vehicle movements), the design capacity would be exceeded. In my opinion, and despite the credible methods used to predict vehicle demand characteristics, only one single assumption need prove incorrect; for example, if the percentage of primary trips were 25%, not 20%, for the assumed available design capacity to prove insufficient.
208. The current method to manage an over saturation of the right turn lane is to increase green time share of the movement, at the expense of Main North Road green time. It would not be possible for the operator of the proposed signalised intersection (Christchurch Transport Operations Centre, ("CTOC")) to allow the right turn movement to overflow, and henceforth will be coerced by circumstance into reducing the efficiency of the major road movements to mitigate a potential safety issue.
209. In my opinion, sensitivity analysis would be imperative in order to understand the risks involved, including how much potential delay would be required to Main North Road movements (described above), in order to give a higher degree of confidence that the proposed design capacity would be sufficient.
210. It is likely that the Independent Peer Review will cover this matter, and provide a basis for resolving disagreement.

#### 7.2.4.3 *Difference between Future Baseline (2031) and Future Baseline (2021)*

211. The 2031 baseline model includes developments and network changes not included in 2021, including key developments, especially a representation of the East Papanui (formally known as “Cranford Basin”) Outline Development Plan (ODP), and capturing the growth forecasts projected over Christchurch over the coming decade.

212. Importantly also, the 2031 takes account of some mode shift as well: not all growth for movement is represented as growth in single occupancy car travel.

213. The modelled difference in baseline demands (2031 minus 2021) is shown in Figure 15, and shows:

- Increase on Northern Arterial, Northbound, ~+300 vph
- Increase on Northcote Road / QEII Drive, Eastbound, ~+250 vph
- Increase on Northcote Road / QEII Drive, Westbound, ~+200 vph
- Increase on Main North Road, Northbound (south of Northcote), ~+170 vph
- Increase on Main North Road, Southbound (south of Northcote), ~+35 vph
- Decrease on Cranford Street, Eastbound, ~minus 250 vph
- Decrease on Cranford Street, Westbound, ~minus 100 vph

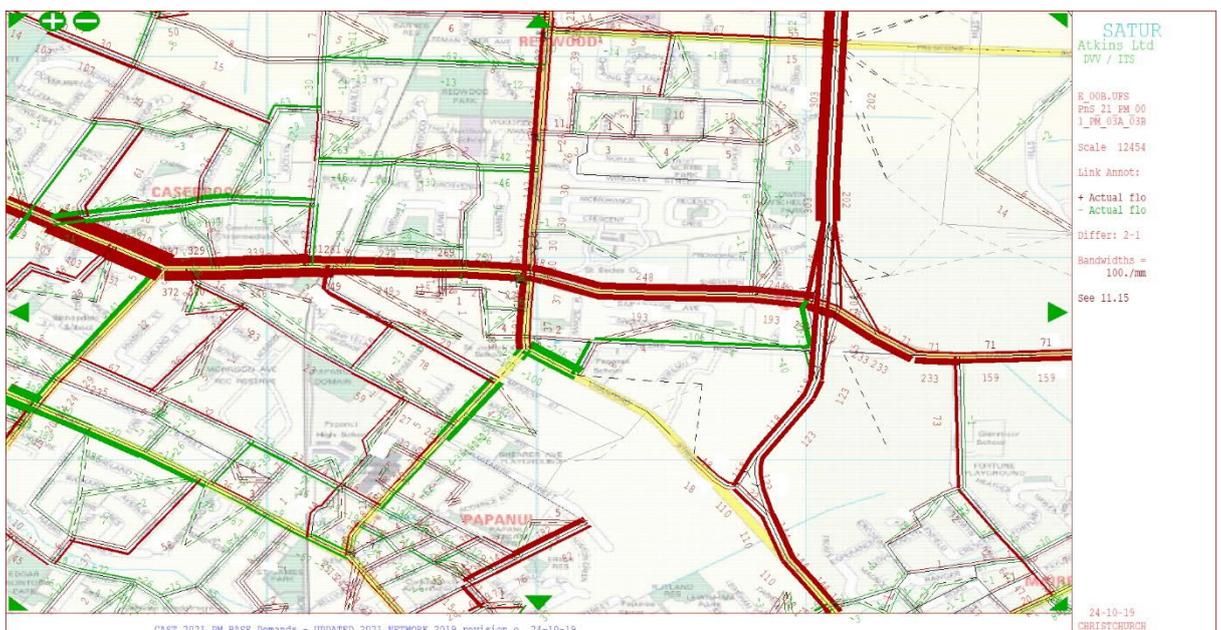


Figure 15: Figure 16: PM peak differences in flow between 2021 baseline and 2031 baseline: red denotes increase

214. Turn count differences at the intersection are shown in the Appendices (Figure 20 - Figure 22). The outcome is major changes to:

- QEII Drive / Northcote Road / Main North Road intersection:
  - From Northcote Road (west), +180 left turns, +80 through movements
  - From Main North Road (south), +193 right turns
  - From QEII Drive (east), +46 left turns, +179 through movements
  - From Main North Road (north), + 50 right turns
  
- Main North Road / Cranford Street intersection:
  - From Main North Road (north), +64 left turns, -30 through movements
  - From Cranford Street, -66 left turns, -35 right turns
  - From Main North Road (south), +220 through movements, -320 right turns

215. The impact of Cranford Basin is especially noteworthy as it includes a Collector Road, improving on connectivity between Main North Road (Papanui) and Cranford Street (St Albans). The effects of this are shown above, with a reduction in movements between Main North Road (south) and Cranford Street.

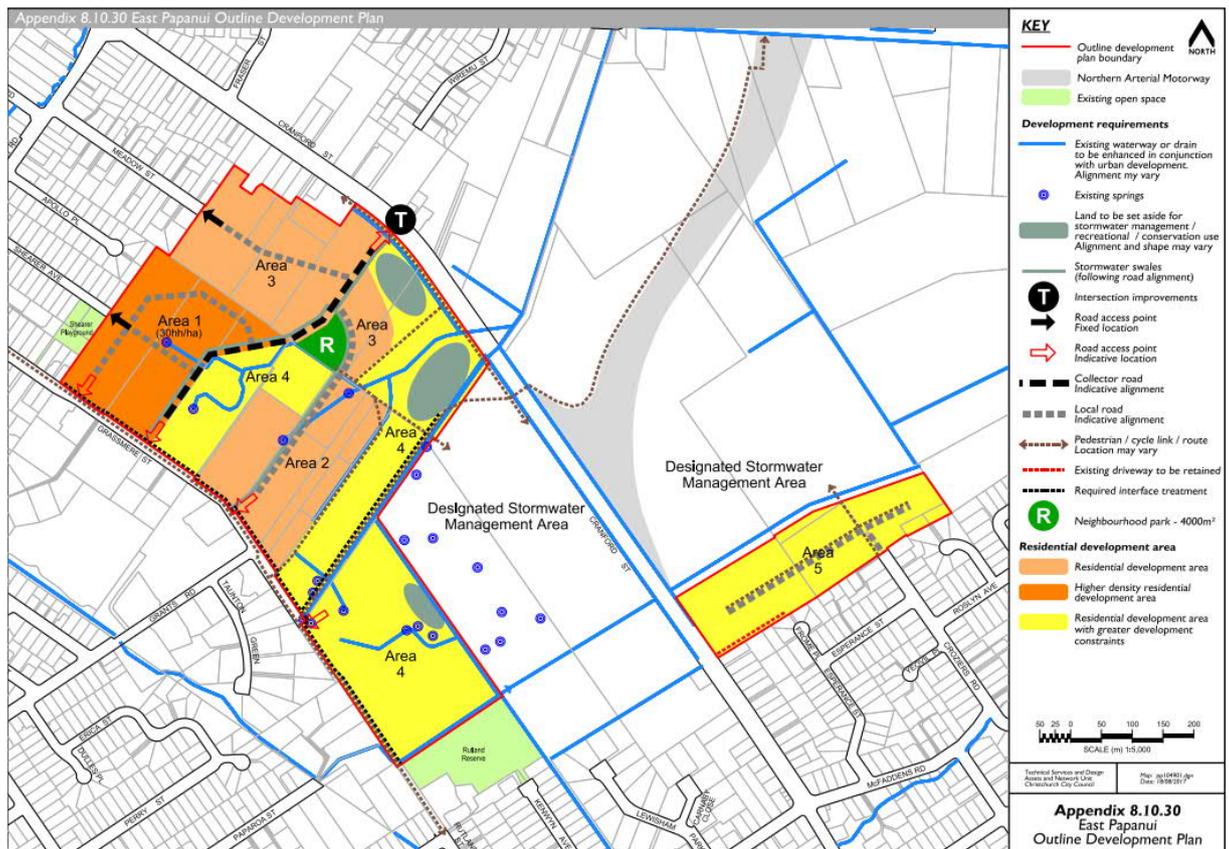


Figure 17: 'East Papanui Outline Development Plan

216. The CAST model suggests that the Collector Road will attract around 200 vph 'through movements,' notably from Northlands Mall to the St Albans area. Much of this traffic would otherwise route via the QEII Drive / Northcote Road / Main North Road and Main North Road / Cranford Street intersections.

217. Most of the growth outlined above could be attributed to background growth, which continues to be forecast as strong. Growth assumptions made in the CAST model (developed in 2016) are consistent with growth expectation published by the Greater Christchurch Urban Development Strategy partners.<sup>8</sup>

218. The largest growth is on the Northcote Road – QEII Drive corridor, with facilitating planned for through the Northcote Road route improvements, and the QEII Drive widening.

219. It should be noted that widening alone does not accommodate growth, but allows for shorter queue storage. The operation of the QEII Drive / Northcote

<sup>8</sup> "Our Space, Greater Christchurch Settlement Pattern Update, 2018 -48", update to the UDS Strategy

Road / Main North Road intersection, particularly in green time allocation will continue to be of critical importance. The 2031 modelled baseline has assumed a continuation of prioritising green share to the west-east movements, as per assumptions for the 2021 baseline.

The Abley model has shown significant growth in queues on Northcote Road in the 2031 model, such that they were queueing out of the model. This issue was raised in conferencing and addressed. The Applicant has undertaken future scenario modelling with the requirement of protecting the Northcote Road corridor operations.

#### 7.2.4.4 Difference between Future Development model and Future Baseline (2031)

220. Section 7.2.4.3 (above) describes a change in the 2031 future baseline, compared to the 2021 baseline, and therefore there are some differences between the 2031 development model outcomes to that of 2021.

221. Figure 18 shows the modelled differences in flows between the 2031 baseline and 2031 development models. The red denotes increases in traffic, the green decreases. As concluded from the 2021 outcome, traffic from the baseline model has effectively been displaced to make room for the development traffic.

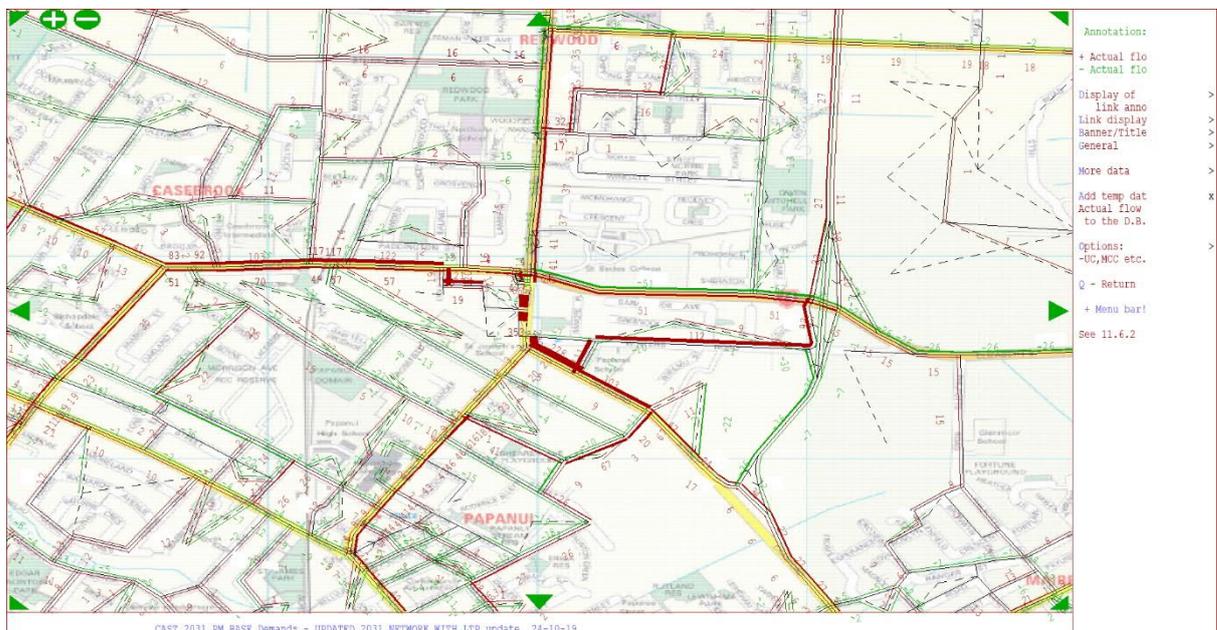


Figure 18: PM peak difference in flows, development model versus baseline, 2031

222. Figure 18 shows the biggest increase on Northcote Road. This is possibly due in part to the route improvement project being included in the model, including two eastbound vehicle lanes. The development traffic is distributed both in accordance with its modelled origin – destination, but also in terms of where there is capacity (and opportunity to minimise cost of travel).
223. The most notable change is that of an increase in demand on Winters Road. (See paragraph 188). Already observed in 2021, the modelled demand in 2031 more than doubles.
224. Other network changes are limited because there is very limited spare capacity.
225. There are differences between the Paramics turning movements and the modelled CAST demands. The 2031 paramics development model includes 170vph less than the CAST model forecasts, of which two thirds of the shortage is on the Northcote Road ‘ahead’ movements. In addition, the 2031 paramics baseline model underestimates the right turn demand from Main North Road to QEII Drive by around 160 vph.
226. The over estimation of the right turn movement described above could be considered to represent a high degree of confidence in the outcome. However, the significant difference on Northcote Road, and the extent to which this represents a risk to the validity of the predicted outcomes would normally need to be more closely considered in project modelling.

### **7.2.5 Points of disagreement**

227. Although mostly productive, there were a few areas of concern, some of which included managing the limitations of the tools.
228. Mr Sissons rightly pointed out that the CAST model can potentially be optimistic. This is because the CAST model uses a method known as ‘equilibrium assignment’, which is the cornerstone of all big transport models. Equilibrium assignment is a process where software iteratively ‘spreads’ traffic across the network, until the distribution of trips reaches a state by which no single user can improve their trip cost. This is a method used by all larger ‘static’ models, (although CAST does it particularly well), which is best described as a

generalisation of what would be in reality a series of complex route choice decisions made by users, often in reaction to changes in traffic conditions.

229. The published criticism of equilibrium assignment is that it would consider all users in a network to have omniscient knowledge of conditions, both present and future.
230. It should also be noted that some vehicle turning movements in the baseline model were operating at a higher degree of saturation. This means that, in order to fulfil the software requirement of assigning the development traffic to the network, other trips were re-routed.
231. This is by no means an unusual outcome in project modelling, and there is plenty of industry guidance on how to manage risk and increase confidence levels.
232. I have shared concerns around need for sensitivity testing during the conferencing and at other stages, in order to effectively manage risk and increase confidence levels in the outcomes.

#### **7.2.6 Outcome of independent peer review**

233. Due to the differences of opinion on some issues, both parties have sought an independent peer review.
234. The reviewer is Mr John Falconer, of suitable skill and experience for this review
235. The review has not been completed at the time of writing this report.

#### **7.2.7 Modelling conclusions**

236. As noted by the safety auditors, the “success” of the Application depends largely on robust modelling.
237. The results of the development modelling suggests a high degree of reliance on re-routing of baseline (non-development) traffic, in light of limited available capacity. There may be a high degree of exposure to the model limitation in taking the results at face value.

238. There are critical turning movements, which are expected to operate very close to capacity from commencement, based on taking all data at face value.

239. There are some outstanding matters which prevent the supporting of predicted network effects at this stage, identified through the Joint Witness Statements, and including:

- a. Outcome of the Independent peer review.
- b. Issues around the management of model limitations, (sensitivity testing), with what / how this can be addressed set out below.
- c. Predicted rat running likelihood on Vagues Road.
- d. More understanding of the relationship between modelled effects at the QEII and Cranford Street intersections reported in Figure 9, (page 33). There appears to be little correlation in modelled operation outcomes, where one might be expected.

240. For the reasons of overcoming modelling limitations and testing the consequences in shortcomings in assumptions (e.g. mode share estimates, trip rates, percentage of primary trips etc.), it is good modelling practice to sensitivity test critical movements, in order to discover the context of error. There are different types of sensitivity test, but the critical one is of demand. There is enough published guidance on this matter, including within the NZ modelling fraternity, and the need to incorporate good risk management into forecasting. This is a key method for overcoming limitation of tools, but has not been undertaken. I have expressed views on this matter at varying stages of the process and would have undertaken this analysis myself if time had permitted.

241. An alternative to the use of equilibrium assignment would be to 'manually' add the expected number of vehicle trips to future base line turning counts. However, it is reasonably assumed that the development would change the route choices of at least *some* non-development traffic, seeking to avoid perceived or actual delays generated by the proposed signals. The use of the CAST model for route prediction captures this effect.

242. The recommendation made to the Commissioner also needs to raise any foreseeable impediments to implementing the decision.

243. If it were considered likely that the absence of sensitivity testing could be severe enough, such that it's subsequent inclusion would likely yield a different

predicted outcome, then it would be difficult to recommend that network effects would be manageable.

244. It would be recommended to identify the need for sensitivity testing in the paramics model from the predicted development origin / destination movements (Figure 13 Figure 14) and include:

- a. Right turn demand from Main North Road (south) to QEII Drive (east).
- b. Left turn from QEII Drive (east) to Main North Road (south).
- c. Testing should include the capacity of the signalised right turn from Main North Road into the site, which could also have safety implications.
- d. And, simultaneously ensure that significant differences between CAST modelled movements are minimised.

245. Not all of the above would need to be undertaken, noting that the right turn demand from Main North Road (south) to QEII Drive (east) is consistently over represented in the Paramics modelling. However, understanding the risks associated with underestimating right turn demand from Main North Road into the site would allow for an increased degree of confidence in a safer outcome.

246. Testing might also include the impacts of anticipated removal of right turn in movements from Northcote Road to Lydia Street. The impacts upon the QEII Drive / Northcote Road / Main North Road intersection would be minimal because there is spare capacity available in the right turn from Northcote Road. However, the impacts on the right turn into site would need to be captured (as per above).

247. Although there is missing information, there are mitigating circumstances that might be considered:

- a. The CNC will be transformative to such an extent that when subsequent processes of design and implementation are undertaken, they will be done so on the basis of observation (post CNC opening), and hence the forecasts provided will not be relied upon during those subsequent stages
- b. A significant amount of the “diverted” site traffic will enter and leave the site by different access points, thus bypassing the QEII Drive / Northcote Road / Main North Road intersection altogether.

- c. The proposed Cranford Basin network, including a Collector Road, is predicted to provide a more direct route than using Main North / Cranford Street intersection.
- d. Finally, during the original model validation exercise undertaken on 19<sup>th</sup> October 2018, it was found that the base CAST model was over-estimating northbound demands on Main North Road by approximately 100 vph, with other key movements being very similar. Henceforth it is possible that some of the CAST forecasting may already be conservative.

248. Although the CAST model methodology is limited, it has been instrumental in recognising much of the above mitigation.

249. It may be possible through changes to the proposal for the strategic transport objectives and other community interests to be safe-guarded. Abley consultants have tested the feasibility of a bus jump at the signalised access, and assumptions at the QEII Drive / Northcote Road / Main North Road intersection generally include at least 40% of 'green time' to the west-east Major Arterial routes, synonymous with the priority expected to be given to the more important west-east corridor.

250. However, without receipt of the information identified above (paragraph 239), I am unable to support the validity of the modelling outcomes at this stage.

### **7.3 Safety Audit outcomes**

251. Request for Further Information (made under s92 RMA) required that a Safety Audit be undertaken in accordance with NZTA Road Safety Audit procedures for Projects (2014). The NZTA procedures require that audits be undertaken at various stages throughout a project, including concept, detailed design, implementation and post implementation. As such, should consent be granted, the Safety Audit process will continue, with the purpose of minimising risk to the public.

252. The initial Audit was completed on 11<sup>th</sup> March and received by Council on 29<sup>th</sup> April 2019 for response by Council's Safety Engineer, Mr Stephen Wright (Team Leader of Traffic Operations and highly experienced road safety engineer). His comments are dated 8<sup>th</sup> July 2019.

253. A critical requirement of the Safety Audit is independence of the parties involved. Mr Antoni Facey and Mr Dave Wanty, of separate external third party

Consultancies, have undertaken the initial audit. Mr Jay Baththana (representing the Applicant) and Council (Mr Stephen Wright) have reviewed their findings. I have not been directly involved, nor know of any bias to the execution of this process.

254. The format of the report is that a series of observations are made by the independent Safety Engineers and then reviewed by both the Applicant and Council's parties. The risks are rated in terms of severity and frequency.

255. The Applicant fulfils the role of 'Design Engineer' and Council the role of 'Safety Engineer'. In the event that the Design Engineer and Safety Engineer disagree in terms of how to proceed, the matter is referred to another party, within Council (as road controlling authority).

256. The Auditing undertaken to date represents the Concept Stage Safety Audit.

257. There have been major outcomes from the Safety Audit, fundamental to the ability to support the proposal, including:

- a. The exposure of the project to risks associated with model error, and the need for "accurate modelling", as "critical to the success of this project".
- b. The recognised need to increase the length of the right turn bay into the site from Main North Road, and consequently the need to amend the design layout at the QEII Drive / Northcote Road / Main North Road intersection, which has been included in the Application since April 2019.
- c. The ability of the changes at the QEII Drive / Northcote Road / Main North Road intersection to proceed, following demonstration that the double right turns can simultaneously accommodate the swept paths of two larger vehicles turning together. However, success of these movements depends on the cutting back of kerb and widening the QEII Drive eastbound exit, which is an anticipated outcome as part of the remediation works.
- d. The need for a bus gate at the signalised access, in order to assist northbound buses. All parties agreed to this. However, the preceding statement that 'northbound bus lanes could terminate at the proposed new signals' is not supported, due to the ongoing needs of developing the Core PT route and the need to safeguard space for this purpose.

- e. The need to reconcile the proposed signalised access with the Redwood Family Dentist (opposite):

Auditors observed a driver reversing from the dentist at 186 Main North Road 'into the area that will be controlled by the traffic signals'. The intended design treatment at this location includes signs and marking advising exiting traffic not to turn right. However, this is not suitable for a commercial premises, where visitors (patients) will be unfamiliar with the detailed workings of the adjoining intersection. The recommendation was to signalise the access as part of a four-arm signal operation.

However, it is subsequently apparent that the configuration of the Dentist access is incompatible with a signalised configuration, and alternative solutions are being considered, including agreement that customer access to the site be removed, and parking allocated on the Application site instead.

This is a matter of fundamental importance. Left unresolved, the frequency rating is 'occasional' but death or serious injury is 'likely'. Furthermore, from a broader effects based perspective, the proposal does also have potential to substantially disadvantage the affected party. However it is understood that a Submission has been withdrawn.

- 258. There are other important outcomes, but possibly manageable through conditions of Consent:

- a. Lydia Street Roundabout, rating minor:

The auditors consider that the roundabout in the northwest of the site doesn't allow for the turning paths of larger vehicles, and furthermore that customers access should not be provided via Lydia Street due to incompatible adjoining land use mix (Toll site and proposed delivery vehicle access to the Supermarket). The recommendation is to not construct a roundabout and not allow customer access.

The reply was that the access forms a ROW for access to Main North Road, and that the roundabout would be designed to be 'fully mountable' (thus addressing the access issues associated with semi-trailer vehicles). However, it is not clear as to the relevance of the ROW in the Design's response. It is worth noting that Toll have sold the 2 Lydia Street site and are discontinuing operations. However, the effects associated with mixing delivery vehicles and customer access would remain.

- b. Oil Changers access to Northcote Road, rating **significant**

The 'Oil changers' refers to the north east corner, (abutting Main North Road and Northcote Road, (7 Northcote Road)).

The Auditors consider that the access (known as Access 7 (see Figure 19, p64)), is close to the QEII Drive / Northcote Road / Main North Road intersection, and as such conflicts and confusion could arise. The recommendation is to extend the existing central median across Access 7, rendering it left in – left –out only. This recommendation is agreed by all parties and would become a condition of consent.

It is worth noting that, (separate to the Safety Audit) the Joint Witness Statement (16th October 2019) recommended a further condition affecting Access 7 to address concerns of excessive left turn into the site reducing the operating capacity of the Northcote Road exit of the QEII Drive / Northcote Road / Main North Road intersection.

c. Pedestrians (i), rating minor:

The Auditors consider that a separate pedestrian path be provided via Access 7 (as above, see Figure 19, p64) and connecting to the proposed development. 'There is an obvious desire line and a clear path should be defined.' Both parties agree and a path is now proposed.

d. Right of way access, rating minor:

The Auditors consider that Access 5, the southernmost access to FSIL Offices (see Figure 19, p64) does not include complete or coherent pedestrian access facilities. It is recommended that if the ROW remains, that a 'safe pedestrian path' be implemented.

The Safety Engineer responds stating the ROW status is no longer required as the Applicant has purchased the site (155 Main North Road), and proposes that it be used only as 'an after hours entry/exit'. The Safety Engineer agrees stating that details should be made available to enable a full assessment.

e. Internal roundabout, rating **moderate**

The Auditors consider that the capacity of the proposed roundabout, located 50m west of the proposed signalised access will be blocked during peak periods. The auditors recommend that the roundabout not be constructed, and that access from the proposed access between FSIL Office and the signalised access be removed

and instead provide FSIL southbound access to Main North Road via a u-turn slot south of the proposed signalised access.

The Design engineer suggests that access to the roundabout could be restricted at certain times of day, with a monitoring / review clause (under 128 RMA) in place to determine the specified times of day. The Design Engineer also states that ‘the modelling demonstrates that the roundabout operates satisfactorily’. However, review of the modelling with the Applicant’s modelling team showed that this was not the case. The Design Engineer was not wrong, as the Paramics modelling used is a ‘dynamic’ tool and yields different outcomes every time it is run (due to the randomisation of certain variables), and hence the model must be viewed / run multiple times in order to gain a more complete understanding of possible outcomes. The Design engineer is also opposed to a u-turn slot.

The Safety Engineer agrees that a u-turn slot is not a desirable design outcome, but disagrees with the proposed monitoring / review approach to mitigation: “From a safety perspective it is unreasonable to rely on management to prevent staff exiting the car park at certain times of day”.

I have drawn a similar conclusion to the Safety Engineer from a wider perspective including the potential for obstruction of the Core PT corridor.

f. Traffic signals

i. Signal phasing

The Auditors consider that left turn slip lanes with zebra crossings are an unsafe treatment for pedestrians. This is in consensus with the wider field. Although pedestrians would have right of way on the crossing, a failure of a driver to observe the pedestrian would more likely lead to injury given the higher approach speed.

The design engineer proposed to include raised crossings, which would be expected to mitigate the effects of speed. However, the Safety Engineer agrees with the Auditors, and holds that controlled left turn movements would be safest.

For some perspective, Council is currently developing some very major road schemes including left turn configurations which would support a far greater demand than proposed in this case, and with the use of a signal control, rather than use of a ‘free’ left turn slip lane. The signalised option delivers better safety outcomes with little difference in overall operating performance.

Subsequently, it has been determined to maintain the left turn slip into the site with a raised table crossing, in order to separate out the left run movement from the bus lane. However, the left turn out of the site will be signal controlled, and not a slip lane.

ii. Cyclists

The Auditors considered that provision for cyclists should be made at the signalised access. This includes advanced cycle stop boxes.

All parties have agreed with this recommendation.

g. Pedestrian phase / median islands

The Auditors considered that the proposed signalised access did not include sufficient time for pedestrians to cross Main North Road in a single phase, and required a widening of the median island, and specialist detecting equipment to extend the green time to cover 'walk time' as required. The audit also recommends including a second crossing of Main North Road on the south side of the signalised access.

The Design engineer agrees with the Auditors' recommendations, but suggests that a crossing on the south side would not be warranted.

The Safety Engineer agrees with Auditors, except the matter of a second crossing wherein no comment is offered.

It should be noted that to accommodate this change the bus lane is narrowed from 4.2m to 3.7m, which is the bare minimum.<sup>9</sup>

h. Median islands

The Auditors consider that a splitter island be included on the supermarket access and all parties agree.

259. Outcomes where it is agreed that no further action is required

a. Pedestrians (ii), rating minor

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<sup>9</sup> In accordance with Austroads design standards

The Auditors also consider that better, more direct walking linkages be included, improving connections with the proposed pedestrian crossing of Main North Road (at signalised access). The Auditors also recommend the covering of cycle parking.

The Design engineer and Safety engineer are agreed that no changes for the benefit of safety are warranted as the Auditors recommend.

260. There are some outcomes at this stage which appear to be unresolved, including:

- a. Lydia Street roundabout – the mix of customer traffic and delivery vehicles appears unresolved.
- b. Internal roundabout – the proposed monitoring / review condition managing vehicle movements between FSIL office and the proposed supermarket is not supported at this stage.
- c. Private access to the traffic signals – although agreed that signalling is needed but not possible.
- d. Signals design to accommodate pedestrians and a bus jump. Although resolved in isolation, no plan has yet been seen which shows how these additional requirements can be safely and appropriately included.
- e. Right of way access for pedestrians – proposal yet to be seen.

261. In conclusion, the Safety Audit process would be ongoing (assuming that Consent be granted). However, several recommendations appear to require further development to demonstrate feasibility, for purposes of Consent.

## **7.4 Other assessment areas**

### **7.4.1 Inappropriate vehicle routing “rat running”**

262. The matter of assignment via Winters Road to gain access to the Northern arterial is an outcome of the modelling assessment. This is undesirable, given that there is a Primary School. Should this occur, mitigation measures must be implemented, including adequate Local Area Traffic Management to deter rat running

263. The possibility of additional traffic using Vagues Road has also been examined using the CAST model. The concerns around additional traffic were raised in the (s92) RFI. The reason is that by reducing northbound capacity on

Main North Road between Cranford St and Main North Road, Vagues Road would become a more attractive route connecting Cranford Street with Northcote Road than using Main North Road.

264. Vagues Road is identified in the District Plan as a local road, and henceforth is not intended for use as a connection between two arterial roads; the role of a Collector road.

265. Although investigation in the CAST model showed negligible growth in traffic following development, there is a flaw in the CAST model simulation. The Vagues Road is less attractive in CAST because of a calculated high delay (of 67 seconds) in turning right into Vagues Road from Main North Road. This delay does not exist in reality due to a 'reverse priority' situation, where gaps are left for right turners; an arrangement that the CAST model cannot reliably replicate.

266. During conferencing on 15<sup>th</sup> October, the Applicant agreed to investigate the impacts of routing on Vagues Road further. The Paramics model supplied is able to simulate the complex arrangement described above, and henceforth can provide clarity on the matter.

#### **7.4.2 Access**

267. The site includes five accesses to/from Main North Road. These are numbered on p22 of the ITA, and reproduced below for convenience:

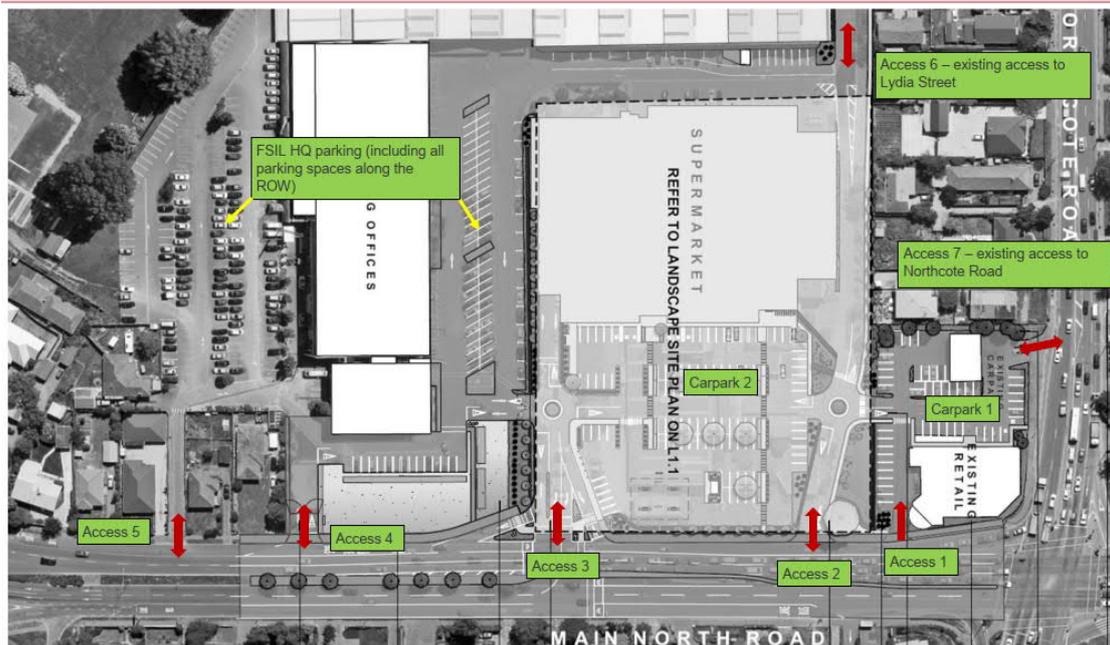


Figure 19: Access referencing, lifted from ITA p22

268. The permitted number of accesses under the District Plan would be two and as such, the proposal is considered to be non-compliant. Every point of access represents, to varying degrees, a capacity constraint to the network. Network modelling shows that the Main north Road (south) approach to the QEII Drive / Northcote Road / Main North Road intersection will operate at critical capacity levels in all future scenarios.

269. This issue has been raised through the Transportation caucusing. In response, the Applicant points out that there is scope to restrict turning movements at some locations, with Access 1 suggested to operate as a 'one way entry'. (JWS, 16<sup>th</sup> October 2019, p2).

270. In my opinion, there is no need for both Access 1 and Access 2 (see Figure 19), that could not be provided by a single access point between the two. Although Figure 2 does serve a right of way, it is possible for access 1 and access 2 to become a single point of access (with an amendment to the ROW registered with LINZ).

271. Furthermore, there are concerns that demand for Access 7 (see Figure 19, above) from Northcote Road could have effects on the capacity of Northcote Road and the QEII Drive / Northcote Road / Main North Road intersection. Again,

forecast demands for capacity are critical, and all experts at the conferencing agreed that this should be monitored and reviewed if necessary. A condition of consent is required whereby internal vehicle access to the supermarket would be removed should effects arise.

272. The Applicant already offers a condition that the median on Northcote Road be extended to render Access 7 as left in, left out only.

273. There are also some concerns around the available width of the median at Northcote Road, at the access of Lydia Street. It is 1.2m wide; less than half the ideal width for a right turn bay requirement. This standard would unlikely be acceptable for the proposed scale of use, (including potentially 100 turning vehicles per hour). The effects would include inability to store queues separate from other vehicles, and could potentially pose safety effects as well. The current demand for turning right into Lydia Street is very low; the existing design layout represents suitable provision for the permitted (Industrial General) activities served, noting that these do not typically include high trip generating activities, (a matter discussed in section 7.2.3.2 (Future baseline: Consented baseline assumptions)).

274. In terms of mitigating the access issues into Lydia Street, it should be noted that the current LTP includes the proposed Northcote Road Route Improvements from 2024; one year after the proposed activity would commence operations. Furthermore, there is also the likelihood that the right turn movement would be restricted as part of a preferred Northcote Road Route Improvements scheme.

275. The details around resolving the safety concerns affecting access to the Redwood Family Dental practice also requires resolution. The safety Audit team conclude that the access is not appropriate to be signalised, nor can customers continue to access the site as, without signals, they would struggle to exit the site, and probably not do so safely.

### **7.4.3 Accessibility**

276. It is not clear as to how pedestrians would cross Northcote Road. The ITA figure 6.2 shows a plotted pedestrian walking catchment, however those within the ten minute catchment have no obvious safe crossing opportunity across Northcote Road, apart from being diverted away from desire lines.

277. Furthermore, it is not known how cyclists will access the site from the shared path on the QEII Drive. It is not known whether the proposed pedestrian crossing

(part of the Main North Road signalised access) also provide for cyclists, and further how cyclists would reach it.

278. There are also concerns about the availability of the walking desire line connecting Northcote Road to the FSIL Office, via Lydia Street. This link is proposed to be fenced off, prohibiting connectivity. Given that the proposed parking aisle width is 5.0m, it is uncertain as to if or how improved pedestrian connectivity could be included.

#### **7.4.4 Internal layout**

279. There is an issue with internal circulation design, whereby the proposed roundabout (located 50m from the signalised access) could operate poorly. The concern is that during a red light at the access, a queue would block back onto the roundabout, and effectively block roundabout exits. Consequently, traffic entering the site from Main North Road would have nowhere to go.

280. The issue arises as the roundabout has four arms, serving the basement car park, surface park, FSIL office and Main North Road access, respectively. It is likely that the design capacity of the roundabout is not enough to support the circulating flow requirements, especially during the busier periods. The effects of this shortfall in capacity could be reasonably expected to affect the operations of Main north Road, through blocking back.

281. This issue was raised both through examination of the modelling and also through the safety audit process. However the ITA states that the model did not show a scenario severe as such to block back to Main North Road. However, the Applicant agrees that there is a risk of blocking back to Main north Road, enough to warrant considering a monitoring and review clause (ITA p20). This is also the Applicant's response (as 'designer') in the Safety Audit.

282. However, the Safety Engineer in the safety audit does not support this mitigation, and the preference of Council is that the access from the FSIL office be closed, so as to effectively relieve pressure from the roundabout such as to reduce risk of blocking back.

283. Alternative options would be either to propose a higher capacity traffic control device (e.g. a bigger roundabout), relocated the roundabout or reduce the demands entering the roundabout, or by time of day with a barrier.

284. Use of a barrier arm, operated at different times of day is not a desired outcome, given that the issue of capacity has already been demonstrated by the Applicant's

model and that the potential effects would be disruptive, including to the Core Public Transport corridor, which would be blocked. As there is a demonstrated risk, it would be inadvisable to opt for a monitoring and review condition, thus rendering the potential issue as ongoing.

285. The recommended design change is to close the proposed access to the roundabout from the FSIL Office, thus reducing demands on the roundabout.

#### **7.4.5 Internal parking module design and layout**

286. During caucusing, I raised the point of the internal design for access and manoeuvring, noting that half of the proposed parking is a basement car park, accessed via a ramp, and negotiated between structural columns. The Australian / NZ Standard for Off street parking (NZS 2890.1) provides a comprehensive design standard for such an environment and the Applicant has agreed that the standards will be used in design. This deals with the entire matter of parking design.

#### **7.4.6 Cycle parking**

287. During conferencing(16<sup>th</sup> October) it wasn't clear as to how many cycle parking spaces were proposed. The compliance assessment (ITA p59) does not state exactly how many cycle parking spaces are proposed.

288. The ITA states that the minimum 23 visitor spaces and 9 staff cycle spaces would be provided, achieving "compliance", but doesn't state the actual proposed number

289. There are concerns about the potential for minimal provision, because the compliance of car parking provision appears to be dependent upon the parking reduction factors, which include a reduction of 5% (approximately 15 spaces) due to proximity to a Major Cycle Route. This would imply that an appropriate extension be made to cycle parking to meet the anticipated additional demands (not catered for through car parking). However, the parking provision could still be 'compliant' without relying implicitly on cycle parking, as a 16% reduction (47 spaces) is generated by access to Public Transport.

290. However the Applicant is proposing to use Travel Demand Management (TDM) to mitigate factors including non-provision of allocated staff car parking, and potentially other transport effects. This suggests a strategy aimed at

changing travel behaviour, the success of which is seemingly reliant on more than minimalistic infrastructure provision for cycle access.

291. I would recommend seeking further information from the Applicant as to the exact proposed cycle parking, and how it fits in detail into the transportation proposal.

## **7.5 Summary of Joint Witness Statement on the matter of Transportation Assessment**

### **7.5.1 Summary**

292. The conferencing included delegates from all parties, including:

- Messrs Dave Smith, Paul Durdin, Abley (The Applicant)
- Mr Ian Clarke, NZTA
- Mr Len Fleete, Environment Canterbury
- Messrs Richard Holland, Mark Gregory (CCC).

293. The session stepped through the ITA, except for the section termed 'modelling' as this was deemed covered by the preceding four-conferencing sessions.

294. The session was largely full of agreement, though the conversation was framed around the ITA. Matters outside of this were not discussed.

295. Key outcomes and point so agreement included:

- a. Seeking more information about the crash history
- b. Concerns raised about the number of access onto Main North Road and request to reduce them
- c. The concerns about the potential for the Northcote Road access ('Access 7') to impact upon Northcote Road, and the need for a monitoring / review condition with a view to closing access to the supermarket (but not from) in the even that it be heavily used
- d. Need to ensure continuity of the southbound bus lane

- e. Concerns regarding proposed non-inclusion of designated staff parking, noting that future Northcote Road route improvements and the conversion of part time bus lanes to full time clear ways would result in the loss of on street parking. Given observed existing levels are low, the impacts of this loss are currently estimated to be low.
- f. Concerns that the fuel station is located across pedestrian desire lines, if bus stops are located to the north of the proposed access
- g. The need to ensure resilience of access and delivery access options, noting the future Northcote Road Route Improvement which will likely restrict turning movements to and from Northcote Road, including at Lydia Street

### **7.5.2 Areas of disagreement / need for clarification**

- 296. The use of Travel Demand Management (TDM) was tabled to mitigate the effects of not providing designated on-site parking, but not agreed as final, having not yet been seen and considered.
- 297. Details regarding proposed cycle parking numbers were not available
- 298. The statement that 'public transport priority is maintained or enhanced...' There is a difference between maintaining and enhancing. Both terms were included simply because there was no agreement on this point. My expressed opinion has been that all policy is aligned with a view that the PT corridor is going to be enhanced, and that integration from development is part of the delivery mechanisms of the desired PT future identified in the RPTP.
- 299. A swept path of a semi-trailer vehicle turning left into Lydia Street was requested to demonstrate the availability of delivery access to the site by such vehicles, in the event that the right turn movement from Northcote is restricted.

## **8 Response to submitters**

### **8.1 Canterbury Regional Council ('ECan')**

- 300. The Regional Council are affected by matters related to transport, in their capacity as Managers of the operation of Public Transport routes, and in their capacity as the leading partner in the UDS and Policymaking for Urban Development outcomes, including the Regional Planning Policy statement and Regional Land Transport Strategy.

301. The Council notes that moving Commercial activities away from Key Activity Centres (KACs) is contrary to the objectives of the CRPS and UDS. The Council also notes that additional traffic lights could have impacts upon the efficiency of Public Transport operations, including implications for the development of the Core PT route, described in the RPTP
302. This assessment covers off these matters in response to Policy, and through the engagement with network effects assessment.
303. Mr Len Fleete represents the Council in a Joint Witness Statement (JWS), pertaining to conferencing on transportation matters held on 16<sup>th</sup> October. During this session, the concerns of impacts on the efficiency upon PT were raised, a statement offered including a commitment to mitigating effects and designing in order to enhance the PT corridor, and encourage use.
304. In my opinion, conditions of consent can be used to mitigate and/or avoid impacts on PT operations (in both directions), but that matters affecting policy (such as impacts on bus lane width) should be understood and resolved prior to Consent being granted. However, there is no obvious mitigation to the policy concern regarding the choice of site.

## **8.2 New Zealand Transport Agency (NZTA)**

305. The NZTA are partners of the UDS and funders of the RLTS. The NZTA also manages the operations of the QEII Drive / Northcote Road / Main North Road intersection, in partnership with the CCC and CTOC.
306. It should be noted that there is presently no schedule for the change in management of the QEII Drive / Northcote Road / Main North Road intersection, and no guarantee that this will happen, including once the CNC is operational. The NZTA will be a key partner in resolving any network changes found to be relied upon by Consent.
307. Concerns have been raised specific to the modelling, and Mr Ian Clarke represented the NZTA during the conferencing and is a signatory on the Joint Witness Statement (JWS). The outcome of the conferencing is covered in section 7.2.
308. Concerns have also been raised about the possibility of the proposed network changes not being resolved by the Road Controlling Authorities, noting

that at time of public notification the NZTA had not been consulted by the Applicant.

309. Concerns were raised about impacts on Public transport, and accessibility by walking and cycling. I share these concerns and recommend that design for walking and cycling accessibility both to and within the site be improved.

310. Concerns about the alignment with the UDS and CRPS, which are similar to those expressed by the Regional Council. Again, there is no obvious mitigation to the policy concern regarding the choice of site.

### **8.3 Roman Catholic Diocese of Christchurch (RCDC)**

311. The RCDC own the site known as 2 Lydia Street. The site is accessed via Lydia Street and also via Right of Way which passes through the Application site. The RCDC have published intent to develop a Secondary Education facility at 2 Lydia Street, but have not yet obtained the necessary planning approvals.

312. The RCDC supports the Application, and supports the provision of measures to enhance PT priority on Main North Road.

### **8.4 Christchurch Citizens Collective**

313. The Christchurch Citizens Collective oppose the signalised access on grounds of increasing journey times on Main North Road, and are concerned about impacts on traffic efficiency, generally.

314. The subject of traffic efficiency is covered in detail in Section 7.2. The effects upon traffic efficiency are the subject of extensive simulation and review.

### **8.5 Redwood Family Dentists**

315. The submission from the Redwood Family Dentist has been withdrawn. However, consideration of effects is still relevant as a matter of the Road Safety Audit.

316. The summary of the matter is that the Dentist's access is located opposite the proposed signalised access. It would be unsafe for the access to not be included within the signals plan, but simultaneously not possible to be included

on design grounds. A fuller description of the issues are set out in paragraph 257.e.

317. It is unknown as to the establishment of the activity and its parking, with the last recorded Resource Consent dating 1994<sup>10</sup>, and not including any details at all relating to access or transport.
318. The effects on the activity would also include loss of on street parking opportunities on the frontage, as part of the proposed signalised access plans. It should also be noted that it is likely that Council will convert the southbound bus lane from a 'peak hour only' lane to a permanent one, in the delivery of the first stages of the Regional Public Transport Plan. This would also result in removal of parking opportunities.
319. It is assumed at this stage that a plan has been developed to resolve the effects, given that the Submission is withdrawn. However, if the signalised access it to proceed as proposed, and the Redwood Family Dentist access cannot be included in this plan, then vehicle access to the site by customers would need to be discontinued on safety grounds, and the affected party both aware and consensual to this outcome.

## **9 Summary of key outcomes**

### **9.1 Impacts upon managing the Transport network**

320. The modelling outcomes show that the development can be accommodated, but only by the displacement of baseline traffic. The future baseline model shows that the Main North Road approach to QEII Drive operates at or near capacity.
321. There is missing information, which would enable this assessment to support the modelling outcomes at this stage. One such matter includes the management of modelling risk through sensitivity testing, considered a best practice method. The critical right turn movement into the site is expected to operate with a very high degree of saturation from commencement, and would be especially sensitive to forecast risk, with potential consequences for network safety. The value of sensitivity testing would be instrumental in quantifying the likelihood of success of subsequent processes associated with implementation.

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<sup>10</sup> RMA/1994/128

322. There is also the matter of seasonal variance in demand. The surveys undertaken to estimate trip generation were undertaken in May and July, which are 'quieter' months on the network. Due to the high degree of saturation, during data derived from 'quieter' months, it is not fanciful to consider that effects would be greater during the busier spring and summer periods.
323. The affected network includes the Major Arterial network, which has a specific freight transport requirement and one of the two most important Public Transport corridors in the Greater Christchurch area.
324. Avoidance or mitigation of effects on these networks is critical, at a strategic level. The need for accurate modelling is also the first matter observed in the safety Audit.
325. Some concerns remain as to possible reliance of proposed vehicle access on the availability of full turning movements at the Northcote Road / Lydia Street intersection. For this reason, the JWS includes statements seeking that sensitivity testing be undertaken (from myself) and that the availability of left turn movements into Lydia Street by larger delivery vehicles be tested.
326. The Applicant has made a statement that the development would not be reliant on the availability of full turning movements at Northcote – Lydia Street (JWS 16<sup>th</sup> October 2019, p4). It is stated "(if) Lydia Street could not be used for access the site these [semi-trailer] vehicles would simply not be able to be used and smaller service vehicles such as rigid trucks would be used to service the site instead".
327. However, the use of semi-trailer vehicles for a proposed supermarket of this size might also be considered of the same 'standard practice' quoted (ibid) with reference to separating delivery vehicles and customer movements. It might not be fanciful to question the statement that use of smaller vehicles would be a commercially acceptable practice for the Applicant. Therefore, the preference would be to receive a demonstration that a left turn movement into Lydia Street by a semi-trailer vehicle is possible. The results of this have not yet been viewed at this stage.
328. Detailed design of the proposed signalised access has not been seen. Following assessment processes, including the Safety Audit, the signalised access is required to:
- widen central median for increased waiting space for pedestrians

- provide a bus jump
- provide additional turning lanes
- Maintain minimum bus lane widths and safeguard the PT corridor for purposes laid out in the RPTP

329. There is a concern that through the design, the bus lanes would be squeezed, which is contrary to the needs to safeguard the space available for Core PT route development.

330. It is preferable that this matter be addressed prior to the granting of Resource Consent, simply because there are implications of design outcomes on policy objectives.

331. It should also be noted that a 'bus jump' includes pre-emption of buses (through either loop detectors, or on-board transponders. This would ensure that northbound buses do not experience a red light, rather than negate the need for a continued northbound bus lane, north of the signalised access.

332. Alternative access arrangements have been considered, in the event that the proposed network changes cannot be implemented. These include:

- a. Full priority movements on Main North Road: this would not likely be feasible. The side road level of service would be poor such as to warrant safety concerns
- b. Left in – left out: This would potentially result in u-turn movements and pose a crash risk at surrounding intersections
- c. Traffic signals on Northcote Road: Formally proposed by the Applicant, and subsequently requested for deletion from the proposal. As a regionally significant route, Northcote Road shall be afforded the maximum degree of network protection.
- d. Access via a fourth arm at Main North Road / Cranford Street intersection: a potentially feasible outcome.

333. In conclusion, there are limited vehicle access alternatives.

334. Although a recommendation of support cannot be given at this stage, due to incomplete information, there are some arguments in support as well, including:

- a. Main North Road has been downgraded to a minor arterial in anticipation of the CNC fulfilling the Major Arterial road function to the north. The longer trips (geographically) that are seen today heading for Kaiapoi are forecast to be replaced with shorter ones, generally more associated with access to the KAC and the Northcote / Belfast areas. This changes the context of effects on traffic on Main North Road.
- b. The CAST model for the most part does not account for the successful delivery of the RPTP. In practice, a sustained investment in Public transport will achieve a mode shift towards public transport; an outcome, which would reduce traffic, effects (pending safeguarding of and development integration with the Core PT corridor!)
- c. The ability for the road controlling authority to safeguard effects on Northcote Road through management of green time allocation.

## 9.2 Accessibility by PT and healthy means of travel

335. The UDS action plan sets out the policy that:

*'public passenger transport use...(be) encouraged through the provision of consistent, high quality infrastructure, excellent services and by ensuring easy, direct access through new and existing development...'*

336. The proposal can respond to this strategy by fully mitigating or avoiding impacts to the core PT corridor, and by providing direct and quality walking access to well considered bus stop locations, that meet the definition of 'high quality'.

337. Furthermore, policy would direct more than just mitigation but integration. A major development on the core PT corridor would be expected to grow PT patronage as the route develops, as described in the RPTP. As such, the development must demonstrate a design outcome demonstrating integration. Based upon good Transport Planning practice this would include:

- Direct and universally accessible walking connections, with priority across parking aisles, and covered where possible, leading to covered PT stops with adequate seating. An active frontage, minimising walking distance between the activity and the bus stops would be optimal.
- It could also include PT real time information within the development

- Suitably located trolley drop off locations, on route to the bus stop (to ensure that trollies are not simply abandoned in the public road way as can be routinely observed at the Northlands Mall Interchange)
338. The ITA pledges an 'excellent' standard of walking and cycle design, but in my opinion, this is not yet demonstrated.
339. The JWS considers that internal walkways and bus stop location design be considered together. Integration between major land use and PT is a policy objective sought by the District plan, CTSP, RPTP and CRPS.
340. The JWS (16<sup>th</sup> October 2019) uses the words 'preserve the public transport role of the Main North Road corridor', whereas I used the words 'enhanced' and 'encouraged'. 'Preservation' is not enough to satisfy the policy requirements.
341. Regional Policy anticipates that major land use developments on the core PT corridor must be compatible with strategic transport objectives, including being able to grow patronage in tandem with planned enhancement and increasing capacity of the Core PT route. The role of land use is identified as crucial to the success of planning for Regional transport objectives
342. The current use of the site, including as a major place of Office employment does lend itself well to this objective, inasmuch that Travel Demand Management (TDM) proves to be effective when applied to Office / employment sites. If the Application were considered as a plan change as well, more consideration could be given to the preferred land uses which would best integrate with and enhance PT use in the corridor.
343. There appears to be a real reliance on multi-modal access to the site to counter the issues of limited capacity for car traffic, which would require more than just mitigation of effects on the PT corridor. One quarter of trips arriving at the site are predicted to be walked, cycled or using PT. However, there is little evidence of this significant demand having been suitably designed for
- Unknown cycle parking numbers and uncovered customer cycle parking
  - An internal walking network neither direct nor attractive
  - Undetermined Public Transport stop locations and standard of facility
  - Unknown cycle and pedestrian access. Connectivity between the cycle parking and the QEII Drive shared path to the site is required, without

sharing a complex road environment. Crossing of Northcote Road is also required, providing a direct and safe crossing. As well as transport goals, this would support community goals also (Policy 7.2.1.1)

- A transport systems view: the proposed parking provision would be reliant on reduction factors (multi-modal access) to achieve 'compliance'. However, the value of the reduction is about 60 spaces, and the alternative access to offset these 60 spaces is not demonstrated. Furthermore, there is no demonstrable link between proposed 'Travel Demand Management' (TDM) and provision of alternative access.

344. In order to be supported, I strongly recommend that the design of the site be scrutinised against the criteria of whether it will be set up to grow PT use, and the extent to which it supports Community policy outcomes.

### **9.3 Parking availability and design**

345. The District Plan would require 301 parking spaces before application of parking reduction factors. A 21% discounted rate is available by merit of proximity to Public transport and a Major Cycle Route. This discount is worth equivalent of 60 parking spaces.

346. This reliance adds weight to other assessment areas, concerned with maximising access to alternative modes. This includes the proposed non-inclusion of allocated staff car parking.

347. Agreement has been reached that the design of the car-parking module be undertaken in accordance with New Zealand Standard 2890.1, which will ensure an outcome better than that required to achieve compliance with the District Plan.

348. There is still concern about the proposed non-allocation of staff parking, and the potential effects on the surrounding on street parking network.

### **9.4 Trip generation and network effects**

349. The proposal includes a vehicle generation rate, which appears reasonable, based on the surveyed outcomes of three other locations.

350. The proposal includes a mode share for car of 74%, meaning that an estimated one quarter of customers would arrive on site by other transport

means. This has implications on the design of the access infrastructure, including for PT, walking and cycling.

351. The proposed rate of 20% of trips being primary is well reasoned in the ITA, and plausible. Examination of the synthetic origin and destination of trips shows a plausible scenario where the majority of trips could be diverted or 'stop in' on the way home in the evening.

352. However, this arrangement would likely yield a bigger increase for right turn movements at the QEII Drive / Northcote Road / Main North Road intersection than currently forecast.

353. There is a high degree of sensitivity to these assumptions, which forms part of the best practice process of sensitivity testing.

## **9.5 Comparison with Plan Change outcome**

354. The request to rezone the land as Commercial was declined by the IHP, given the uncertainty that the CNC was going to proceed, and that the analysis showed that without the CNC there would be no possibility of accommodating a Commercial Zone on 171 Main north Road without more than minor network effects.

355. In this instance, there are still some degrees of uncertainty as to the shape and form of the CNC (see Section 6.2.1 (Effects of the Christchurch Northern Corridor (CNC))). The outcome could potentially either increase or decrease the forecast demands in future baseline modelling.

356. It should be noted that analysis required to implement Consent would be based on post CNC observation and that there would be no direct risk to the network from the reported modelling outcomes.

## **10 Conclusions and recommendations**

357. The proposal does not appear to respond to Policies, across all levels, requiring integration with the Core Public Transport Corridor. The proposal does not demonstrate a design that would suggest encouraging an increasing level of PT usage over time, towards becoming a transit oriented development, in tandem with plans for sustained PT investment.

358. There is still an unanswered question about reliance on full turning movements at Lydia Street, meaning that if consented, there is a risk of the Northcote Road Route Improvements significantly disadvantaging the Consent Holder.
359. There is incomplete information to support a technical assessment, including that the network effects will be acceptable. This is described in Section 7.2.7. The independent peer review may prove useful in resolving aspects of the proposal related to modelling and network efficiency.
360. The development is estimated to be operational by 2023, by which time schemes on Northcote Road and the Core PT corridor will be known in detail and proceeding to delivery stages, and anticipated to be resolved as Regionally Significant Projects (and affording such policy protection).
361. There is a clear and present need to ensure the safeguarding of the core PT corridor and the Northcote Road – QEII Drive corridor. These are both of strategic significance and should be afforded the highest degree of policy protection. Schemes on these routes will likely be included in the Regional Land Transport Plan, with regional ramifications.
362. Development relies heavily on network design changes and also on the re-routing of other traffic already in the network. There is little available 'spare capacity' where it would be needed (i.e. on Main north Road) to accommodate the development traffic. Managing the model limitations and over reliance on baseline traffic rerouting has not been explicitly demonstrated, and the need for 'accurate modelling' is a key recommendation of the Road Safety Audit team.
363. There appears to be a real reliance on multi-modal access to the site to counter the issues of limited capacity for car traffic, which would require more than just mitigation of effects on the PT corridor. One quarter of trips arriving at the site are predicted to be walked, cycled or using PT. However, there are outstanding matters relating to ensuring safe and an adequate access provision for these modes. These specific issues are identified in paragraph 343.
364. It is possible that the Application could be amended to demonstrate all of the above, and be approved with conditions (including some already discussed and agreed). However, I strongly advise that matters relating to policy responsiveness, including the implications on the bus lane through signalised

access detailed design, be addressed through Consent, and not subsequently as a condition.

365. There is also the issue of resolving effects upon the Redwood Family Dentist (as set out in Section 8.5).

366. There are some supporting factors to the Application including:

- If confidence levels can be increased, the Applicant' forecast operational outcomes show that the development traffic can be accommodated, and in a manner which satisfies the safety audit and the requests made by CTOC and NZTA experts.
- Eighty percent of development traffic is not considered 'primary' and that many pass by trips would bypass the QEII / Northcote / Main North Road intersection by access to the south and exiting via a left turn from Lydia Street to the west.
- One quarter of trips are predicted not to arrive by car, and this figure should be expected to increase with the development of the core PT corridor, if the proposal is a compatible land use, as required by Regional Policy. This increase would be delivered through both development of the Core PT route, including an increase in the frequency and capacity of services, but also through effective Development design integration. This is described well in the RPTP.
- Proposed Travel Demand Management for staff and FSIL Office staff. However, the strategy, goals and monitoring / review plan of this proposal have not yet been seen.
- Examination of the 'base' CAST model revealed some over-estimation of demands from Cranford Street northbound, measured against count data. This indicates that the CAST model could be considered to over-estimate demands on this part of the network. This would be expected to have a very slight impact.

367. Nonetheless, I am unable to recommend that the proposal be supported at this stage.

A handwritten signature in black ink, appearing to read 'Mark Gregory', with a long horizontal stroke extending to the right.

Mark Andrew Gregory

6<sup>th</sup> November 2019

## 11 Appendices

### 11.1 Modelled network flows by scenario

PM peak		Arrive flow								
		2018	2021	Dif	2021	Dif	2031	Dif	2031	Dif
QEII - MNth - Northcote		BASE	Future baseline	2021 - 2018	Future D'ment	2021 dif.	Future baseline	2031 - 2021 baseline	Future D'ment	2031 dif
NORTH	Left	68	211	143	211	0	190	-21	182	-8
	Ahead	964	241	-723	239	-2	242	1	275	33
	Right	220	84	-136	108	24	134	50	150	16
	u-turn	0	0	0	0	0	0	0	0	0
EAST	Left	159	381	222	417	36	427	46	458	31
	Ahead	609	919	310	967	48	1098	179	1095	-3
	Right	171	136	-35	176	40	104	-32	127	23
	u-turn	0	0	0	0	0	0	0	0	0
SOUTH	Left	300	66	-234	97	31	64	-2	137	73
	Ahead	1584	807	-777	720	-87	800	-7	747	-53
	Right	328	441	113	498	57	634	193	603	-31
	u-turn	0	0	0	0	0	0	0	0	0
WEST	Left	260	104	-156	87	-17	283	179	300	17
	Ahead	762	1052	290	1001	-51	1132	80	1117	-15
	Right	237	63	-174	56	-7	53	-10	56	3
	u-turn	0	0	0	0	0	0	0	0	0
total		5662	4505	-1157	4577	72	5161	656	5247	86

Figure 20: CAST modelling for PM peak hour: difference in turning movements at QEII / Northcote / Main North Road intersection. Yellow represent baselines and turquoise development outcomes for 2021, 2031 respectively

PM peak		Arrive flow								
		2018	2021	Dif	2021	Dif	2031	Dif	2031	Dif
MNth - Cranford		BASE	Future baseline	2021 - 2018	Future D'ment	2021 dif.	Future baseline	2031 - 2021 baseline	Future D'ment	2031 dif
NORTH	Left	613	65	-548	186	121	129	64	278	149
	Ahead	727	583	-144	678	95	553	-30	635	82
EAST	Left	217	323	106	326	3	257	-66	196	-61
	Right	1076	536	-540	489	-47	501	-35	567	66
SOUTH	Ahead	1034	764	-270	805	41	984	220	908	-76
	Right	272	521	249	503	-18	201	-320	280	79
total		3939	2792	-1147	2987	195	2625	-167	2864	239

Figure 21: CAST modelling for PM peak hour: difference in turning movements at Main North Road / Cranford Street intersection. Yellow represent baselines and turquoise development outcomes for 2021, 2031 respectively

PM peak		Arrive flow								
		2018	2021	Dif	2021	Dif	2031	Dif	2031	Dif
Development access		BASE	Future baseline	2021 - 2018	Future D'ment	2021 dif.	Future baseline	2031 - 2021 baseline	Future D'ment	2031 dif
NORTH	Right				60				87	27
	Ahead				653				702	49
EAST	Left				246				279	33
	Right				245				244	-1
SOUTH	Left				254				266	12
	Ahead				1044				1232	188
total		0	0	0	2502	0	0	0	2810	308

Figure 22: CAST modelling for PM peak hour: difference in turning movements at Main North Road / signalised access.

## 11.2 Modelled degrees of saturation

QEII - Main North Rd - Northcote Road		Degree of Saturation (%)				
		2018	2021	2021	2031	2031
		BASE	Future baseline	Future develop- ment	Future baseline	Future develop- ment
NORTH	Left	9%	42%	41%	40%	36%
	Ahead	62%	42%	48%	43%	46%
	Right	68%	42%	64%	64%	67%
	u-turn	0%	0%	0%	0%	0%
EAST	Left	26%	35%	38%	38%	41%
	Ahead	74%	75%	79%	91%	91%
	Right	72%	87%	89%	79%	86%
	u-turn	0%	0%	0%	0%	0%
SOUTH	Left	34%	8%	12%	9%	19%
	Ahead	102%	96%	98%	84%	97%
	Right	83%	98%	99%	96%	99%
	u-turn	0%	0%	0%	0%	0%
WEST	Left	43%	13%	11%	36%	37%
	Ahead	93%	86%	82%	94%	93%
	Right	87%	40%	28%	40%	38%
	u-turn	0%	0%	0%	0%	0%

Figure 23: Degrees of saturation, (% of capacity "used"), QEII / Northcote / Main north intersection, for each modelled scenario

Cranford - Main North Road		Degree of Saturation (%)				
		2018	2021	2021	2031	2031
		BASE	Future baseline	Future development	Future baseline	Future development
NORTH	Left	44	6	17	9	20
	Ahead	70	86	80	73	83
EAST	Left	30	26	26	20	16
	Right	87	89	94	96	95
SOUTH	Ahead	92	87	90	82	81
	Right	74	83	85	48	57

Figure 24: Degrees of saturation, (% of capacity "used"), Main North road / Cranford Street intersection

## **Appendix D – Urban Design Assessment**

AND

IN THE MATTER OF a Land Use  
Resource Consent Application by Foodstuffs South Island Ltd;  
RMA/2018/2029, for a new Supermarket and Fuel Station at  
71 Main North Road, Papanui

## Statement of David Hattam

### Urban Design Assessment

#### Introduction

My name is David Anthony Hattam. I am employed in the position of Senior Urban Designer at the Christchurch City Council, a position I have held since March 2017. Previously, I was employed by the Moreton Bay Regional Council in Queensland as a Senior Planner and Urban Designer, for five years. Prior to this, I worked for the Selwyn District Council as a Strategic Policy Planner, running the urban design program for that Council. I have worked in the field of urban design for 11 years. I hold the qualification of Master of Urban and Regional Planning from Heriot Watt University, Edinburgh and I am a full member of the Royal Town Planning Institute.

I have been asked to provide urban design comments on the above application, on behalf of the Council. I have been involved with the consent process since the application was lodged in August 2018. During this time, I attended a meeting with the Applicant and provided design advice in relation to the matters noted below, after which some minor amendments were made to the application. The proposal was reviewed by the Christchurch Urban Design Panel on 14 August 2019. Where applicable I have noted the recommendations of the Panel in my advice.

I further spoke to the Applicant's urban design consultant, Andrew Burns prior to filing this evidence and attended a pre-hearing conferencing meeting with Mr Burns and landscape architect Tony Milne. This memo was drafted prior to the agreement of minutes to that meeting.

#### The Proposal

1. The proposal is for a supermarket with a floor area of 6888m<sup>2</sup>, located in an Industrial General zone of the Christchurch District Plan, on a 1.56ha site. There would be associated car parking, including 5436m<sup>2</sup> of basement car parking and customer car parking located in front of the supermarket. The supermarket building would be set back by approximately 70m behind seven rows of car parking and access.
2. In addition to the supermarket, a self-serve petrol station is proposed, to be located at the front of the site. The site plan includes pedestrian connections and landscaping, as well as vehicle connections to the street and neighbouring sites.

## Context

3. The site is located in an industrial zone some 450m from the Papanui Key Activity Centre, a sub-regional centre within the commercial centres hierarchy of the Christchurch District Plan. The site adjoins an existing local commercial centre on the corner of Main North and Northcote Roads, whilst to the south is the Foodstuffs head office building, set back behind an open, landscaped area.
4. The site is located in an area with poor pedestrian connections. This is due to the presence of main roads to the north and east, which restricts crossing opportunities, and to the size of walkable blocks in the street grid which reduce permeability and increase walking distances. These factors lead to a small walking catchment with few residential properties.
5. The main vehicle and pedestrian access to the site is via Main North Road, a minor arterial road. There is indirect access to Northcote Road, a major arterial route.
6. The area has a mixed character due to the variety of uses in the area and the types of street environment.
7. Due to its width and the volumes of traffic it carries, Main North Road is a vehicle dominated environment. However, this is in part counter-acted by a planted median that helps to break up the scale of asphalt, and the quality of frontage from the majority of sites. This includes residences as well as the subject site and Foodstuffs head office. Frontages are generally landscaped, there is a mixture of high and low fencing and buildings are a prominent component of the street scene. The visual quality of buildings and landscaping creates a sense of visual coherence.
8. The wider area also features schools, residences and commercial sites, which similarly contribute to an environment that has some visual quality and interest, with the exception to this being Northcote Road, where tall fencing is prevalent and results in a lower quality environment.
9. To the north is a small local centre which contains a vehicle service facility and some premises on the corner street frontage. These have windows facing the main intersection, but have operated in an internalised fashion, with rear access from a car park. Footpath widths are narrow for a commercial area and building is adjacent to a slip lane with little separation from traffic. This building provides some visual interest and potentially some engagement, but the street environment does not encourage people to linger in the area.
10. The site immediately to the west is currently owned by the Catholic Church and has industrial zoning. If the proposal is granted it will become an isolated site surrounded by residential and commercial and a school. I consider that its long term future is unlikely to be industrial and the future integration of this site into the urban fabric is relevant part of the resolution of this application.

## Summary

11. The proposal is in effect a significant expansion of a small existing commercial centre into Industrial General zoned land. The resulting development would be akin to a neighbourhood centre and as such I have consider the commercial core provisions of the District Plan more applicable than the Industrial Zone provisions. I have also considered the policy framework of the plan, in particular policy 15.2.4.2 (Design of new development).
12. In summary, I am of the opinion that the proposal would not function as anticipated for a commercial centre and I consider that layout of the site and its component design attributes result in adverse visual and physical effects.
13. The urban design matters of issue in regard to the application are summarised below:
  - a. The proposal is not conveniently accessible on foot, due to:
    - the quality of access through the site to the street and its neighbour
    - the small walk-up catchment.
  - b. Adverse visual effects arising from:
    - the prominence and design of the self-serve petrol station
    - the location of car parking and
    - the prominence of the yellow central parapet of the supermarket building.
  - c. Lack of visual engagement between the activity and the supermarket with the street due to the distance of the buildings from the street.
  - d. Safety concerns relating to the rear of the supermarket.
14. Given the number of and nature of these issues, I consider that the proposal will not contribute to an environment that is visually attractive, safe or conveniently accessible, as would be anticipated of a commercial environment.
15. It would be possible to amend the proposal to reduce the scale of the effects and I have discussed this in the conclusion to this report. These matters have been discussed in the conferencing that has taken place but detailed proposals have not been provided at the time of writing.

## District Plan Provisions

16. The proposal is a discretionary activity under 16.4.1.4 D1 because it is for commercial activities located in an industrial zone.
17. In undertaking my urban design assessment, I have considered the urban design assessment matters applicable to the commercial core zone as a guide (15.13.1). This is because the proposal would effectively function in an equivalent manner to a typical commercial centre, in terms of size and the variety of activities in site and surrounds, and the number of people drawn

to the site. I have also considered Policy 15.2.4.2 – Design of New Development. Given the out of zone nature of the activity, and the way it will function, I have not undertaken an in depth assessment against the provisions of the Industrial General Zone.

18. Although an industrial-type building is anticipated in the zoning for this site, it is unlikely to result in the same numbers of people visiting the site as the activity proposed, with the attendant effects relating to pedestrian movement and safety. A new supermarket, as part of a cluster of commercial activities, would create a different environment from what is expected in an industrial area.

## Urban Design Assessment

19. As outlined the summary above, I consider that there are a number of urban design issues with the proposal when assessed against the district plan. In brief, these are that it is not conveniently accessible on foot, that it creates adverse visual effects, that it does not provide the opportunity for engagement between the activities and the street and that there are safety concerns at the rear of the building.
20. As a result, it is my opinion that it does not contribute to an environment that is visually attractive, safe and conveniently accessible.

### Assessment Matters

#### 15.13.1 Urban design

The extent to which the development:

- i. Recognises and reinforces the centre's role, context, and character, including any natural, heritage or cultural assets;

21. I have commented on this matter in relation to the character of the established local centre and the surrounding area, as well as the role of the site and proposal in creating a well-designed neighbourhood centre or equivalent activity. I consider that the proposal is inconsistent with the character and that it does not provide good enough connections to its surroundings to recognise the role of the centre that will be established with the activity.

### Character of the Centre and Surrounding Area

22. The established local centre provides visual interest and limited engagement with the street. It is set towards the front of its site, but the buildings have dual frontage and it has been accessed from the rear car-park in the past. A link is proposed at the rear of this centre, through its car park. This would have the benefit of integrating the sites and allowing for multi-purpose trips. However it would not encourage active engagement with the street in the established centre.
23. The existing centre could provide more successful street interaction if pedestrian traffic was encouraged to walk past its frontage, for instance from the supermarket. This would be desirable but is not part of the established character.

24. The Foodstuffs site to the south is setback by approximately 30m behind landscaping, with a limited amount of car-parking. The open landscaping is visually attractive and matching this setback would provide some consistency and visual coherence to the proposal.
25. The character of the surrounding area is created by its build form as well as its landscaping and both elements are prominent. I agree that the scale of the building would sit more comfortably in the setting if it was set back somewhat behind a landscaped frontage. In my view the ideal setback would be around 10m. This limited setback maintains a sense of enclosure along the streetscape which is of a comfortable, human scale, without making people feel visually crowded. As the scale of the setback increases beyond this point, the building becomes secondary to the intervening use, which in this case is a car park. The amount of hard-surface in the application was a concern noted by the urban design panel.
26. Given the above, the scale of building setback does not reinforce the existing character.

#### The Role of the Site in a new or Expanded Centre

27. I do not consider that the proposal would support the role of an integrated centre, which functions as a single destination with good visual and physical connections to the surrounding area. I comment on the suitability of the proposal in regard to:
  - Location of the site within the surrounding area.
  - Site layout.

#### Location of the Site

28. The site is located on an arterial road, near a major intersection. The surroundings include two schools and a limited amount of residential land.



Figure 1: The site and surrounds

29. The site is located within a block of activities that do not support a finer grain of access suitable for safe and easy pedestrian use from surrounding residential neighbourhoods. Access to the site is further inhibited by the lack of pedestrian connections and poor quality of the environment associated with the arterial roads. As such pedestrian access to the site is likely to be limited.
30. This is reflected in the pedestrian shed diagram below, based on that provided by Abley consultants with the application. This shows the area from which the supermarket can be reached in 5, 10 and 15 minutes walking (generally equivalent to 400m, 800m and 1200m respectively). I have modified this by adding on the appropriate circles to show how the proposal relates to a "perfect" scenario.
31. It can be seen that the 400m and 800m actual walking distance catchments are much smaller than the respective 400m and 800m diameter circles. There are only about 50 houses within a 5 minute actual walk of the centre. Some properties to the south within the 400m circle would be at least a 10 minute walk away. Similarly, the 10 minute actual walk encompasses a small proportion of the 800m circle, especially to the south east and south west. This indicates that the site is not very accessible on foot.



Figure 2: Ped-Shed diagram (adapted from Abley report)

32. Pedestrian connections are especially poor to the south west of the site as the existing industrial uses form a barrier to access. People wishing to walk from this area must divert around the nearby road network.
33. This also affects the future uses of the immediate area. The industrial premises to the rear is not connected to this site. As an isolated industrial use that would be surrounded by office, education and residential activities, its future may not be as an industrial site in the medium and long term. In its current form, the proposal would cement the isolation of this site. The Lydia Street access is not a suitable level of provision if this site was to be more heavily used by pedestrians (for example if it was to be a school) because of the width of the footpath and lack of observation. There is no alternative access proposed through the site.
34. The above indicates that the site is not well connected to its surroundings. Good pedestrian connections do not exist in the wider area and providing walkability to and through the site is especially important. Given the change to the intensification of use of the area, I consider that the application should include provision for both the requirements of the development and integration of future surrounding land uses that can reasonably be anticipated.

#### Site Layout

35. The location of the supermarket on the site means it is not integrated with its surroundings because it creates long walking distances between the buildings and surroundings and the routes are through car parks which are not inherently attractive walking environments. The issue is particularly evident to the south of the site.
  36. Alternative site layouts could reduce the scale of these effects on pedestrians. For instance drawing the supermarket forward to align more closely with the Foodstuffs building, would improve accessibility from both sides and from the street and bus stops. Other possible strategies would be to prioritise pedestrians within the chosen layout.
  37. The petrol station further inhibits direct and easy access because it creates an obstacle that people must be directed around. If it were in an alternative location, for instance at the side of the building, it would not be in the way of pedestrian desire lines
- ii. Promotes active engagement with, and contributes to the vibrancy and attractiveness of, any adjacent streets, lanes or public spaces;
38. Given the distance that the proposed supermarket is set back from the street and the design of the frontage, I do not consider that it would provide active engagement with the street or contribute to the vibrancy and attractiveness of Main North Road. In addition the car park and the petrol station do not contribute this engagement, vibrancy or visual interest. Overall, the proposal does not meet this matter of assessment.

## Supermarket

### Front Facade

39. The proposed supermarket includes glazing facing Main North Road for the majority of the frontage. This will provide a sense of orientation for the site and it will provide some activation because there will be views of the entrances and into the shop. However, the 70m distance between the shop and the street means that the amount of engagement will be very limited. Interior activity will not be evident and I also note that the activities at the front of the shop are the ramp to the car park (a void) and the trolley bays.
40. Vibrancy usually refers to the activities of people within public space. Again, the distance of the building from the street means that it will not contribute vibrancy to the public realm.
41. As regards "attractiveness", I agree that the building has some visual interest, including the amount of glazing and the variation in materials. However, the building is a simple shape that lacks variation in form. The most prominent element is the large yellow sign (and corporate colour scheme), which is not integrated into the building. A reduced yellow area mounted within the parapet would certainly improve the visual interest because it would re-assert the building as the primary form.

### North facade

42. Other than Main North Road, the proposal is adjacent to an accessway leading to Lydia Street. The frontage here is quite featureless, consisting of a 7.5m two-tone wall. However, this is not a public space, and I consider that this is a less serious concern than the other matters I have

identified in respect of the quality of the building, recognising that the activity cannot provide active frontage on all sides.

43. Notwithstanding the above, I consider that the Pak N Save sign incorporated into this north façade would adversely affect the residential properties opposite because it will be prominently visible in the back gardens of nos. 9 and 11.

#### South façade

44. The south façade has less visual interest than the front, and will still be visible in the street scene. This is not an area where the public will be present, but it will be visible in long views. This façade has been divided into three elements, with a glazed central section. There is further detailing of that section through divisions in the windows, which will also have reflections. I regard this as an appropriate response to this context.

#### Summary

45. Overall, in view of the above, I consider that the supermarket building lacks engagement due its location set so far back from the street and is not visually attractive because of the dominance of the yellow central element. I consider these matters could be resolved by moving the building forward on the site and by reducing the dominance of the yellow section.

#### Petrol Station

46. The proposal also includes the petrol station, which is prominently located at the front of the site, as previously discussed. It will be very visible in long views of the site because it is set in front of all surrounding buildings.
47. The design is basic and functional, with little detailing and few built elements that would add interest or coherence. There is also no use of sympathetic or visually complex materials to soften its form and the individual aspects of the structure are all “heavy” – the canopy is thick and the pillars and supports are fat. The central core will be similar to that shown below. With the petrol station in the foreground, the supermarket is a subservient element, even though its bulk is still evident.



48. A more lightweight structure, with reduced signage as shown below would have a reduced scale of effects:



49. Due to its prominence and its functional design, the petrol station would detract from the proposed supermarket building and surroundings. Because it is such a prominent element of the overall design, I consider that it would mean the proposal does not contribute to an attractive street overall. The prominence of the petrol station was a concern noted by the urban design panel.
- iii. Takes account of nearby buildings in respect of the exterior design, architectural form, scale and detailing of the building;
50. The issues I have identified in respect of adjoining buildings relate to the site layout rather than the scale and form of the building. As described above, I consider the supermarket building is appropriate, subject to some design refinement, and this includes the way that it relates to surrounding buildings.
51. The petrol station would detract from the appearance of the site and surrounding area. I consider that it would not be in accordance with this matter due to the prominence of its location and the design issues described above.
- iv. Provides a human scale and minimises building bulk while having regard to the functional requirements of the activity;
52. The proposal is a single large building which includes some treatment of the front façade. However the horizontal emphasis of the features means that the long elevation is not broken down. As a result, the bulk of the building is not sufficiently addressed. This does not affect the functional requirements of the activity.
53. The blank central form of the signage parapet is also particularly dominant and emphasises the bulk of the building.
54. From close up, the front façade includes some detail in the glazing and the steps in the frontage will be more visible. I consider that the lack of human scale is affects the view from the street and surrounds rather than close up.
55. The petrol station is a large structure comprising canopy, supports, pumps and signage. There is no associated retail. The activities are able to be seen and as such there are elements of human scale about it, but the bulk of the canopy and the bulky supports are the dominant features and these do not have a human scale. Again this is a functional design but appears to be more bulky than other similar structures.

56. I do not consider this matter is currently met, but could be addressed through some further resolution of the buildings' design.
- v. Is designed to incorporate Crime Prevention Through Environmental Design (CPTED) principles, including encouraging surveillance, effective lighting, management of public areas and boundary demarcation;
57. I consider that the proposal would meet CPTED principles at the front of the site, but that the rear creates a potentially unsafe environment in regard to the rear of the supermarket building and this matter is not successfully resolved as a result. These matters have been discussed in detail by Jennifer Dray in her landscape comments and I concur with her assessment, that these matters can be managed with some amendments to the proposal and management of the site.
- vi. Incorporates landscaping or other means to provide for increased amenity, shade, and weather protection;
58. Detailed landscape comments are provided by Jennifer Dray in her landscape assessment.
- vii. Provides safe, legible, and efficient access for all transport users;
59. The issue of integration with surrounding sites is discussed in proposal is not well enough integrated with neighbouring sites, especially:
- The south because the walking distances are quite long and through car parks.
  - The west because of the nature of Lydia Street.
60. The proposal provides two pedestrian routes to the street. One of these is (the north) is direct, and it was agreed at expert conferencing that this would be enhanced with planting around the supermarket frontage.
61. However, the southern pathway is indirect and zig-zags around parking areas. A person approaching from the south would have to double-back on their route to use it and so it will feel very indirect, as well as being longer than desirable. It will also feel less safe and pleasant than the north pathway because it runs next to traffic exiting the site, via a multi-lane access of 3-4 lanes. As a result, users may find it an uncomfortable experience.
62. Lydia Street has a 1.2m wide footpath which is constrained by the width of corridor available. I consider this is not ideal for pedestrian comfort but is acceptable given that the use is expected to be limited. This was a concern noted by the Urban Design Panel.
63. I consider that a safe and comfortable walking environment has not been created behind the supermarket building, due to the combination of the width of the accessway (around 5m aside from parking), absence of a footpath and the possible number of cars using the space. This area is not intended for public access but access has not been restricted, at least during the day. Whilst this arrangement may be acceptable in an industrial environment where there are fewer people, it is less appropriate in a commercial one especially where children may be present in future.
64. I also note that there are a large number of vehicle accesses to the site and its neighbours, 7 in all and 6 on the main frontage (excluding Lydia Street). This includes the access to the neighbourhood centre on Main North Road, with just 21m separation to the accessway to Lydia

Street. It is positive that there is some vehicular integration between the sites, but the opportunity to enhance the public realm by reducing the number of entrances has not been taken. Doing so would increase pedestrian comfort by reducing potential delays and hazards and giving greater priority to walking in the street space.

65. Overall, I consider that the pedestrian access at the south of the site, to the street and adjacent site is unsatisfactory. Alternatives could involve placing the building closer to the street, or making the routes more direct, and less exposed to traffic. This could be accomplished by making the pedestrian access direct (by moving the petrol station) or otherwise straightening it and including ancillary landscaping.
66. The area behind the supermarket is also unsatisfactory and could be improved by providing more space for pedestrians, or more effective access control.

## Conclusion

67. In my opinion the proposal, given the type and scale of activity, is in effect a neighbourhood commercial centre. As such I have assessed it against the District Plan intentions for a commercial activity. However in terms of the location of the site, with associated street pattern and adjacent activities, the site is limited in its potential to perform as a well- connected accessible neighbourhood centre.
68. Furthermore, the site is not well integrated with adjacent sites in terms of access, or provision of coherent layout that would support a stronger neighbourhood character and cohesive built form. There are also issues with the physical connections across the site and to its surroundings for pedestrians. Given the issues with its location, on-site integration is particularly important.
69. Furthermore the layout of the site, with the supermarket set well back from the street, with petrol station in front, will not provide the appropriate level of engagement with the surroundings, or the level of visual quality and interest that would be anticipated for a neighbourhood centre.
70. CPTED and pedestrian safety and comfort concerns are also apparent at the rear of the supermarket although appear to be resolvable.
71. The proposal does not meet the matters of discretion for a supermarket of this size in a neighbourhood or district centre. Having regard to this, I am of the view that it is not an appropriate design for the activities within it.
72. I consider that an improved proposal could overcome many of the issues identified. These would involve changes to site layout, for instance:
  - Improved linkages to the street and surrounding sites (north, south and for future activities to the west)
  - Improvements relating to the rear of the supermarket to make it more suitable for pedestrians, or effectively manage access.

- Improved engagement with the street, by moving the building forwards, potentially in line with the Foodstuffs office building. Consequential amendments to site layout would be needed.
- Improvements to visual interest and coherence, by reducing the dominance of the yellow protruding form on the supermarket.
- Relocating the petrol station away from the street.

## **Appendix E – Landscape Assessment**

# MEMO

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To: Nathan Harris, Planner, Christchurch City Council

From: Jennifer Dray, Senior Landscape Architect, Technical Services & Design Team

Date: 4 November 2019

Re: RMA/2018/2029 171 MAIN NORTH ROAD PAK'N SAVE – LANDSCAPE COMMENTS

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## Introduction and Description

1. My full name is Jennifer Geraldine Dray. I hold a Bachelor of Science in Physical Geography and a Bachelor of Landscape Architecture. I am a registered member of the New Zealand Institute of Landscape Architects and have been practicing landscape architecture for 20 years.
2. I am employed as a Senior Landscape Architect with the Technical Services & Design Unit of the Christchurch City Council, and have held this position for the last 13 years. Over this time I have been involved in reviewing visual and landscape assessments and attending hearings for many resource consent applications, and in 2015 appeared before the Independent Hearings Panel while contributing to the Rural Chapter 17 of the District Plan Review.
3. I confirm that I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in section 7 of the Environment Court's Practice Note 2014, and I agree to comply with it. I confirm that the matters addressed in this brief of evidence are within my area of expertise, with the exception of where I confirm that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from my opinions expressed in this brief of evidence. I have specified where my opinion is based on limited or partial information and I have identified any assumptions I have made in forming my opinions. I have visited the site and am familiar with the area.
4. These comments are in relation to an application for land use consent to establish, operate and maintain a supermarket and associated fuel facility, ancillary offices, car parking, access, signage and landscaping at 171 Main North Road. The piping of the Lydia Street Drain (formerly a timber lined drain), and the formation of two vegetated infiltration basin systems forms part of the application.
5. The site is located on the western side of Main North Road extending from the intersection with Northcote Road. The site has access from Main North Road, Northcote Road, and Lydia Street via a Right of Way (RoW).

The site shares boundaries with residential properties further south along Main North Road, and also several properties along Northcote Road.

6. The site is located primarily within the Industrial General Zone, with the north-eastern most portion zoned Commercial Local. The south-eastern most portion providing staff access to the Head Office car park, and containing the residential dwelling, is zoned Residential Suburban. The site is also located within the Christchurch International Airport Protection Surfaces overlay, Flood Management Area, and the Liquefaction Management Area.
7. The proposal has identified non-compliances with the District Plan relating to the out of zone nature of the supermarket activity, street trees, flood management, waterway setbacks, earthworks, and noise, signage, and transport matters. Overall, the proposal is to be considered as a Discretionary Activity.
8. I have been asked particularly to provide advice on the adequacy of proposed landscaping in relation to the streetscape and the large areas of hardstand, in addition to the interface with residential properties along Northcote Road, and CPTED matters. A CCC Urban Design specialist is providing further technical comment on further CPTED matters related to the wider urban design context.
9. The documents relied upon for these comments include;
  - a. The AEE prepared by Aurecon dated 7 June 2019.
  - b. The Landscape Plans (Rev E) prepared by Rough and Milne dated 30.5.2019.
  - c. The Landscape and Urban Design Report (which includes CPTED comments) dated June 2019.
  - d. Architectural Drawings prepared by McCoy Wixon Architects dated 22.05.2019

#### Description of the Proposal

10. The current proposal includes piping of Lydia Drain, and formation of a new 1.2m wide (brushed concrete finish) path, a 2.0m high solid construction timber acoustic fence, and landscape planting where space allows along the northern boundary shared with residential properties. I note that while the RoW layout allows for a landscape strip of approximately 2.0m width (containing trees) at the Lydia Street end, and 1.5m width (containing trees) at the eastern end, there is negligible provision for a landscape strip against the properties at 21 to 15 Northcote Road.
11. The formation of a vegetated stormwater basin on the corner where Lydia Drain meets Main North road and a further vegetated stormwater basin on close to the north eastern corner of the building. This stormwater basin closest to the building entrance is to contain a hardwood timber boardwalk which is aligned with a pedestrian access point, and information boards are to be placed for public education.

12. Seven 'carpark trees' within the car park area are to be planted in 'Strata Vault Cell Tree Pits'.
13. The retention of the existing large Lime tree on the north-eastern boundary combined with a 2.3m wide landscape strip along the boundary shared with Main North Road, to contain low planting, a 1.0m high hedge and 8 x 'Frontage trees' (Upright Tulip trees) at approximately 5.0m spacings. There are to be no trees planted to the front of the fuel facility, presumably to allow for clear sightlines to the proposed 2.9m high 'Fuel Sign'. A 10.0m high Pak'nSave pylon sign is proposed to be located to the north of the vehicle entrance, with a grouping of cabbage trees at its base.
14. The 5.64m high canopy of the fuel facility is to be offset 4.7m from the road boundary. A 2.9m high fuel service shed associated with the fuel facility is to be surrounded on 3 sides by planting.
15. A 985mm wide landscape strip is proposed along the northern elevation of the building, which is to contain low native planting. Shrub and tree planting to the southern wall of the supermarket are to provide screening for a 'Stormwater Attenuation Tank'.
16. Additional ground cover planting, and lancewood and cabbage tree planting, are proposed alongside the pedestrian paths within the car park area. New landscape planting and tree planting to be added to the existing retail area and car park area on the north-eastern most corner (that is zoned commercial local), and a new lawn area to the north of the existing HQ offices on Main North Road. This area also contains some landscape planting and six further 'Frontage' trees.
17. Raised landscape beds and timber seating to be provided at the (southern-most) main entrance, and brushed concrete paving at pedestrian paths and all building entrances. 'Landscape rocks' to be placed randomly within landscape beds at car park entrances and vehicle entry points.
18. In terms of CPTED matters, the applicants had originally indicated an additional security gate at the Lydia Street entrance, and gates had also been indicated over the RoW on the north-eastern corner of the building, and at the south-western corner of the building<sup>1</sup>. Following on from expert conferencing, further plans have since been provided which outline a revised gate access option<sup>2</sup>. This plan shows an additional security fence to form an enclosed compound to be constructed approximately 10m from the rear of the supermarket building, for a length of approximately 45-50m. Two new gates are to be provided at the southern end of the compound, to provide access to both the carpark/access-way, and to the compound itself. A further gate is to be provided to the north of the compound, and a sliding gate to enclose the entire rear of building to the north, located between the north-west corner of the building and the boundary

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<sup>1</sup> The proposed gate locations are indicated on Rev F of the Landscape Masterplan dated 20/5/2019, however are not shown consistently over all submitted drawings.

<sup>2</sup> Hand marked plan entitles 'Revised Gate Access Option' and dated 30.10.19.

shared with the adjacent industrial zoned land to the west. The sliding gate is to be open during the day and closed with access at night.

19. Lighting is proposed for the car park area, however it is unclear if lighting is to be provided to the areas to the rear (west) of the building. This matter will be further discussed within these comments in addition to a recommendation in relation to lighting.
20. Indicative species list includes the following
  - a. Carpark and Street Frontage Trees;  
Alnus cordata (Alder)  
Cordyline australis (Cabbage Tree)  
Platanus orientalis 'Autumn Glory' (Plane Tree)  
Liriodendron tulipifera 'Fastigata' (Upright Tulip Tree – columnar form)
  - b. Amenity / Ornamental Planting  
A range of native shrubs, grasses and ground cover plants, and also some flowering exotic species
  - c. Rain Garden Planting  
Rushes, grasses, and mat-forming plants, as well as Pittosporum spp.
  - d. Habitat Enhancement planting  
A range of native flax and shrubs which appear to be specific to the two stormwater basins to the front of the site.
  - e. Lydia Street planting  
Carpodetus serratus (Marble Leaf Tree – NZ native)  
Plagianthus regius (Ribbonwood) – NZ native)  
Parsonsia heterophylla (NZ jasmine)
21. All trees (excluding Cordyline and Pseudopanax spp.) shall have a minimum height of 2.5 - 3.0m at the time of planting, with a minimum calliper of 35 - 40mm.

#### Assessment of proposal against Christchurch District Plan matters

22. I have been guided in the following assessment by the matters of discretion set out within 15.13.1 'Urban design' and Policy 15.2.4.2 'Design of new development' of the Christchurch District Plan as they relate to landscaping and crime Prevention through Environmental Design. I have also reviewed Objective 16.2.3 'Effects of industrial activities' and in particular Policy 16.2.3.2 'Managing effects on the environment ' to assist in preparing these comments in relation to landscape character and visual amenity.

## Landscape Matters

23. For a new development, the quantity and quality of landscape and tree planting determines the adequacy of the mitigation of the proposed large areas of hardstand, in addition to assisting with providing amenity to the streetscape and within the car park area, while supporting pedestrian legibility and storm water functions.
24. The proposed landscape treatment includes the street frontage tree planting, the car park tree planting, the vegetated storm water basins, and the other areas of planting associated with the entrances, the northern and southern elevations and the Lydia Street entrance and northern boundary. Proposed planting combines with other landscape features such as concrete areas, timber seating and cycle parking to add visual and landscape amenity to the new development.
25. The number of trees within the main car park area translates approximately into 1 tree for every pair of 5 x parking bays. An exotic tree species such as the *Platanus orientalis* 'Autumn Glory', which is a more compact form of the Plane tree will potentially grow to 8.0m in height with a 4.0m spread. This is an appropriate tree for these growth conditions and will provide screening for building bulk. In the winter months when the tree has no foliage, it will still provide some scale and a partial screening function.
26. Associated trees lining the pedestrian walk-ways and the water treatment basins all assist with the amenity within the car park area. The vegetated storm-water basins provide an opportunity for a larger area of textured planting, and the proposed information and interpretation panels will add to the public amenity.
27. The large existing Lime tree on the Main North Road boundary is to be retained, and this combined with the street frontage trees *Liriodendron tulipifera* 'Fastigata' (columnar form of the Tulip tree) will assist with streetscape amenity. The *Liriodendron* trees will reach 8.0m in height with a 3.0m spread. Again, these trees are deciduous, however I feel comfortable that even over the winter months, will still provide some scale and a partial screening function.
28. The street frontage trees are not proposed to extend for the full length of the road frontage, resulting in the fuel facility canopy being open and visible to Main North Road. The fuel facility canopy is potentially one of the most visually prominent aspects of the proposal, being of a utilitarian appearance and being setback only 4.7m from the road boundary. I recommend an additional 2 x street frontage trees be planted on the road boundary to the front of the fuel facility canopy.
29. The southern portion of the main car park area, adjoining the fuel facility area, is not as well provided for in terms of car park trees. This would be improved upon by the addition of a landscape strip and tree planting along-side the pedestrian path which is adjoining the left turning lane onto main North Road. This would have the added benefit of providing a sense of separation and safety for this section of path, and improving amenity and softening of the built environment viewed from the road. I understand that the section of

removable bollards in this area forms a part of the heavy vehicle route for the fuel trucks, a planting strip should be provided to the east of this section directly adjoining the group of 5 car park spaces. However, I find that in general the proposed planting within the car park area assists with the legibility of the pedestrian routes.

30. The front of the supermarket building (eastern elevation) has two entrances. The southern entrance is provided with two raised planters and seating, and one tree. The northern entrance has no such landscape treatment (with the exception of some decorative paving) impacting on its legibility as a public entry point.
31. There is currently little clarity as to which entrance is more important in terms of hierarchy. The northern entrance is provided with a more direct pedestrian access route, however the southern entrance is provided with a less direct pedestrian access route. This will be commented on further within the urban design and transport comments, however, a more direct route to both of the supermarket entrances would further assist with the legibility and safety of the car park area.
32. Further landscape treatment to the northern supermarket entrance, including an additional tree, would provide additional landscape amenity and assist with legibility. A further additional tree should also be added within the car park area at the southern end of the building to also provide amenity to this cycle stand and seating area. This will combine to total 3 trees to be planted immediately in front of the supermarket building, mitigating building bulk and providing landscape amenity.
33. I find that in general the proposed landscape and tree planting are of good quality and are appropriate species, and that proposed planting methodology is mostly also suitable. The large exotic tree species will provide screening and amenity, while the indigenous planting within the storm water treatment basins and alongside the pedestrian access ways will assist in offsetting the piping of the Lydia St drain and provide further biodiversity and amenity within the context of the site.
34. To ensure efficient enforcement and future monitoring, it would be useful to contain a clear tree planting methodology explicitly within the conditions of consent. (i.e. Tree size, tree pits, and tree management in terms of tree pruning and topping). I have formed some recommendations in relation to tree matters below.
35. The potential adverse effects on neighbouring residences situated on Northcote Road which share the northern boundary may include effects relating to light spill, noise, traffic movements, overlooking and privacy, and the adverse effects in visual amenity relating to the building bulk and Pak'nSave signage. These matters are discussed below in relation to submissions from affected neighbours.

## CPTED Matters

36. The proposal is mostly consistent with CPTED principles at the front of the site<sup>3</sup>, as there would be good oversight of the front car-parking area, with appropriate boundary demarcation and lighting. This portion of the site is open and well observed, however I have added some recommendations below regarding tree and hedge pruning to ensure clear sightlines.
37. The areas to the rear of the store, and the north side, being the continuation of Lydia Street, create a potentially unsafe environment with regards to the following;
  - a. The lack of oversight of the areas.
  - b. The potential for entrapment in the loading area and surrounds.
  - c. The lack of alternative points of egress or escape routes on Lydia Street, given the length of the access way.
  - d. Lighting.
38. The loading zone to the rear of the building is a particular problem as it comprises an entrapment zone, is likely to have limited observation, and potentially contains areas for concealment. There is currently no access control into this environment, and it is un-clear what is proposed in terms of lighting of this area.
39. Lydia Street. Lydia Street is a movement predictor where potential victims will be walking in low numbers, potentially unobserved. The width of Lydia Street would reduce the risk somewhat and it is beneficial that the footpath is on the opposite side of the road to the loading zone. However, the combination of a movement predictor with an entrapment/concealment space is dangerous as it provides opportunities for serious crime.
40. The applicant has discussed gating the access at night at the Lydia Street entrance, however this is unlikely to be an appropriate solution. The entrapment spaces would remain to the rear of the supermarket, and the access-way leading to Lydia Street would also potentially become an entrapment area. The proposed access control would not manage the risk appropriately. Lydia Street should remain open for its whole length for public access during both daytime and nighttime hours, and lit at night. This balances the need for integration with the wider area with the need to create a safe environment to the rear of the supermarket building.
41. Rear of supermarket building. Following on from expert conferencing, further plans have since been provided which outline a revised gate access option<sup>4</sup>. The current proposal still comprises an unsafe

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<sup>3</sup> These comments in relation to CPTED matters have been prepared with the assistance of CCC Senior Urban Designer, who will also make further comment on CPTED matters.

<sup>4</sup> Hand marked plan entitles 'Revised Gate Access Option' and dated 30.10.19.

environment for both pedestrian and vehicle users<sup>5</sup>, and staff. We believe that there is still little clarity around the operational requirements for this area, and require further information to make a full CPTED assessment. As the Lydia Street access is likely to be utilised by members of the public, with public access to be provided to the rear of the supermarket building, it is important that a safe environment is created for public and pedestrians. The current configuration will not provide adequate space for the provision of car parking, vehicle circulation and safe pedestrian access. This requirement for safe pedestrian access would apply regardless of the adjacent property remaining as an industrial zoned activity, or equally if the future use were to be changed to a school or a similar a non-industrial activity.

42. During expert conferencing, access management at night was agreed to, but we consider that this is not an overall solution<sup>6</sup>. While we believe that the current proposed configuration is not appropriate in terms of CPTED and traffic safety, there are aspects of the design which could be modified to create a safer environment. These include;
  - a. Controlling access to ensure that there is no public access either during daytime or nighttime hours or;
  - b. A combination of measures which include lighting, access management and an improved pedestrian environment by provision of a pedestrian path or a marked pedestrian access way;
43. An improved pedestrian environment could be allowed for with the provision of a pedestrian path or a marked pedestrian access way. Additional space for the provision of vehicle circulation and safe pedestrian access could be provided by either the removal of some or all of the car park spaces, the removal or re-configuring of the enclosed compound, or revising the location of the supermarket building.
44. The ramp to the underground car park should also be locked during the after-hours.

#### Submissions

45. Submissions in relation to landscape and amenity matters included concerns about lighting, general security (submitter seeking gates at entrances for after-hours) pedestrian linkages within the site, interface with the Northcote Road residential properties (submitter seeking a 'buffer' between properties), and concerns about vehicle noise, light pollution from building and outdoor lighting, and privacy from upper floor windows facing residential units to the north (submitter seeking planting of a 3m wide greenbelt at boundary).
46. There were also submissions in support of the storm water treatment proposed including the use of native vegetation and information boards.

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<sup>5</sup> Further comment in terms of traffic safety to be provided by Council transport specialist.

<sup>6</sup> Comments in relation to CPTED matters to rear of building are also provided by Council Urban Design specialist David Hattam within his own report.

47. Lighting of the car park and loading areas is a matter that is covered in the CPTED comments (light spill will be covered by lighting technical advice), as is security in terms of gate locations. A safe and legible pedestrian network within the site is also a valid CPTED concern, and will be covered by transport expert advice.
48. In terms of the interface with the residential properties to the north, the potential adverse effects include light, noise, privacy and effects on visual amenity. Currently the proposal is for a new 1.2m wide path, a 2.0m high solid construction timber acoustic fence, and landscape planting where space allows. I note that there is negligible provision for a landscape strip against the properties at 21 to 15 Northcote Road. The submissions in opposition in relation to this matter are from the owners of 15 and 21b Northcote Road. These residences are both located in close proximity to their rear boundary (shared with the application site) and currently enjoy trees on the application site side of the boundary.
49. The northern elevation of the building is between 12.0m to 12.6m at the apex, and setback 11.68m from this boundary. The northern elevation is to contain no upper storey windows (with the exception of glazing at the entrance), so overlooking and privacy is unlikely to be an issue. The colour-steel roof (coloured 'Sandstone Grey') and the concrete cladding of the northern elevation are likely to be visible above the 2.m high acoustic boundary fence.
50. A 9.0 x 2.0m Pak'nSave sign sitting at a height of 4.0m above ground level is also proposed for this elevation. This sign will be visible above the fence line for residents of 9, 11 and 15 Northcote Road, at a 10.0m offset from the boundary. A narrow landscape strip is provided against this portion of the boundary, with trees to be planted against the rear fence of 9 and 11 Northcote Road. Climbing plants are also to be provided to the northern boundary fence where the landscape beds terminate.
51. While further visual amenity could be provided by the provision of a section of trellis atop of the fence to allow climbing plants to extend to an additional height, I consider that a condition around the proposed tree planting would be adequate to assist with mitigation of the sign, and I have made a recommendation regarding this matter.

#### Recommendations

52. An additional 2 x street frontage trees be planted on the road boundary to the front of the fuel facility canopy.
53. Additional trees to be provided at the northern entrance (1 x tree) to the supermarket, and to the car park area at the southern end of the building (1 x tree) adjacent to the cycle stand and seating area. This will combine to total 3 x trees to be planted immediately in front of the supermarket building.

54. An additional 1.5m wide landscape strip and 2 x street frontage tree planting to be provided along-side the pedestrian path which is adjoining the left turning lane onto main North Road, to be located to the east of the bollarded heavy vehicle route, directly adjoining the group of 5 car park spaces.
55. Further recommendations in relation to tree planting as follows;
- a. All trees (excluding Cordyline and Pseudopanax spp.) shall have a minimum height of 2.5 - 3.0m at the time of planting, with a minimum calliper of 35 - 40mm.
  - b. All trees to be planted within the car park area to be planted in Stratavault tree pits (or equivalent style of structural cell tree planting system). All other trees to be planted in tree pits that are three times the width of the root ball of the tree, with a minimum depth of 1.5 times the depth of the root ball. These tree pits are to be back filled with an 80% unscreened topsoil and 20% soil conditioner mix.
  - c. All car park trees and other trees to be planted as visual mitigation shall not be topped, and shall be allowed to mature to their full natural height.
56. Further recommendations in relation to CPTED matters as follows;
- a. Access to the rear of the supermarket building to be managed by the installation of gates at the north western and south-western corners of the building. Public access to the rear of the supermarket should be managed.
  - b. In addition the Lydia Street entrance should be open for its whole length, and lit at night.
  - c. The ramp to the underground car park to be locked during the after-hours.
  - d. To ensure clear visibility and sight-lines, the proposed hedge to be planted on the Main North Road boundary to be restricted to a maximum 1.0m high. Car park trees to be pruned to lift the tree canopy (lower-most limbs) to a minimum 2.5m from the ground. Trees with a columnar growth form will not require this type of pruning. All planting should also be managed to comply with rules relating to visibility splays at vehicle entrances.
  - e. The lighting of the car park area be extended to include lighting to Lydia Street and to the rear of the building.
57. Further recommendations in relation to northern boundary shared with residential properties as follows;
- a. Tree planting to this area to be spaced a minimum of 3.0m apart and capable of reaching 6.0m height at maturity.

Conclusion

58. Overall, subject to the above conditions, I am satisfied that that proposed landscape treatment will be adequate to address any concerns in relation to the landscape and visual amenity, and pedestrian legibility and amenity.
59. With regards to CPTED matters, the area to the rear of the building still comprises an unsafe environment for both pedestrian and vehicle users, and staff. We believe that there is still little clarity around the operational requirements for this area, and require further information to make a full CPTED assessment. While we believe that the current proposed configuration to the rear of the building is not appropriate in terms of CPTED and traffic safety, there are aspects of the design which could be modified to create a safer environment.

Regards

Jennifer Dray

Senior Landscape Architect

TECHNICAL SERVICES AND DESIGN TEAM

## **Appendix F – Environmental Health Assessment**

# MEMO

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**To:** Nathan Harris, Planner, Resource Consents Team  
**From:** Isobel Stout, Senior Environmental Health Officer, Environmental Health Team  
**Date:** 13 September 2019

**Re: RMA/2018/2029 at 171 MAIN NORTH RD – ENVIRONMENTAL HEALTH REPORT**

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## Scope

1. This application relates to the proposal to construct and operate a supermarket with a self service fuel station.
2. I understand that the proposal is a discretionary activity under the relevant plans and therefore the purpose of this memo is to comment on the potential environmental health effects for the purposes of a decision.

## Noise

3. Noise is expected to be generated predominantly from two sources: vehicles (both heavy and light engaged in restocking the bulk fuel tanks and the supermarket and customers shopping) and plant and equipment such as refrigeration.
4. Noise emitted by the proposed emergency generators when these are used only in times of mains power loss or for testing and maintenance purposes are exempt the District Plan noise rules. However the generators are planned to be made available for day to day use in 'load shedding'; that is, used to reduce mains power use at time of high demand and price, and so will need to comply with the noise standards.
5. The application is accompanied by a comprehensive acoustic assessment that has been refined during processing of the consent in response to requests for further information.
6. As is typical for all acoustic assessments of a future activity, the modelling is based on a worst case scenario. Although the exact parameters of the generators are still to be finalised, as these are installed indoors acoustic insulation is expected to be able to be installed in order that the noise meets the standards at site boundaries.
7. In terms of outdoor noise sources, the site area and surrounds are subject to high levels of traffic noise but I don't accept this entirely as a reason that predicted noise in excess of Plan standards should automatically be acceptable.
8. Leaving aside the generators, in brief, the peak hour (1700-1800 hours) daytime operational noise (from vehicles on site) is expected to exceed the District Plan noise standards at neighbouring residential properties along the Lydia Street ROW and at residential properties opposite the carpark across Main North Rd. The size of the exceedance ranges from 1 dBLAeq to 6 dBLAeq over the 50dBLAeq standard.
9. As the supermarket is to be open to 11pm the hour between 10pm and 11pm falls within the night time period for the noise standards. For the night time period, the expected worst case exceedance is up to 10dBLAeq over the 40dBLAeq District Plan standard and this results from

deliveries. It is this factor that makes the noise aspects of the application a restricted discretionary activity.

10. The location of these non compliances is limited to the dwellings on the opposite side of Main North Rd to the proposed supermarket and the dwellings along Northcote Rd that back onto the Lydia Street ROW. Both Northcote and Main North Roads carry tens of thousands of vehicles per day, many of which are heavy vehicles.
11. The four submitters who have raised concerns about noise from the operation of the proposed supermarket look to be residents on these two roads. As I mentioned earlier in my report even though the current levels of noise in the area may exceed those predicted for the supermarket by quite some margin I am still expecting the activity to undertake measures to minimise the noise they produce. This is typically best controlled using a noise management plan and a consent condition should require this.
12. These measures include the fact that the loading dock is enclosed and provided doors are kept closed there should be little noise produced outdoors from unloading activities. Electric forklifts are preferred for use indoors as they are quieter and do not produce emissions. All mechanical plant such as refrigeration and air conditioning can be designed and maintained in order to be fully compliant with environmental noise standards. Speed limits should be imposed throughout the site.
13. I also note that the predictions are a worst case scenario for the expected peak hour between 6 and 7pm and that outside this time operational noise will be consistently less. So overall I expect the noise to be at an acceptable level at times when environmental conditions actually allow for it to be noticed.
14. Traffic also generates air pollution and fumes as noted by one submitter. The air quality of Christchurch is affected by traffic and measured by Environment Canterbury. The situation of the proposed supermarket on major bus routes and the increasing numbers of electric vehicles may assist in reducing fumes.
15. The District Plan requires new sensitive activities, like houses, on busy roads to be built with additional acoustic insulation. At this stage I am not aware of any statutory measures that would help retrofit acoustic insulation to existing residential properties.

### **Light spill and lighting effects**

16. The application is accompanied by a lighting plan that shows how the choice and placement of luminaires can achieve compliance with the District Plan rules for light spill on neighbouring properties. For the submitter whose support mentioned the use of LED lighting I note that plans are drawn using LED luminaires.
17. The overall level of light over the carparking area and its direction into the carparking space using modern LED luminaires nearly eliminates there being any light spill offsite. The wider area as a whole is already well lit as a function of the major traffic routes. I find the careful design of the site lighting to comply with the District Plan standards.

### **National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)**

18. The application includes a Preliminary Site Investigation (PSI) from a Suitably Qualified and Experienced Practitioner conducted in accordance with the Ministry for the Environment's Guidelines on contaminated land.

19. The PSI has found that several HAIL activities have taken place on the property which is the trigger for further investigation of the new building site including the analysis of soil samples. As the site is currently built over and/or in use access for a Detailed Site Investigation is somewhat difficult and so the NESCS aspect of the application is a discretionary activity under Reg 11. Should consent be granted the DSI will have to be conducted as a condition of that consent.
20. The results of the DSI would be shared with Environment Canterbury and I agree with Ecan's submission that any Remedial Action Plan or Site Management Plan include measures for the control of any discovery of unanticipated contamination.

## Conclusion

1. I consider the lighting and contaminated land matters fully compliant or able to be compliant and so no particular adverse effect would be expected.
2. With respect to the noise from the activity as a whole, especially over the night time period I consider the adverse effect of the noise upon potential sensitive activities would be acceptable. In order to ensure the ongoing acceptability conditions of consent regarding the hours of operation, management of the loading dock and timing of deliveries will be required in a noise management plan.

## Recommended conditions

### Noise

1. At least 20 working days prior to opening of the premises to the public, the consent holder shall erect a 2m high acoustic fence along the site boundary with all residentially zoned properties to the north. The acoustic fencing shall have a minimum surface mass of at least 8.0kg/m<sup>2</sup>. This fencing shall be continuous and maintained without gaps. This will require timber palings to be well-overlapped (25mm minimum) or a "board and batten" system, and a sleeper rail connecting the base of the palings to the ground.

*Advice note: Materials meeting the surface mass specification include 20mm thick timber overlapped or in a board and batten configuration, or a range of proprietary building materials such as Hardiflex, Titan Board, concrete block, or Hebel block.*

### 2. Noise & Operational Management Plan

- The operation of the proposed activity shall be undertaken in accordance with a Noise Management Plan (NMP). The purpose of the NMP is to ensure that the noise associated with the operation of both the pool and function-related activities does not exceed a reasonable level when measured at any residential site. The NMP shall be prepared by a suitably qualified and experienced acoustic engineer. A copy of the approved NMP shall be kept on the premises at all times.
- In addition to the noise management measures identified in Conditions + above, the NMP shall address, but not be limited to, the following matters:
  - a) Hours of operation for all event types and activities;
  - b) Applicable noise limits and assessment criteria;
  - c) Physical noise mitigation and acoustic mitigation;

- d) Window/door closing policy to control noise;
  - e) Education and staff training to control noise, including in the car parking area;
  - f) Education and training of non-staff to control noise, including in the car parking area;
  - g) Noise monitoring and reporting requirements;
  - h) Noise complaint procedures including:
    - i. the methods for recording any noise complaints and the key details (date and time of complaint, type of activity, type of noise and location of complaint);
    - ii. Process for investigating noise compliances and recording the action taken to avoid, mitigate or remedy the noise to prevent reoccurrence; and
    - iii. Reporting requirements to Council;
  - i) Non-compliance contingency measures;
  - j) Methods to review the certified NMP; and
  - k) Any measures to mitigate noise associated with use of new equipment installed on site.
- The NMP shall be provided to Council, Attention: Team Leader Compliance and Investigations for certification via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) at least 20 working days prior to the operation of the facility. This NMP is to be certified by the Team Leader (or their nominee) as meeting the requirements of Condition + prior to the commencement of any construction work and, once certified, the NMP will thereafter form part of the Approved Consent Document.

**NOTE:** *The Team Leader will either certify, or refuse to certify, the NMP within 10 working days of receipt. Should the Team Leader refuse to certify the NMP, then they shall provide a letter outlining why certification is refused based on the parameters contained in this condition.*

- Should the Team Leader refuse to certify the NMP, the Consent Holder shall submit a revised NMP to the Team Leader for certification. The certification process shall follow the same procedure and requirements as outlined in Conditions +.
- The NMP may be amended at any time by the Consent Holder. Any amendments to the NMP shall be submitted by the consent holder to the Team Leader for certification. Any amendments to the NMP shall be:
  - a) for the purposes of improving the measures outlined in the NMP for achieving the NMP purpose (see condition +);
  - b) consistent with the conditions of this resource consent; and
  - c) prepared by an appropriately qualified and experienced acoustic engineer.

If the amended NMP is certified, then it becomes the certified NMP for the purposes of Condition + and will thereafter form part of the Approved Consent Document.

## **Contaminated Land**

### **3. Detailed Site Investigation (DSI)**

Identified areas with past/present HAIL activities as reported in Pattle Delamore Partners Preliminary Site Investigation (July 2018) shall be investigated by a suitably qualified and experienced practitioner in accordance with the National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS) and Ministry for the Environment Guidelines prior to the redevelopment works. All soil sampling and investigation

reports are to be provided to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) and to Environment Canterbury (at [Contaminated.Land@ecan.govt.nz](mailto:Contaminated.Land@ecan.govt.nz)).

4. Site Management Plan (SMP) / Remedial Action Plan (RAP)

Based on the findings of the soil sampling investigations identified above, and if deemed required by a suitably qualified and experienced practitioner, a SMP and/or RAP shall be prepared to provide controls and protocols for the soil disturbance works during development of the site to ensure all excavation and soil removal works are carried out to protect human health. A copy of the SMP and/or RAP is to be provided to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) prior to the commencement of any site excavation works.

5. The SMP and/or RAP shall include an Accidental Discovery Protocol in the event of discovery of contaminated material beyond that identified in the Detailed Site Investigation.

6. Any changes to the SMP and/or RAP shall be submitted to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) for approval prior to the changes taking effect. The Council's Senior Environmental Health Officer shall approve or require changes to the proposed amendments within 2 working days of the SMP/RAP being submitted.

7. Soil Disposal

All soil removed from the site must be transported and disposed to a consented landfill/cleanfill suitable to receive such material. Evidence of any soil disposal shall be by way of a soil waste transfer manifest. The soil manifests are to be provided to Council no later than 3 months upon completion of the excavation and soil removal works. These soil manifests may be emailed to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)

Isobel Stout  
**Senior Environmental Health Officer**  
**ENVIRONMENTAL HEALTH TEAM**

## **Appendix G – Flood Management Assessment**

## MEMORANDUM

3 September 2019

**From:** Sheryl Keenan (Surface Water Planning Engineer, Christchurch City Council)  
**To:** Nathan Harris (Planner, Resource Consents Unit, Christchurch City Council)

**Re: Proposed new supermarket and associated facilities at 171 Main North Road (RMA/2018/2029)**

1. I provide the following assessment of the documents submitted as part of the Land Use Consent application for the placement of a new supermarket and associated facilities at 171 Main North Road. My comments address the flooding effects related to the development in the Flood Management Area (FMA), with the exception of the waterway setback works addressed separately by Victor Mthamo.
2. The proposed works include the placement of the supermarket building above the FMA Finished Floor Level (FFL) requirement, with a basement level set below this. Earthworks are also proposed across the FMA portion of the site, including ground level changes to facilitate carparking and site servicing.
3. The FMA FFL for this site has been set at 19.49m, based on an assessed 1 in 200 year flood level of 19.09m and an allowance of 400mm for freeboard.
4. While the main supermarket building meets/exceeds the FMA FFL (designed to 19.50m), the basement is proposed to have a FFL of 16.20m, significantly below the FMA FFL.
5. The applicant has taken measures both to reduce the likelihood of inundation of this basement area and to reduce the consequences of such inundation if it were to occur.
6. The design of the ramp into the basement incorporates a high point at 19.50m, combined with walls either side of this to 19.60m. This ensures that it is theoretically no more likely that surface flooding enters this space than a solution meeting the FMA FFL. Also if any flooding was to enter this space, as the assessed flood level for the site is 19.09m, this would most likely be a discrete volume due to wave action, not the full inundation of this basement area.
7. Some inundation of this area is always going to be a risk, whether this originates from surface flooding external to the building or other mechanisms (groundwater, water supply leak etc). The applicant has provided quite a limited assessment of the potential extent of damage in an inundation event, but has noted that the structure itself is to be constructed from solid concrete. It is also probably reasonable to assume that a public carpark area of this nature would generally be constructed and fitted out with quite durable materials.

8. The applicant has presented a rough order estimate of flood displacement from the works assuming an average ground level across the site and the full displacement of floodwater from the area of land covered by the works. This produces a relatively large figure of flood displacement however appears to both significantly overstate the potential flood displacement and not provide any consideration of existing environment and/or permitted baseline.
9. Council has a number of flood models that include some representation of this site and show flooding within 165 Main North Road (near the western and southern boundaries of the site) and across the southeastern portion of the application site, from the southern boundary to the eastern boundary.
10. When the details of the modelling setup are considered, it is noted that these do not consider the displacement effects of the existing buildings (i.e. overland flow paths are shown passing through the existing structures) and that the models appear to underestimate the inflow to the pipework in the area (via direct network connections), resulting in significant flooding shown on the land surface prior to surcharging of the stormwater network. For these reasons, it is considered that the Council models are likely to be overstating the flood risk in this area.
11. When working with the assessed 'major flood event' water level of 19.09m, my own rough order estimate of any flood displacement from these works is significantly lower than the applicants for the areas of site that are currently below this level and not covered by existing buildings. This is also partially mitigated through the formation of much of the carpark area (currently with significant building coverage) generally below flood levels, allowing some compensatory flood storage volume if a flood event to this level was to occur.
12. Without working through a full permitted baseline argument for this, I would expect that the remaining flood displacement potentially resulting from this proposal would be significantly less than anticipated by the Plan in this Industrial General zone and not likely to result in any unacceptable effects to other property.
13. I understand that the only submission in regard to the Flood Management Area is that from S Steel of 21B Northcote Road. The wording of this comment (identified in relation to both 5.4.1.5 RD2 and 8.9.2.3 RDI under the general earthworks rules) is:  
*"There is a massive amount of earth to be removed from the site for the excavation of the car park and petroleum storage systems. Already when a truck which visits the site most mornings and drives over the speed bump at speed (doesn't slow down) my house shakes/vibrates. With numerous trucks probably travelling backwards and forwards behind my house to exit to Lydia Street, I am very concerned at what the continual shakes will do to my house which has already been affected by the earthquakes. I believe my concrete foundation already has cracks which could get worse with all the earth being removed from site."*
14. While these earthworks are considered under both Chapter 5 and Chapter 8 of the District Plan, the matters raised of concern by the applicant are matters addressed only under Chapter 8. For this reason, I have no comment in response to this submission.

## **Appendix H – Stormwater Assessment**

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TO: Nathan Harris (Planner)  
Sheryl Keenan (Planning Engineer – Stormwater)

From: Victor Mthamo (Consultant Engineer – Planning - Stormwater)

Date: 9 October 2019

Re: RMA/2018/2029 – 171 Main North Road, Papanui

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### 1. Purpose of this Memo.

This memo has been prepared in response to your request for a “memo or report setting out your assessment. In particular, assessment matter 6.6.7.1 (of the district plan) is relevant and assessment regarding the stormwater matters, the pipe sizing and possible impact on upstream flooding”

The comments below provide an assessment of the activity against Section 6.6.7.1.

### 2. Section 6.6.7.1(a) Assessment

I have not specifically assessed the proposal against Section 6.6.7.1. However, my colleague Sheryl Keenan assessed some aspects of the natural hazards and flood modelling in the area and effects arising from the project. Ms Keenan’s comments are summarised below:

- There is not considered to be any significant risk of 'flooding' along the waterway corridor (the upstream catchment is quite limited, flows would be expected to remain in channel unless a blockage or similar event was to occur and this doesn't form part of the wider floodplain the downstream end (in 7 Northcote Road)).
- The only recorded complaint to Council regarding the waterway (based on review of flooding complaint records since 2001) was related to the stability of the banks of the waterway, not the capacity of this.

Therefore, based on Ms Keenan’s assessment the proposal will likely have no more than minor effects on flooding.

### 3. Stormwater Drainage

I carried out an assessment of the stormwater discharge from the site and assessed whether or not the proposed pipe would have sufficient capacity to convey the existing and post development flows.

Below is a discussion of the two issues that I raised and how they were responded to as part of the RFI processes.

#### 3.1. Capacity of the Pipe

In the original application the applicant was proposing to replace a 225 m section of Lydia Drain with a DN750 pipe. The application stated that the new pipe would have a capacity of 633 L/s. However, the application did not discuss how the 633 L/s compared with the existing flows in Lydia Drain. My concern was that the 633 L/s could be less than the average and peak flows in the drain or rather that the DN750 would have a lower capacity than the drain and so would not be able to convey the flows currently being carried by the drain.

I sent an RFI asking how seeking clarification and the applicant provided the following response:

The potential drain flow based on the Lined Drain Flow Nomograph from the CCC Waterways Wetlands and Drainage Guide based on a boxed drain slop of 1:330 equates to a potential flow of 540 L/s when the drain is flowing at a depth of 1.5 m. This is lower than the calculated pipe flow provided for by the new 750mm diameter pipe (providing 633 L/s). On this basis the proposal to pipe the Lydia Street Drain will not reduce capacity.

I did a quick check of the box drain flows as per the applicant's response and arrived at flows of 520-560 L/s which was less than the calculated capacity of the proposed DN750 pipe.

### 3.2. Subsurface Drainage

Lydia Drain's primary purpose is to convey drainage water from the upstream catchments. The drain has a secondary function which is to act as a subsurface drainage channel. The high groundwater from 171 Main South Road and neighbouring properties flows towards the drain due to the hydraulic grade created by the flows through the drain. The flow of groundwater towards the drain also provided baseflow in the drain.

My concern with the proposal was that replacing the part of the drain with a pipe would result in the loss of the secondary function which would result in higher groundwater levels in the immediate vicinity of the proposal. I, therefore, requested the applicant to provide drainage calculations supported by the necessary assumptions and on-site investigations to confirm that the high groundwater would still be able to be drained from under 171 Main North Road and the neighbouring properties.

In response to my RFI, the applicant provided the following comments:

For the Lydia Drain reach extending from the Main North Road to 225m upstream, a perforated pipe was considered as an option for allowing groundwater infusion and mitigate the loss of any baseflow loss from conventional piping. However, the on-site ecological assessment identified actual and potential contamination of the soils and groundwater from sources beyond Foodstuffs boundary or control within this reach. From an ecological perspective it is considered more favourable that Lydia Street Drain (which feeds into Kruse's drain) be isolated from these groundwater contaminants than the slight loss of baseflow caused by piping this short reach. Due to the groundwater contamination, the option of a perforated pipe is not recommended. The loss of baseflow caused by piping is considered minimal given the assessed baseflow gain over the entire 305 m reach was only c. 0.25 L/s, with baseflow loss from piping a sub-section less than 0.25 L/s. In addition from an ecological perspective the baseflow impact further downstream is further ameliorated by natural surface water gain and habitat remediation.

The response provided addressed my concerns.

### 4. Stormwater Treatment and Attenuation

As part of the preapplication process, I had requested that stormwater attenuation and treatment be provided.

The application included details of the above requirements as follows:

- 225m<sup>3</sup> of attenuation was provided via tanks to ensure stormwater neutrality between the predevelopment and post development flows and volumes.
- Full first flush treatment from all trafficable hardstanding to remove contaminants.

### 5. Summary

Based on the assessments carried out and responses to various RFI, it is my opinion that the effects we were concerned with would be able to be mitigated or avoided.



Victor Mthamo  
Consultant – Stormwater Approvals  
Three Waters Planning Unit  
City Services Group

## **Appendix I – Waterways Assessment**

# Christchurch City Council

## Memorandum

Date: 14 October 2019  
To: Nathan Harris, Planner for Christchurch City Council  
From: Emily Tredinnick, Surface Water and Land Drainage Planner for Christchurch City Council  
Reviewed by: Dr Greg Burrell, Waterways Ecologist for Christchurch City Council

RMA/2018/2029 – 171 Main North Road, partial piping of Lydia Street Drain

Lydia Street Drain meets the definition of a network waterway under the Christchurch District Plan. The District Plan encourages protection, naturalisation and enhancement of waterways and the setback at the time of development. The setback is 5m either side of the waterway, the widening of the existing road and provision for additional traffic and pedestrians requires piping 225m of the 305m of open waterway through the Site (171 Main North Road).

Lydia Street Drain exists as a timber-lined box drain through the site, and its upstream extent. The waterway is then piped for 115 m, (900mm) through the Northcote Road/OEII Drive/Main North Road intersection to Kruses Drain where it exists as a naturalised waterway through St Bedes. Christchurch City undertook this work to improve habitat (Figure 1).



Figure 1. Kruses Drain, through St Bedes School.

Dr Greg Burrell (Waterways Ecologist) and I do not agree with the conclusion drawn by the applicant's ecologist (Mark Taylor, Aquatic Ecology Limited) that the piping of the waterway constitutes an overall improvement to ecological values of the wider catchment. Dr Burrell summarised in an email dated 1 July 2019 "the two key environmental benefits put forward for piping are mitigating effects of "significant point-pollution sources outside of Foodstuffs land" and improved on-site stormwater treatment. I remain unconvinced that piping will mitigate adverse effects of a significant pollution source on the receiving environment, as the pollution still has to go somewhere. Also, on-site stormwater treatment is a requirement of a site this size, and it is a separate matter from waterway piping."

Indigenous planting within the waterway setback and exotic trees elsewhere on the site will provide a certain amount of benefit to align with the objectives of the District Plan to protect and enhance the value and function of the setback and the wider environment. Included in Dr Burrell's aforementioned email (1 July 2019), he quantified the loss of habitat by multiplying the length of waterway to be piped (225m) by a 6m width, which is a typical minimum width CCC allows for waterway restoration, giving a total area of 1,350m<sup>2</sup>. The total area of proposed native planting on the site shown on the proposed landscape plan is approximately 1,400m<sup>2</sup> (excluding the planting strip alongside the section of drain that is to remain open). In Dr Burrell's opinion, this is an adequate offset for the habitat lost to piping, provided the planting in the setback consists of locally-

sourced and genuine native plants. The applicant's agent has confirmed that this recommendation will be adhered to. I have recommended a condition to this effect. My recommended conditions are:

- Plants shall be planted within the first planting season following construction in accordance with proposed landscape plans (Site Landscape Plan, Rough and Milne) and species list enclosed in the Landscape and Urban Design Report (p. 23 of Appendix E).
- Planting and existing trees that currently screen or shade the waterway shall be maintained provided they are not within the direct area in which works will occur; plants shall be replaced should they become diseased or die.
- The piping and works within the setback of Lydia Street Drain shall not commence until an Environmental and Risk Management Plan, which mitigates the potential effects of erosion and sediment release within the waterway is submitted and approved by the Christchurch City Council Subdivision Engineer, or nominee by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz).

## **Appendix J – Earthworks Assessment**

## RMA/2018/2029 171 Main North Road Land Use Consent for Earthworks

### Engineering Comments (updated 23/10/2019)

The proposal described in this application is assessed by the applicant as requiring Land use Consent for Restricted Discretionary Activities involving excavation and filling in industrial and commercial zones where the volume and depth exceeds 20m<sup>3</sup> per site, exceeds 50m<sup>3</sup> of cumulative volume of filling and excavation and 1000m<sup>3</sup> per hectare and, possibly, earthworks within 5m of a Network Waterway Setback.

1000m<sup>3</sup> of compacted filling is also required to provide a land area 0.3m above ground level to provide a freeboard above the Flood Management Area assessed 1 in 200 year flood level.

A further 585m<sup>3</sup> of excavation is also apparent in the underground carpark access ramp outside the building platform footprint (the latter now exempt from consent by Rule 8.9.3 of the District Plan as intended to be covered by a building consent).

380m<sup>3</sup> of excavation for the underground fuel tanks is also noted on the updated sketch SK1 Cut and Fill Estimate.

A detailed analysis of the District Plan Rules is provided in the application documents together with geotechnical reports on the prevailing soil conditions which indicate unconsolidated liquefiable soft silt/sand layers to 18m depth.

The submission indicates that conditions will be offered to provide for a Site Management Plan to address the potential contamination hazard from past fuel and chemical storage and the presence of asbestos from demolished buildings of the former food, beverage and cosmetic factory operations.

A Construction Management Plan will also be provided to control the potential noise disturbance and dust nuisance from construction operations and the traffic movement of plant and vehicles to and from the site via Lydia Street and the Main North Road.

An Erosion and Construction Sediment Control Plan is also to be prepared to prevent silt contamination entering the Lydia Drain which is connected downstream to the Kruses Drain Waterway and thence to the Styx River system.

A Building Consent will be required to be obtained for all the work which will necessitate the granting of a CCC Three Waters and Waste Unit Network Discharge Consent or Approval in conjunction with an ECan Regional Natural Resource Consent.

On the basis of the foregoing, I recommend the Land Use Consent for Earthworks be granted subject to the provision for prior Consent approval of the Management and Control Plans noted above, and subject also, to the requirement that no work authorised under this Consent is to be commenced until a Building Consent is issued.

A draft set of conditions is attached for inclusion in the consent which may require amendment in conjunction with what the applicant should be able to forward for consideration.

Please let me know if you require any further information.

**Bill Dray**

**Civil Engineer  
Specialist Engineering Services Team  
Consenting and Compliance Group  
DDI 941 8491  
23/10/2019**

## Recommended Conditions

1. Excavation/filling shall proceed in general accordance with the information submitted and plans lodged, and entered into Council records under land use consent number RMA/2018/2029.
2. The consent holder must notify Council and all properties that adjoin the application site at least 3 working days prior to the commencement of any works associated with this resource consent (including stockpiling of any material to be used in the work). The notification shall be provided to the Council, Attention: Monitoring Officer by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) and shall include detail of the length of time earthworks and associated works are anticipated to take.
3. No construction work, with the exception of dust and sediment control, shall be undertaken on Sundays, Public Holidays, or outside the hours of 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 6.00 pm Saturday without the Council's prior consent.
4. All proposed works shall to be carried out in accordance with an approved Construction Management Plan (CMP). The purpose of the CMP is to ensure that any potential effects arising from construction activities on the site is effectively managed. The CMP shall be prepared by a suitably qualified and experienced practitioner.
5. The CMP shall include, but not be limited to the following:
  - a) Site description, topography, vegetation, soils and other reference information;
  - b) Details of proposed works;
  - c) Roles and responsibilities, including contact details for the site manager appointed by the Consent Holder who will be responsible for ensuring that compliance with conditions of this consent are observed at all times, and contact details of a suitably qualified engineer who the earthworks and construction work will be under the control of;
  - d) Site establishment;
  - e) Timing of works including a proposed timeframe and completion date;
  - f) An Erosion and Soil Control Plan (ESCP), including (but not limited to): a map showing the location of all works; detailed plans showing the location of sediment and dust control measures, on-site catchment boundaries and sources of runoff; drawing and specifications of designated sediment and dust control measures (including dust control equipment such as water hose and sprinkler systems); installation of devices until the site is stabilised; and inspection and maintenance schedules for the sediment and dust control measures;
  - g) Construction noise management measures;
  - h) Site access and Traffic Management measures;
  - i) Storage of fuel and/or lubricants and any handling procedures;
  - j) Contingency plans (including use of spill kits);
  - k) Protocols for the discovery of archaeological material;
  - l) Construction traffic management measures, including measures to be adopted in accordance with the NZTA Code of Practice for Temporary Traffic Management;
  - m) On-site parking areas for construction staff;
  - n) Measures for identification and remediation of contaminated soil; and
  - o) Environmental compliance monitoring and reporting.
6. The consent holder shall submit this CMP to Council, Attention: Team Leader Compliance and Investigations for certification via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) at least 20 working days prior to the commencement of construction work associated with this consent. This CMP is to be certified by the Team Leader or their nominee as meeting the requirements of Condition 5 prior to the commencement of any construction work and, once certified, the CMP will thereafter form part of the Approved Consent Document.

*NOTE: The Team Leader (or their nominee) will either certify, or refuse to certify, the CMP within 10 working days of receipt. Should the Team Leader (or their nominee) refuse to certify the CMP, then they will provide a letter outlining why certification is refused based on the parameters contained in this condition.*

7. Should the Team Leader (*or their nominee*) refuse to certify the CMP, the consent holder shall submit a revised CMP to the Resource Consents Manager for certification. The certification process shall follow the same procedure and requirements as outlined in Conditions 5 and 6.
8. No construction work shall commence on site until such time as:
  - a) The approved Erosion and Sediment Control measures are in place and;
  - b) The consent holder has submitted an "Engineering Completion Certificate" (as per IDS – Part 3, Appendix VII) to the Council. This Certificate shall be signed by an appropriately qualified and experienced engineer and attest that the erosion and sediment control measures have been properly installed and in accordance with ECAN Erosion and Sediment Control Toolbox for Canterbury (<http://escscanterbury.co.nz>). This certificate shall also name the person(s) responsible for the maintenance of these measures. The consent holder shall submit this certificate to the Council, Attention: Subdivision Engineer, by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) at least five working days prior to the commencement of any construction work.
9. The CMP may be amended at any time by the Consent Holder. Any amendments to the CMP shall be submitted by the Consent Holder to the Council for certification. Any amendments to the CMP shall be:
  - a) for the purposes of improving the measures outlined in the CMP for achieving the CMP purpose (see Condition 5), and;
  - b) consistent with the conditions of this resource consent.

If the amended CMP is certified, then it becomes the certified CMP for the purposes of Condition 5 and will thereafter form part of the Approved Consent Document

10. The footpaths and roads to and from the site are to remain tidy at all times. These will need to be regularly monitored and swept or vacuumed if necessary at the end of each day.
11. All loading and unloading of trucks with excavation or fill material is to be carried out within the subject site. Any stockpiles shall be placed as far as practicable from internal boundaries adjoining residential properties.
12. All proposed works shall be carried out in accordance with an approved Traffic Management Plan (TMP). The consent holder shall prepare a TMP and submit this to Council through the TMP portal on <http://tmpforchch.co.nz/submit-a-tmp/>, at least 10 working days prior to the commencement of construction work associated with this consent. The TMP shall identify the nature and extent of temporary traffic management and how all road users will be managed by the use of temporary traffic management measures and comply with the NZTA Code of Practice for Temporary Traffic Management (CoPTTM). The TMP shall also identify the provision of on-site parking for construction staff. Activities on any public road should be planned so as to cause as little disruption, peak traffic delay or inconvenience to road users as possible without compromising safety.
13. All construction work (including any demolition and/or site preparation works) shall be designed, managed and conducted to ensure that construction noise complies with the requirements of NZS 6803:1999 Acoustics – Construction Noise for residential / rural / industrial / commercial areas (see applicable Table on Page 11 of this standard).
14. Vibration from construction work shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150 1999-02 Structural Vibration – Effects of Vibration on Structures.
15. Any change in ground levels is not to cause a ponding or drainage nuisance to neighbouring properties, or the stability of the ground or fences of neighbouring properties.

16. The fill sites shall be stripped of vegetation and any topsoil prior to filling. The content of fill shall be clean fill, in accordance with the District Plan definition.
17. All fill material shall be well compacted in layers not exceeding 200mm in depth. The fill material is to be placed, compacted and tested in accordance with the Code of Practice for Earthfill NZS 4431: 1989. At the completion of the work, an engineering report including a duly completed certificate in the form of Appendix A of NZS 4431 shall be submitted to Council, Attention: Subdivision Engineer by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) so that the information can be placed on the property record. This report shall detail fill depths, fill material(s), compaction test results and include as-built plans showing the location of the fill.
18. Any public road, footpath, landscaped areas or service structures that have been affected / damaged by contractor(s), consent holder, developer, persons involved with earthwork development or vehicles and machineries used in relation earthworks / construction works shall be reinstated to CSS on the expense of those identified as above and to satisfaction of subdivision engineer.

## **Appendix K – Arboriculture Assessment**

**Christchurch City Council**  
CIPA Parks Unit

**Memorandum**

**Date:** 3 September 2019

**From:** ARBORIST ENVIRONMENTAL CONSENTS (John Thornton)

**To:** PLANNER (Nathan Harris)

**RMA/2018/2029 – 171 MAIN NORTH ROAD**

Removal of protection from two protected public realm Scarlet Oak trees (*Quercus coccinea*) Unique ID Numbers 44401 & 44404, and a Silver Birch tree (*Betula pendula*) Unique ID Number 44403, located on road reserve.

The Scarlet Oak ID 44404 is greater than 6 meters in height so is now protected in the District Plan as a Public Realm tree. The Scarlet Oak ID 44401 and Silver Birch ID 44403 are below 6 meters in height, but consent for removal is required as the project is not a council one.

Although generally there is a reasonable amount of information regarding the Signal intersection layout, and the impact on the trees in the strip, there is no actual Arborist report /comments detailing the specific effects that may occur on the trees remaining, and a methodology/tree protection plan for working around the trees during the proposed Signal intersection installation.

The trees Number 1 and 3 which are identified in the application as Pin Oaks are actually Scarlet Oaks (*Quercus coccinea*) according to our data, and look like Scarlet Oaks in the application photos.

Appointment of Arborist and Pre Work meeting

It is recommended that a suitably experienced and qualified Arborist will be engaged by the applicant to liaise with the contractor(s) carrying out the work within the 5 m setback of the trees. Any excavation in particular, should take place under the direction and supervision of the Arborist, to minimise any damage to the root system. The appointed Arborist is to be approved by the Council Arborist.

Prior to any work commencing on site including demolition, material storage or heavy machinery movements, a meeting shall be held on site so the tree protection measures can be discussed by the appointed Arborist with the contractor and any sub-contractors who will be working on the site.

At the meeting, the following will be agreed:

- a) Areas for storing and/or stockpiling materials, spoil and equipment;
- b) Protection of roots within the setback area;
- c) Correct procedures when working around the trees.

The site manager should have a copy of the RMA consent granted by council, which contains the consent recommendations. The site manager will keep a copy of the RMA consent on site at all times and they will be responsible for informing the labour force with regard to the conditions of the consent.

#### Soil Excavation and Tree Root Protection

An initial exploratory dig by hand be undertaken before any demolition takes place to locate any prominent roots. All roots larger than 25mm diameter connecting to remaining trees shall be retained in an undamaged state and protected.

When soil is cleared around any tree roots, they are not left exposed, and they shall be kept covered with moist sacking material. It is recommended that excavation and reinstatement of the soil should be done by hand or AirSpade within 5 metres of the tree, though hand digging is the preferable option whenever possible. No ripping or tearing of roots (including the root plate itself) shall occur.

Any roots that are exposed during the proposed works which are to be retained, are to be covered with damp Hessian material to prevent desiccation, or backfilled with good quality topsoil. Where Hessian material is used, the Hessian is to be kept damp at all times, until the area is backfilled.

Tree roots that require removal are to be cut cleanly with sharp pruning tools such as pruning secateurs or a hand saw. Root pruning is to be undertaken by the appointed Arborist only, and is to occur where in the opinion of the Arborist the root pruning will have no more than minor effects on the health of the tree.

Following any excavations, backfilling shall take place at the earliest opportunity, and prior to backfilling, any protective material over the roots should be removed. The backfill material should be of sufficient quality to allow for the continued growth/health of the root system.

It is recommended that the excavation be lined with a heavy grade pvc or similar impervious membrane, so that any raw concrete does not contact any exposed root mass.

#### Machinery and materials

A hand compactor should be used for the base course, and soil compaction from the operation of machinery should be avoided around the tree, by keeping any heavy machinery away from it. This should not be such an issue if the tree is sufficiently protected from activity and any machinery is operated on existing hard sealed surfaces or on specialised load bearing mats.

Any construction material or machinery is not to be stored within the 5 metre setback of the tree including excavated soil, chemicals or building materials.

Disposing of water used to wash down machinery (e.g. concrete mixers) that is likely to contain concrete or fuel, on the root plate of the tree, is prohibited.

### Replacement trees

To mitigate the loss of the two Scarlet Oak trees and the Silver Birch tree, three replacement trees should be planted in the medium strip. The applicant is to bear the cost of the planting operation.

The exact species of the trees and location of the trees in the median strip area are to be determined in conjunction with the City Council Street Tree Arborist.

### Conclusion

The earthworks within the 5.0 m setback of the trees should be done in accordance with the recommendations.

There may be some minor affects on the trees for a period of time, but the proposed works should not result in serious adverse effects to the long term health and stability of the tree, if carried out in accordance with the recommendations in this report and the Christchurch City Council Civil Engineering Construction Standard Specification.

### Recommendations

These recommendations should be followed in conjunction with the Christchurch City Council Civil Engineering Construction Standard Specification – CSS: PART 1 2014 - 19.0

PROTECTION OF NATURAL ASSETS AND HABITATS, in particular sections 19.3 – 19.5.

1. The applicant is to appoint a suitably experienced and qualified Arborist that is approved by the Christchurch City Council Arborist, to monitor and supervise all earthworks within the 5 metre setback area of the trees during the proposed work.

2. Prior to the work commencing a meeting shall be held so the tree protection measures can be discussed by the appointed Arborist with the site manager, contractor and any sub-contractors who will be working on the site in proximity to the tree.

At the meeting, the following will be agreed:

- a) Areas for storing and/or stockpiling materials, spoil and equipment;
- b) Protection of roots within the setback area and protective fencing
- c) Correct procedures when working around the trees.

3. The site manager should have a copy of the RMA consent granted by council, which contains the consent recommendations. The site manager will keep a copy of the RMA consent on site at all times and they will be responsible for informing the labour force with regard to the conditions of the consent.

4. Temporary protective fencing is to be employed, to isolate the protected tree from activities for the duration of the proposed works.

5. The protective fencing is to be positioned to maximise the tree protection area, whilst allowing a safe work area for the works to occur. The appointed arborist is to determine the exact position of the protective fencing in consultation with the project manager.

6. This barrier shall be erected before any works around or adjacent to the protected tree commence and shall not be removed or moved until that section of work is complete, without the prior approval of the Council's Arborist.

7. All accidental damage to tree or protection barriers must be reported to the site manager immediately. Works occurring within the vicinity will cease until adequate tree protection measures are rectified. The site arborist will make a record of the damage and, in consultation with the site manager, action remediation measures.
8. Soil excavation within 5 metres of the trees is to occur under the direction of the Appointed Arborist, and where necessary the arborist shall engage with the excavation activities, so root damage is minimised.
9. Excavation and reinstatement of the soil should be done by hand or air spade. No ripping or tearing of roots (including the root plate itself) shall occur.
10. If any roots encountered at the levels to be excavated have to be severed, they are to be severed cleanly with pruning secateurs or a hand saw. All root pruning is to be carried out by the Appointed Arborist, and is to occur where in the opinion of the Arborist the root pruning will have no more than minor effects on the health of the tree.
11. When soil is cleared around any tree roots to be retained they shall be protected from desiccation and damage by the use of damp Hessian or good quality topsoil, as specified by the appointed Arborist.
12. Following any excavations, backfilling shall take place at the earliest opportunity, and prior to backfilling, any protective material over the roots should be removed. The backfill material should be of sufficient quality to allow for the continued growth/health of the root system.
13. It is recommended that the excavation be lined with a heavy grade pvc or similar impervious membrane, so that any raw concrete does not contact any exposed root mass.
14. Any heavy machinery should avoid coming within the 5 metre setback of the trees, except where the surface is already sealed, or specialised mats have been installed to spread the loading sufficiently to protect the ground from being compacted around the tree root systems.
15. No materials or machinery/vehicles are to be stored/parked within the 5 metre setback of the trees during the work, including excavated soil, chemicals or building materials.
16. No water used to wash down machinery (e.g. concrete mixers) likely to contain concrete or fuel shall be disposed of on the root plate of the trees.
17. To mitigate the loss of the two Scarlet Oak trees and the Silver Birch tree, three replacement trees should be planted in the median strip. The applicant is to bear the cost of the planting operation.
18. The exact species of the trees and location of the trees in the median strip area are to be determined in conjunction with the City Council Street Tree Arborist.

**Advisory Note:**

The following local arborists are considered acceptable to Christchurch City Council as qualified arborists:

Advanced Tree Services	Ph 03-344 6162 Mathew Palmer	Fax 03 344 6163 027 2202724
Alba Tree Services	03 3602962 Mik Winstanley 021 08317293	
Arbor-Tek Ltd	03 3497143 / Joe Berryman 027 272 6710	
City Care	Ph 03 941 7200	Fax 03 941 7250
Four Seasons Tree Care (Otautahi) Limited.	03 381 1422	Mobile: 021 029 66714
Treetech- Specialist Treecare Ltd Chris Walsh 027 229 7488	03 383 9370/ 0800 873378	
Arborlab (Tree Reports/Assessments)	Toby Chapman 027 4957441 toby@arborlab.co.nz	
Arbor Vitae (Tree Reports/Assessments)	Laurie Gordon 027 229 2536 laurie@naturespirits.org	
Purearb Ltd (Tree Reports/Assessments)	Martin Andrews 021 083 38252 martin@purearb.co.nz	
Warner Tree Care Limited (Tree Reports/Assessments)	03 3394412 Liz Warner 0211206913	

### **Tree Photographs**



1. The Scarlet Oak ID 44401.



2. The Silver Birch ID44403 and Scarlet Oak ID44404

John Thornton

**ARBORIST - ENVIRONMENTAL CONSENTS  
CIPA – PARKS POLICY & ADVISORY  
CIPA - PARKS UNIT**

## **Appendix L – Joint Witness Statements Transport**

**RMA/2018/2029 Proposed Papanui Pak'nSave Supermarket**

**JOINT EXPERT WITNESS STATEMENT – TRANSPORT**

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**Conferencing Date:**

10 September 2019

The conferencing took place at the Anderson Lloyd office in Christchurch with video link to Ian Clark in Auckland starting at 12 noon and finishing at 2:15pm.

**Experts Present:**

<b>Name</b>	<b>Company</b>	<b>Party Represented</b>
Dave Smith	Abley	Foodstuffs (Applicant)
Jared White	Abley	Foodstuffs (Applicant)
Richard Holland (left at 1:55pm)	Christchurch City Council	Christchurch City Council
Mark Gregory	Christchurch City Council	Christchurch City Council
Bill Sissons	Advanced Traffic	Christchurch City Council
Ian Clark	Flow	NZ Transport Agency

**Other people present:**

- Paul Durdin, Abley

The experts present, who have signed this joint statement, agree that they are familiar with and have complied with the Environment Court Code of Conduct of Expert Witnesses. In particular, by signing this statement the expert witness agrees that they individually:

- have conferred only on matters within their field of expertise
- have not acted as advocates for the parties who engage them
- during the conferencing have exercised independent and professional judgement and have not acted on any instructions or directions from the parties that have engaged them or any other person
- have signed this expert witness statement without assistance from any counsel
- have not excluded any material that they believe is essential to the decision-making
- have made a genuine effort to achieve agreement on the relevant facts and issues.

## **Issues agreed**

The following matters have been agreed in relation to the further modelling required to progress the assessment of effects of the proposed Pak'nSave supermarket on the receiving transport environment.

### **1. Permitted baseline and signals at Northcote Road/Lydia Street**

The agreed baseline for modelling is the existing logistics operation run by Toll Holdings with the current priority-controlled arrangement at the Northcote / Lydia intersection i.e. without signals.

### **2. 2021 Do Minimum Baseline**

At 2021, the agreed Do Minimum Baseline retains the existing cycle time of 85 seconds (note cycle times are currently restricted by CTOC to 85 seconds as part of the operation of the entire Main North Road corridor from Harewood Road to Prestons Road) for both morning and evening peak period, removes filter right turns from the Main North Road north and south approaches (+ a scenario to evaluate the removal of all filter turns including the right turn from Northcote Road) and uses flows modified to reflect the expected change in demands following opening of the Northern Arterial as indicated from the CAST model. The filter right turn from QEII Drive is to be removed in all scenarios as per the current operation and model.

Acceptance criteria for any lane configuration changes when the 'with development' modelling is undertaken need to be no worse for both AM and PM peaks than the 2021 Base 85s Non-Filter NS (that is no filter right turns on the Main North Road north and south approaches) scenario shown at the meeting.

### **3. 2031 Do Minimum Baseline**

Agreed that 4-laning of Northcote Road without any further modifications to the Main North / Northcote / QEII intersection forms part of this scenario. In all other respects the layout and operation of the intersection is unchanged from 2021 baseline. Any filter turns removed from the intersection at 2021 will not be reinstated in the 2031 baseline even if intersection performance deteriorates in the baseline.

### **4. Proposed mitigation at Main North Road/QEII/Northcote intersection**

Changes to the lane configuration and phasing need to be tested in s-Paramics for the AM and PM peak periods, with a sensitivity test of the interpeak using Sidra Intersection 8 software based on corresponding CAST intersection demands. A cycle time of 85 seconds is to be maintained in all periods.

### **5. Impact of CAST Re-routed Traffic**

This issue follows up on concerns raised about 'induced traffic'; however, all parties agree this should more correctly be referred to as re-routed traffic and corresponds to any traffic that re-routes through the Main North Road intersections due to a 'step change' in the efficiency performance as a result of the proposed change in lane configuration and phasing. The definition of a 'step change' was not discussed. This will be discussed at the next meeting (refer 6e).

## FINAL STATEMENT

If the s-Paramics 'with development' modelling (from item 4 above) show a step change in intersection performance (either better or worse than the corresponding baseline model), then CAST will be used to quantify the level of re-routing that could be expected as a result of the change in intersection performance.

### 6. Next Steps

- a) CCC to provide updated 2021 and 2031 CAST model outputs with development traffic and the removal of 2 Lydia Street and correction to Oil Changers carpark access (to be completed this week)
- b) Abley to re-run the 2021 and 2031 without development s-Paramics PM peak models using CAST demands received on 9 September from CCC, including a new scenario without the filter turn from Northcote Road into Main North Road southbound, and check the consistency of the other 2031 model runs presented at the meeting.
- c) Results from b) above to be recirculated by Abley as soon as possible for CTOC/NZTA/CCC agreement on whether no filter on all four approaches or no filter on three approaches (other than Northcote Rd) will form the baseline
- d) Abley to model 2021 and 2031 with development scenarios for morning peak and evening peak using inputs from a) above with mitigation as proposed. A Sidra-only test to be undertaken for interpeak period. If the Sidra result for the interpeak is worse than the 'Do Minimum Baseline', then we may need to look deeper.
- e) Results to be pre-circulated and then all parties meet 1pm-4pm Friday 20th September (venue to be Anderson Lloyd Christchurch with video connection to Anderson Lloyd Auckland).

### 7. Other matters

CAST volume and volume change diagrams were shared with Ian Clark in advance of the meeting and discussed amongst all parties at caucusing. A concern was raised by Ian Clark regarding the reduction in traffic on Main North Road in the 'with development' scenario. The reduction was explained as being due to a combination of minor re-routing on the wider network from the introduction of the new access signals on Main North Road and corresponding incremental delay, and the ability of vehicles to turn right at the signals which reduces vehicles travelling circuitously around the local network to access Foodstuffs head office as per the current situation.

An observation was made that the CAST 'with development' scenario increased traffic flows along Winters Road in the evening peak to access the Christchurch Northern Corridor via the Winters Road connection to the QEII interchange. This was agreed to feasibly be an attractive route for traffic exiting the development with the model responding logically to congestion on the route via Main North/QE2 Drive; however, it probably isn't desirable for traffic to reroute via this residential street. The increase in traffic equates to 1 vehicle every 40-60 seconds in evening peak hour.

FINAL STATEMENT

Signed & dated 12 September 2019.



Dave Smith



Jared White



For process not model expert.

Richard Holland



Mark Gregory



Bill Sissons



Ian Clark

FINAL STATEMENT

**RMA/2018/2029 Proposed Papanui Pak'nSave Supermarket**

**JOINT EXPERT WITNESS STATEMENT – TRANSPORT**

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**Conferencing Dates:**

Second session 20 September 2019 - The conferencing took place at the Anderson Lloyd office in Christchurch with video link to Ian Clark in Auckland starting at 1pm and finishing at 2:30pm.

Third session 2 October 2019 - The conferencing took place at the Anderson Lloyd office in Christchurch with video link to Ian Clark in Auckland starting at 9:30am and finishing at 11:45am.

**Experts Present:**

<b>Name</b>	<b>Company</b>	<b>Party Represented</b>
Dave Smith	Abley	Foodstuffs (Applicant)
Jared White	Abley	Foodstuffs (Applicant)
Richard Holland	Christchurch City Council	Christchurch City Council
Mark Gregory	Christchurch City Council	Christchurch City Council
Bill Sissons	Advanced Traffic	Christchurch City Council
Ian Clark	Flow	NZ Transport Agency

The experts present, who have signed this joint statement, agree that they are familiar with and have complied with the Environment Court Code of Conduct of Expert Witnesses. In particular, by signing this statement the expert witness agrees that they individually:

- have conferred only on matters within their field of expertise
- have not acted as advocates for the parties who engage them
- during the conferencing have exercised independent and professional judgement and have not acted on any instructions or directions from the parties that have engaged them or any other person
- have signed this expert witness statement without assistance from any counsel
- have not excluded any material that they believe is essential to the decision-making
- have made a genuine effort to achieve agreement on the relevant facts and issues.

### Issues agreed – Second session dated 20<sup>th</sup> September

The following matters were discussed in relation to the further modelling required to progress the assessment of effects of the proposed Pak'nSave supermarket on the receiving transport environment. The second conferencing session was predominantly a scoping exercise with agreed actions to inform final points of agreement in the third conferencing session.

#### 1. Discuss post-CNC operation 'without development' of Main Nth Road/QEII/Northcote signals at 2021 and 2031

Results including volumes, delays and LoS by turning movements were shared for the following scenarios (all 85 seconds cycle time without development):

- 2021 AM peak with current phasing and filtering
- 2021 AM peak with current phasing and no filtering on Main North Rd approaches
- 2021 AM peak with current phasing and no filtering on any approaches
- 2031 AM peak with current phasing and no filtering on Main North Rd approaches
- 2031 AM peak with current phasing and no filtering on any approaches
- 2018 PM peak with current phasing and filtering
- ]2021 PM peak with current phasing and filtering
- 2021 PM peak with current phasing and no filtering on Main North Rd approaches
- 2021 PM peak with current phasing and no filtering on any approaches
- 2031 PM peak with current phasing and no filtering on Main North Rd approaches
- 2031 PM peak with current phasing and no filtering on any approaches

Concerns were raised regarding minimum green times and whether they provide enough times for pedestrians to cross. A 22 second walk plus clearance time is considered suitable although it is noted that this is not required at every phase.

Short phase times would also limit the extent to which platooning could occur and coordination between signals could be achieved efficiently.

Removing filtering generally preferred to improve safety at intersection acknowledging is a right turn against crash history especially during offpeak periods when traffic is more free-flowing.

CAST modelling indicated around 35-40% of green time allocated to Northcote/QEII approaches which provides a sanity check around the Paramics green time allocation.

ACTIONS: Ian to ask NZTA about any changes in speed environment and/or speed limit change location on QEII approach to intersection.

ACTIONS: Bill to provide further information based on SCATS operation of the signals with respect to minimum green times required to cater for pedestrian movements at the intersection, and how often this is called.

## FINAL STATEMENT

ACTIONS: Abley to check all phase times against this information, adjust phase times where required and republish analysis with transparency around the timings.

### 2. Present 'with development' results including proposed mitigation

Results including volumes, delays and LoS by turning movements were shared for the following scenarios (all 85 seconds cycle time with development):

- 2021 AM peak with mitigation including proposed split phasing (02 CAST demands)
- 2021 AM peak with mitigation including proposed split phasing (02B CAST demands)
- 2031 AM peak with mitigation including proposed split phasing (04 CAST demands)
- 2021 PM peak with mitigation including proposed split phasing (02 CAST demands)
- 2021 PM peak with mitigation including proposed split phasing (02B CAST demands)
- 2031 PM peak with mitigation including proposed split phasing (04 CAST demands)

-Concerns raised earlier regarding minimum green times are also valid here so the same checks and actions apply to this analysis.

-Overall improved intersection performance observed with development traffic and mitigation but need to check validity of phase times.

### 3. Compare AM peak (paramics), interpeak (sidra) and PM peak (paramics) 'with development' and 'without development' scenarios

-Morning and evening peak with and without development scenario comparison to be undertaken at next conferencing session once phase times concerns are addressed.

-Interpeak Sidra modelling was presented. Abley had concerns about the quantum of re-routing and/or additional traffic in interpeak CAST demands with development traffic which show different trends to AM and PM peak period so these have not been modelled.

ACTION: Mark to revisit interpeak CAST demands to ensure the model is stable and trip generation is 80% of evening peak demands with consistent divert, pass by and primary trip generation assumptions as the morning and evening peak CAST models.

### 4. Any other matters

-Bus lane along Main North Road may become an HOV lane in the future. This would have the benefit of increasing car occupancy and reducing number of cars on the road. It is agreed that this is uncertain so will not be considered further.

-Concerns raised about the left turn out of the site then needing to weave across two lanes to turn right into QEll northbound. Is noted that with proposed layout of Main North Rd southern approach traffic exiting the development only needs to weave across to middle lane so this is an improvement over base situation.

## FINAL STATEMENT

-Safety audit signed off by Council expressed concern about conflict between pedestrians on left turn out of site and there is the potential to include ducting to futureproof the left turn for inclusion of signalized control.

ACTION: Abley to undertake modelling to demonstrate operation of left turn out if it were to be signalized.

### **5. Next steps regarding assumptions for Main Nth Road/QEII/Northcote and any additional runs required.**

Actions identified in previous steps.

Subsequent to the second conferencing session Abley and CCC undertook the additional modelling as agreed and circulated results as follows:

Interpeak Sidra modelling results on the 26th September

Morning and evening peak Paramics modelling results on the 1st October

These were discussed at the third conferencing session recorded below. The package of model outputs that correspond to the discussion below are appended to this Joint Witness Statement. Page references to the package of conferencing material are included below and for completeness pages 3 (morning peak) and 5 (evening peak) of the Appendix correspond to the key model results presented at the second conferencing session.

**Issues Agreed – Third Session dated 2<sup>nd</sup> October**

6. **Discuss the ability of CAST to manage traffic demands and demonstrate likely routing of traffic.**

A question was raised by Bill regarding as to how much reliance can be applied to the routing of traffic in CAST. All parties agree that CAST is the most appropriate tool to inform demands in Paramics. Mark explained how CAST operates there was as acknowledgement that there is not much route choice in the local area and that we are using the modelling tools to the best of their ability.

Dave reiterated that the reductions in flow outside the site are influenced by the right turn in/out enabled by the access signals and the small delay introduced in CAST due to the new signals. All experts agree that it is important to explore any 'grey areas' or limitations in the modelling but the right tools have been applied in accordance with best practice.

Mark is of the view that additional sensitivity testing may be helpful to better understand the context of uncertainty in the model outcomes.

7. **Discuss the updated s-Paramics modelling subsequent to second conferencing session (refer email on pages 1 and 2 of Appendix)**

Jared presented the updated methodology whereby the 2021 and 2031 with and without development scenarios were remodelled including the following changes:

- Extending north approach phase time out to 22 seconds for the morning peak and evening peak which are called every second and fourth phase respectively.
- These proportions were calculated from SCATS data provided by Bill.
- All other phase times checked to ensure they are sufficient to provide 22 seconds crossing time.

It is agreed by all parties that this is consistent with the agreed modelling specification from the second conferencing session.

8. **Observe and discuss 2021 Evening Peak modelling without development (refer table headed 4. on page 6 of Appendix – second set of columns headed 2021 Base 85s Filter W)**

All parties observed the 2021 PM Peak model without development with current phasing and right turn filters removed from the Main North Road approaches. Queuing was evident on Northcote Road approach and the right turn from Main North Road south had extensive queuing back into the through lane and past the Cranford Street intersection at times.

Concern was raised as to the full delay on the Northcote Road approach which may be underestimated as the path only tracks back to the Vagues Rd signals.

***AGREED ACTION: Abley to provide full path back to the external adjacent to Sawyers Arms Road and report number of unreleased vehicles.***

## FINAL STATEMENT

All parties agree that the proposed changes to the Main North Road/QEII intersection would appear to have merit, irrespective of the supermarket development, to address the increase in the right turn demand into QEII Drive. There is potentially a procedural issue around whether this improvement should be included in the future Do Minimum scenario (as the need has only just been identified, meaning that there is currently no commitment to the change). However all parties agree that ideally this improvement should be considered for implementation at around the same time as the opening of the Christchurch Northern Corridor (CNC) as remedial works, to allow traffic to access the CNC works satisfactorily (rather than continue to use Main North Road).

It is agreed that there is an additional safety benefit associated with the removal of the filter turns on the Main North Road approaches. This is likely to only require minor works with both efficiency and safety benefits likely. All parties agree that this should be recommended to NZTA based on the information available to the participants.

All parties agree that it would be useful to undertake an additional run including the proposed changes to the Main North Rd/QEII/Northcote intersection without the development to provide an alternative baseline. This will isolate the effects of the change in layout from the effects due to the development.

It is acknowledged that advice is required from other parties as to what is the appropriate base for the assessment of effects (as there is currently no commitment to the layout change recommended in the paragraphs above).

***AGREED ACTION: Abley to run 2021 PM Peak model without development but including the proposed changes (offered as mitigation in the ITA) to the Main North Rd/QEII/Northcote intersection.***

**9. Observe and discuss 2021 Evening Peak modelling with development (refer table headed 4. on page 6 of Appendix – third set of columns headed 2021 w/Dev 85s FilterW)**

All parties observed the 2021 PM Peak model running with the development and split phasing. It is agreed by all parties that the network is operating satisfactorily and is generally consistent with the published results for the corresponding run. The extensive queuing for right turners from Main North Road into QEII Drive is addressed by the change in the intersection layout and operation.

**10. Discuss 2031 Evening Peak with and without development model results (refer table headed 4. on page 6 of Appendix – two righthandmost sets of columns headed 2031 Base 85s Filter W for without development and 2031 w/Dev 85s Filter W for with development)**

The key difference in the 2031 future receiving environment is the four laning of Northcote Road which will result in more traffic accessing Northcote Road from side roads and it is noted by Mark that there are other projects planned which will change the nature of travel demands in the northwest of Christchurch. Land use changes will also be a significant factor in the forecast travel demands on the Northcote Road corridor. It is also noted that the supermarket is not expected to be operational until around 2023 which is well in advance of 2031.

## FINAL STATEMENT

All parties agree that the four laning project of Northcote Road does not have a scheme currently and that it may or may not require improvements at the Main North Rd/QEII intersection.

***AGREED ACTION: CCC to confirm what assumptions have been included in CAST in relation to the four laning so that this can be clearly understood by all parties.***

The key policy objectives (from CCC Network Management Plan) relating to the operation of the local network include:

- protecting the east-west corridor as a major arterial acknowledging its function
- safeguarding public transport on Main North Road corridor

The future operation of the network should give effect to these policy objectives.

The precise details of the Northcote Road four laning are not known and therefore the future operation of this intersection should be taken as indicative rather than precise in terms of the current modelling results. This notwithstanding all parties agree that some additional optimisation in Paramics to share out the delays across all intersection approaches would be beneficial, to understand the likely effects with and without development along the Main North Road corridor relative to the Northcote/QEII Drive corridor.

***AGREED ACTION: Abley to undertake some optimisation of phase times in 2031 PM peak model with and without development to demonstrate implications for the intersection performance. Modelled phase times for the 2021 and 2031 with and without development scenarios will also be provided.***

### **11. Discuss 2021 and 2031 Morning Peak with and without development model results (refer table headed 3 of -age 5 of Appendix)**

The 2021 and 2031 morning peak results were presented. All parties agree that the intersection operates satisfactorily in the morning peak with and without the development and it is noted that supermarket retail traffic generation is much lower.

It is agreed that given the operation of the intersection in the morning peak with and without the supermarket is acceptable, that the focus of the assessment of effects should be on the critical evening peak period and not the morning peak period.

### **12. Discuss 2021 Interpeak Sidra Modelling results (refer Sidra outputs on page 9 (without development) and 10 (with development) of Appendix)**

The Sidra modelling was presented based on the CAST model demands received from CCC on the 24<sup>th</sup> and 25<sup>th</sup> of September. It is noted that there was some rerouting occurring within CAST as a result of the additional right turn capacity from Main North Rd into QEII Drive.

## FINAL STATEMENT

Overall there is an approximate four second increase in delay as a result of a combination of the split phasing, a subsequent increase in traffic due to re-routing and additional supermarket traffic.

It is agreed by all parties that the changes proposed are acceptable in the interpeak period and there is no need to consider effects of the development in further in the interpeak period.

A question was raised about effects during the weekend. Dave notes that the demands on the network are much lower during the weekend.

### **13. Discuss modelling of signalised left in and left out of Pak'N Save access signals (refer to results in pages 7 (morning peak) and 8 (evening peak) of Appendix)**

The safety audit accompanying the ITA highlighted that the left turns would preferably be signalised for improved safety especially if pedestrian demands are high. 2021 and 2031 Morning and Evening peak model runs have been undertaken with the left turn in and left turn out both signalised and checks undertaken to ensure all crosswalk times are sufficient to accommodate safe pedestrian movements.

All parties agree that there are safety benefits associated with the signalising the left turn out and in and the modelling results indicate that there is no deterioration of intersection performance in terms of efficiency.

All parties agree that it is recommended that both left turns are signalised as part of the detailed intersection design. This is consistent with upcoming works to be undertaken by CCC at the Main North/Halliwel/Northlands intersection.

Ian asked about any potential queuing from the new site access signals back to the Cranford Street intersection. Dave notes the modelling to date indicates that it is the performance of the signals at QEII that primarily impact on the performance of the Main North Road corridor and the new signals are not causing queuing in isolation.

***AGREED ACTION: Abley team to provide all parties with a copy of the final Paramics models for any final checking to address these concerns.***

Signed & dated 8th October 2019.



FINAL STATEMENT



Dave Smith



Jared White

Richard Holland



For Process



Mark Gregory

Bill Sissons



Ian Clark

## Jared White

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**From:** Dave Smith  
**Sent:** Tuesday, 1 October 2019 15:45  
**To:** Bill Sissons; 'Holland, Richard'; Mark.Gregory@ccc.govt.nz; 'ian@flownz.com'; Jared White  
**Subject:** Papanui Pak'N Save Updated Modelling for Conferencing on 2nd October  
**Attachments:** Updated Results for Papanui PnS Paramics Model.pdf

Hi All

Please find attached a series of results from the Paramics models representing the results thus far and testing done over the past week or so. All of the results are informed by the CAST matrices provided by Mark on 13/09/2019. They are numbered and are described as follows:

1. Existing Result Set for AM Peak (0800-0900) presented at the 2<sup>nd</sup> conferencing session
2. Existing Result Set for PM Peak (1630-1730) presented at the 2<sup>nd</sup> conferencing session
3. Pedestrian Demand Analysis Result Set for AM Peak (0800-0900)
4. Pedestrian Demand Analysis Result Set for PM Peak (1630-1730)
5. Site Access Results Set for AM Peak (0800-0900)
6. Site Access Results Set for PM Peak (1630-1730)

The final four results sets have been developed to account for potential phase time changes when pedestrian demands are called at the Main North/Northcote/QEII intersection. Bill supplied actual phase times and pedestrian demand calls from Wed 18 Sep 2019 and the assumptions informing the updated analysis is below.

In the phasing data supplied the following table summarises the number of times the pedestrian movements were called. The Pedestrian movements are shown in the SCATS graphics below for which approach they cross and phases they currently run with. The phase durations were assessed and the minimum phase time for Phase E when a pedestrian movement was called was 22 seconds so this was used as the minimum for the P2 movement going forwards.

Ped Movements	P1	P2	P1, P2	All P1	All P2	P3	P4	P3, P4	All P3&4	Cycle
1600-1800	8	17	3	11	20	5	11	3	19	
1630-1730	4	8	3	7	11	2	5	3	10	
1600-1800 %call	10%	20%	4%	13%	24%	6%	13%	4%	23%	
1630-1730 %call	10%	19%	7%	17%	26%	5%	12%	7%	24%	
0700-0900	13	15	15	28	30	12	17	15	44	
0730-0830	8	9	12	20	21	9	10	14	33	
0700-0900 %call	15%	18%	18%	33%	35%	14%	20%	18%	52%	
0730-0830 %call	19%	21%	29%	48%	50%	21%	24%	33%	79%	
1400-1500	2	4	11	13	15	9	4	5	18	
1400-1500 %call	5%	10%	26%	31%	36%	21%	10%	12%	43%	



The phasing sequence in the base model is assumed to be A-D-E-G-B(or G1) at 85 seconds. In the development models with split phasing B-C-D-E at 85 seconds. In the evening peak models the phase time for when P2 would run is typically 14 to 15 seconds requiring an uplift of up to 8 seconds when pedestrian movements are called. In the base and with development model the P3 and P4 run in Phase E and have enough phase time to cover the pedestrian movements in all modelled time periods. The P1 runs with the B then A phases while P2 runs in the A phase only for the Base model. The B and A phase time covers the P1 run time requirement. The A Phase is increased to 22 seconds to cover the P2 demand by reducing the B phase time keeping other phases the same. In the with-development models the B phase is reduced and the C phase increased to 22 seconds when the P2 movement is required.

For the evening peak the P2 is called in 25% of cycles so the model has four cycles worth of phases with the last set changed to accommodate the P2 demand. The morning peak is demanded 50% of the time so there are two cycles in the model while the afternoon period is demanded one third of the time so three cycles are included. For all phase changes made to enable the pedestrian clearance times the total cycle time was retained at 85 seconds.

Look forward to discussing at conferencing tomorrow. We will also be discussing the interpeak modelling sent through late last week.

Regards

Dave

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# 1. Papanui Paramics Model Results AM Peak (0800-0900)

Main North Rd - QE2 Signal Intersection

Approach	Turn	2021 Base 85s Filter W				2021 w/Dev 85s FilterW (Mx02)				2021 w/Dev 85s FilterW (Mx02B)				2031 Base 85s Filter W				2031 w/Dev 85s FilterW (Mx04)			
		Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay
North	Left	187	14.7	B		260	15.2	B		260	16.7	B		217	15.5	B		218	16.2	B	
	Thru	436	51.5	D		332	47.2	D		333	48.3	D		400	57.2	E		429	51.5	D	
North	Right	108	54.5	D	42.5	120	42.3	D	34.7	125	39.0	D	35.2	180	53.7	D	45.0	150	42.7	D	40.2
East	Left	550	25.4	C		567	20.2	C		559	18.2	B		590	36.6	D		630	30.7	C	
	Thru	911	57.3	E		943	46.7	D		946	47.2	D		1090	67.1	E		1073	52.9	D	
East	Right	60	53.1	D	45.6	63	47.8	D	37.2	63	48.4	D	36.9	50	68.4	E	56.7	66	54.5	D	45.0
	Left	252	18.1	B		168	29.6	C		175	29.4	C		342	18.4	B		339	30.9	C	
South	Thru	401	35.0	C		354	52.3	D		353	47.3	D		409	34.7	C		341	43.6	D	
	Right	276	62.4	E	38.5	291	44.4	D	44.8	293	43.5	D	42.1	260	52.0	D	33.6	270	41.4	D	38.4
West	Left	86	19.2	B		86	17.1	B		86	19.5	B		117	22.4	C		130	25.7	C	
	Thru	655	38.0	D		664	36.0	D		671	38.8	D		789	37.4	D		860	41.1	D	
West	Right	312	53.1	D	41.0	285	42.9	D	36.3	270	41.0	D	37.8	277	77.6	E	45.3	89	34.6	C	38.7
	Intersection	4233			42.4	4133			38.0	4133			37.9	4722			46.9	4595			41.3

## Cranford - Main North Signal Intersection

Approach	Turn	2021 Base 85s Filter W				2021 w/Dev 85s FilterW (Mx02)				2021 w/Dev 85s FilterW (Mx02B)				2031 Base 85s Filter W				2031 w/Dev 85s FilterW (Mx04)			
		Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay
North	Left	347	7.0	A		263	11.7	B		255	12.3	B		348	7.0	A		260	16.5	B	
	Through	908	19.3	B	15.9	834	22.8	C	20.2	834	22.5	C	20.1	869	19.3	B	15.8	803	21.7	C	20.4
East	Left	288	9.2	A		271	9.2	A		279	9.0	A		52	9.7	A		68	8.5	A	
	Right	372	38.5	D	25.7	338	37.7	D	25.0	331	38.3	D	24.9	502	44.5	D	41.2	494	44.7	D	40.3
South	Through	455	14.3	B		449	14.0	B		451	14.5	B		448	13.5	B		409	13.3	B	
	Right	82	44.2	D	18.9	87	40.7	D	18.4	84	41.5	D	18.7	6	41.6	D	13.9	11	35.2	D	13.9
Intersection		2453			19.2	2242			21.0	2233			21.1	2225			21.7	2045			24.5

## 2.Papanui Paramics Model Results PM Peak (1630-1730)

Main North Rd - QEZ Signal Intersection

Approach	Turn	2018 Base (updated LOS calc)				2021 Base 85s Filter W				2021 w/Dev 85s FilterW (Mx02)				2021 w/Dev 85s FilterW (Mx02B)				2031 Base 85s Filter W				2031 w/Dev 85s FilterW (Mx04)						
		Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay			
North	Left	171	30.0	C		199	14.2	B		192	19.8	B		195	20.2	C		205	14.7	B		191	16.7	B		227	78.0	E
North	Thru	727	79.8	E		206	73.9	E		227	60.0	E		221	63.3	E		194	61.8	E		194	61.8	E		227	78.0	E
North	Right	162	141.1	F	81.1	112	94.5	F	55.4	118	65.1	E	46.8	120	71.3	E	49.5	175	151.8	F	72.3	94	58.5	E	51.6			
East	Left	164	13.7	B		381	27.3	C		431	17.1	B		429	14.7	B		390	24.5	C		477	18.6	B				
East	Thru	605	44.1	D		892	68.2	E		908	57.9	E		887	50.9	D		1070	53.9	D		1000	46.1	D				
East	Right	151	65.2	E	42.2	127	124.0	F	62.1	139	39.8	D	44.3	140	35.1	D	38.7	122	124.2	F	52.1	127	93.3	F	41.7			
South	Left	188	83.5	F		164	18.5	B		133	19.9	B		130	17.7	B		171	20.2	C		175	28.5	C				
South	Thru	1284	102.8	F		875	32.3	C		772	32.0	C		773	29.7	C		777	44.0	D		710	58.3	E				
South	Right	164	115.7	F	101.8	514	63.2	E	41.1	473	39.4	D	33.4	461	37.1	D	31.1	424	121.9	F	65.1	424	121.9	F	52.1			
West	Left	158	102.5	F		75	158.7	F		73	51.8	D		79	60.0	E		203	228.6	F		252	185.9	F				
West	Thru	746	135.1	F		910	187.0	F		945	77.7	E		945	85.5	F		1016	231.6	F		976	195.8	F				
West	Right	165	90.2	F	123.4	199	159.9	F	180.7	120	53.4	D	73.5	136	57.8	E	80.5	203	201.7	F	226.9	76	155.6	F	191.6			
Intersection		4685			90.3	4653			84.5	4529			48.6	4514			48.4	4951			108.3	4980			85.2			

## Cranford - Main North Signal Intersection

Approach	Turn	2018 Base (updated LOS calc)				2021 Base 85s Filter W				2021 w/Dev 85s FilterW (Mx02)				2021 w/Dev 85s FilterW (Mx02B)				2031 Base 85s Filter W				2031 w/Dev 85s FilterW (Mx04)						
		Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay	Flow	Avg Delay	LOS	App Delay			
North	Left	562	10.5	B		178	7.0	A		139	13.3	B		139	13.3	B		234	7.0	A		148	14.5	B				
North	Through	565	31.2	C		591	42.2	D	34.0	540	36.4	D	31.5	538	36.3	D	31.6	543	41.5	D	31.1	507	36.2	D	31.3			
East	Left	280	45.9	D		281	10.7	B		272	11.2	B		265	10.8	B		133	70.8	E		106	79.2	E				
East	Right	795	123.7	F	103.4	561	44.3	D	33.1	533	47.7	D	35.3	541	46.8	D	35.0	575	182.4	F	161.4	530	199.8	F	179.7			
South	Through	883	61.8	E		959	16.5	B		878	15.8	B		849	19.2	B		798	91.1	F		1057	42.5	D				
South	Right	251	47.8	D		366	29.4	C	20.1	399	28.7	C	19.9	436	34.2	C	24.3	126	52.2	D	85.8	104	26.4	C	41.1			
Intersection		3336			60.3	2936			27.5	2761			27.2	2767			29.2	2410			90.4	2452			74.4			



### 4. Papanui Paramics Model Results PM Peak (1630-1730) pedestrian phase extension models

Main North Rd - QE2 Signal Intersection (25% call of Eastern Pedestrian Crosswalk)

Approach	Turn	2018 Base (updated LOS calc)				2021 Base 85s Filter W				2021 w/Dev 85s FilterW				2031 Base 85s Filter W				2031 w/Dev 85s Filter W							
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS				
North	Left	171	30.0	C		198	14.3	B		206	13.8	B		192	14.4	B		206	13.8	B		192	14.4	B	
	Thru	727	79.8	E		209	58.9	E		197	56.5	E		224	55.5	E		197	56.5	E		226	57.8	E	
North	Right	162	141.1	F	81.1	109	87.5	F	47.8	D	122	58.2	E	43.1	D	172	111.8	F	57.7	E	96	51.4	D	40.4	D
	Left	164	13.7	B		384	27.4	C			426	16.4	B			390	29.8	C			471	16.8	B		
East	Thru	605	44.1	D		889	68.4	E			906	56.4	E			1068	61.5	E			1014	45.3	D		
	Right	151	65.2	E	42.2	125	131.4	F	62.8	E	131	106.5	F	49.2	D	124	113.2	F	57.7	E	130	72.8	E	39.2	D
South	Left	188	83.5	F		155	19.0	B			135	23.2	C			152	19.8	B			160	31.5	C		
	Thru	1284	102.8	F		861	34.1	C			775	43.2	D			748	44.7	D			666	64.6	E		
South	Right	164	115.7	F	101.8	486	103.1	F	54.8	D	471	41.9	D	40.8	D	400	115.4	F	63.5	E	658	54.3	D		
	Left	158	102.5	F		76	151.6	F			70	60.8	E			209	245.7	F			241	239.6	F		
West	Thru	746	135.1	F		912	181.4	F			943	83.3	F			1020	250.7	F			946	240.8	F		
	Right	165	90.2	F	123.4	203	147.8	F	173.8	F	122	57.5	E	79.1	E	205	210.1	F	244.2	F	78	186.8	F	237.2	F
Intersection		4685			90.3	4605			87.2	F	4519			53.4	D	4892			113.9	F	4879			95.9	F

### Cranford - Main North Signal Intersection

Approach	Turn	2018 Base (updated LOS calc)				2021 Base 85s Filter W				2021 w/Dev 85s FilterW				2031 Base 85s Filter W				2031 w/Dev 85s Filter W							
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS				
North	Left	562	10.5	B		179	6.0	A			133	12.7	B			237	7.0	A			146	14.8	B		
	Through	565	31.2	C	20.9	597	43.8	D	35.1	D	536	37.5	D	32.6	C	544	42.2	D	31.5	C	500	36.2	D	31.3	C
East	Left	280	45.9	D		282	13.0	B			268	10.7	B			141	75.3	E			88	123.1	F		
	Right	795	123.7	F	103.4	550	68.7	E	49.9	D	532	47.7	D	35.3	D	579	183.5	F	162.3	F	469	291.8	F	265.2	F
South	Through	883	61.8	E		930	39.0	D			877	15.2	B			755	97.8	F			1022	69.3	E		
	Right	251	47.8	D	58.7	357	33.9	C	37.6	D	402	28.5	C	19.4	B	126	58.2	E	92.1	F	104	41.4	D	66.7	E
Intersection		3336			60.3	2896			40.4	D	2748			27.2	C	2382			93.5	F	2329			104.4	F

### 5.Papanui Paramics Model Results AM Peak (0800-0900) Site Access

Proposed Site - Main North Signal Intersection (pedestrian activation at Main North/Northcote/QEII)

Approach	Turn	2021 with Dev					2021 with Dev (no slips)					2031 with Dev					2031 with Dev (no slips)					
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	
North	Through	1169	12.2	B			1175	12.8	B			1121	13	B			1116	13.2	B			
North	Right	50	44.6	D	13.5	B	51	44.1	D	14.1	B	44	46	D	14.2	B	45	44.4	D	14.4	B	
South	Left	63	8.8	A			69	9.7	A			62	9	A			71	9.5	A			
South	Through	721	11.2	B	11.0	B	711	10.5	B	10.4	B	851	10	B	10.1	B	848	9.8	A	9.8	A	
West	Left	62	8.3	A			38	35.9	D			55	9	A			40	34.1	C			
West	Right	119	62.2	E	43.8	D	123	60.3	E	54.5	D	121	58	E	42.6	D	119	60.5	E	53.9	D	
Intersection		2183					2167					2254					2238					
			15.1			B		15.8			B		14.8			B		15.3			B	

### 6.Papanui Paramics Model Results PM Peak (1630-1730) Site Access

Proposed Site - Main North Signal Intersection (pedestrian activation at Main North/Northcote/QEII)

Approach	Turn	2021 with Dev					2021 with Dev (no slips)					2031 with Dev					2031 with Dev (no slips)				
		Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS	Flow	Avg Delay	LOS	App Delay	App LOS
North	Through	699	11.2	B			690	12.7	B			676	12.5	B			670	12.3	B		
North	Right	106	52.0	D	16.5	B	106	50.7	D	17.7	B	101	48.8	D	17.2	B	93	52.6	D	17.3	B
South	Left	254	11.3	B			258	13.8	B			217	35.5	D			231	40.2	D		
South	Through	1090	20.8	C	19.0	B	1082	19.0	B	18.0	B	1227	79.4	E	72.8	E	1219	79.3	E	73.1	E
West	Left	224	17.3	B			212	36.4	D			222	38.5	D			217	56.9	E		
West	Right	229	46.5	D	32.1	C	237	46.3	D	41.7	D	217	43.3	D	40.9	D	220	45.3	D	51.1	D
Intersection		2601			20.5	C	2586			22.0	C	2661			51.3	D	2650			53.4	D

## MOVEMENT SUMMARY

**B** Site: 101 [Main North / QE2 2021 IP - CAST CTOC split phase 85s with dev]

New Site

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 85 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Main North Rd S												
1	L2	109	0.0	0.104	8.0	LOS A	1.3	8.9	0.36	0.61	0.36	45.1
2	T1	617	0.0	0.791	37.3	LOS D	14.8	103.3	1.00	0.96	1.15	35.3
3	R2	396	0.0	0.791	42.0	LOS D	14.6	102.4	1.00	0.94	1.16	35.3
Approach		1122	0.0	0.791	36.1	LOS D	14.8	103.3	0.94	0.92	1.08	36.1
East: QE2 E												
4	L2	501	0.0	0.428	10.7	LOS B	6.6	46.3	0.43	0.72	0.43	56.4
5	T1	653	0.0	0.682	35.0	LOS D	12.6	88.2	0.96	0.84	0.98	38.9
6	R2	90	0.0	0.724	54.1	LOS D	4.1	28.6	1.00	0.84	1.24	33.8
Approach		1244	0.0	0.724	26.6	LOS C	12.6	88.2	0.75	0.80	0.78	44.0
North: Main North Rd N												
7	L2	112	0.0	0.132	15.1	LOS B	2.2	15.6	0.55	0.69	0.55	51.3
8	T1	465	0.0	0.629	34.6	LOS C	9.1	64.0	0.97	0.81	0.98	38.4
9	R2	94	0.0	0.267	37.3	LOS D	3.4	23.6	0.89	0.76	0.89	35.1
Approach		671	0.0	0.629	31.8	LOS C	9.1	64.0	0.89	0.78	0.89	39.5
West: Northcote Rd W												
10	L2	135	0.0	0.219	23.7	LOS C	3.9	27.2	0.74	0.71	0.74	39.9
11	T1	677	0.0	0.797	35.8	LOS D	16.3	114.0	0.97	0.94	1.14	38.3
12	R2	125	0.0	0.476	27.2	LOS C	3.7	26.2	0.93	0.77	0.93	38.4
Approach		937	0.0	0.797	32.9	LOS C	16.3	114.0	0.93	0.89	1.05	38.5
All Vehicles		3974	0.0	0.797	31.7	LOS C	16.3	114.0	0.87	0.85	0.95	39.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P2	East Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P3	North Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P4	West Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
All Pedestrians		200	36.8	LOS D			0.93	0.93	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

# MOVEMENT SUMMARY

**Site: 101 [Main North / QE2 2021 IP - CAST CTOC 85s no filter NS]**

New Site

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 85 seconds (Site User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Main North Rd S												
1	L2	96	0.0	0.087	8.3	LOS A	1.2	8.2	0.37	0.61	0.37	45.0
2	T1	613	0.0	0.704	33.9	LOS C	12.2	85.6	0.97	0.86	1.03	36.7
3	R2	178	0.0	0.716	45.5	LOS D	7.6	53.5	1.00	0.88	1.13	33.9
Approach		887	0.0	0.716	33.4	LOS C	12.2	85.6	0.91	0.84	0.98	36.8
East: QE2 E												
4	L2	418	0.0	0.348	9.6	LOS A	4.3	30.3	0.36	0.71	0.36	57.4
5	T1	683	0.0	0.603	30.8	LOS C	12.2	85.7	0.91	0.81	0.91	40.8
6	R2	90	0.0	0.620	51.5	LOS D	3.9	27.5	1.00	0.80	1.09	34.7
Approach		1191	0.0	0.620	25.0	LOS C	12.2	85.7	0.72	0.78	0.73	44.7
North: Main North Rd N												
7	L2	126	0.0	0.130	11.9	LOS B	2.0	14.3	0.46	0.67	0.46	53.7
8	T1	398	0.0	0.457	30.6	LOS C	7.2	50.6	0.91	0.75	0.91	40.0
9	R2	108	0.0	0.434	43.2	LOS D	4.3	30.0	0.96	0.78	0.96	33.3
Approach		632	0.0	0.457	29.0	LOS C	7.2	50.6	0.83	0.74	0.83	40.7
West: Northcote Rd W												
10	L2	154	0.0	0.129	8.2	LOS A	1.9	13.2	0.37	0.61	0.37	47.9
11	T1	685	0.0	0.695	28.3	LOS C	14.8	103.4	0.91	0.80	0.94	41.5
12	R2	110	0.0	0.350	23.1	LOS C	2.9	20.4	0.86	0.75	0.86	40.1
Approach		949	0.0	0.695	24.5	LOS C	14.8	103.4	0.82	0.77	0.84	42.3
All Vehicles		3659	0.0	0.716	27.6	LOS C	14.8	103.4	0.81	0.78	0.83	41.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P2	East Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P3	North Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
P4	West Full Crossing	50	36.8	LOS D	0.1	0.1	0.93	0.93	
All Pedestrians		200	36.8	LOS D			0.93	0.93	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

**RMA/2018/2029 Proposed Papanui Pak'nSave Supermarket**

**JOINT EXPERT WITNESS STATEMENT – TRANSPORT**

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**Conferencing Dates:**

Fourth session 15 October 2019 - The conferencing took place at the Anderson Lloyd office in Christchurch with video link to Ian Clark in Auckland starting at 12 noon and finishing at 1:30pm.

**Experts Present:**

<b>Name</b>	<b>Company</b>	<b>Party Represented</b>
Dave Smith	Abley	Foodstuffs (Applicant)
Jared White	Abley	Foodstuffs (Applicant)
Richard Holland	Christchurch City Council	Christchurch City Council
Mark Gregory	Christchurch City Council	Christchurch City Council
Bill Sissons	Advanced Traffic	Christchurch City Council
Ian Clark	Flow	NZ Transport Agency

The experts present, who have signed this joint statement, agree that they are familiar with and have complied with the Environment Court Code of Conduct of Expert Witnesses. In particular, by signing this statement the expert witness agrees that they individually:

- have conferred only on matters within their field of expertise
- have not acted as advocates for the parties who engage them
- during the conferencing have exercised independent and professional judgement and have not acted on any instructions or directions from the parties that have engaged them or any other person
- have signed this expert witness statement without assistance from any counsel
- have not excluded any material that they believe is essential to the decision-making
- have made a genuine effort to achieve agreement on the relevant facts and issues.

## **Issues agreed – Fourth session dated 15<sup>th</sup> October**

The following matters were discussed in relation to the further modelling required to progress the assessment of effects of the proposed Pak'nSave supermarket on the receiving transport environment. The matters discussed progress on the four actions identified in the third modelling conferencing session (held on 2<sup>nd</sup> October) and documented in the corresponding Joint Witness Statement signed and dated on the 8<sup>th</sup> October 2019.

The four matters discussed are presented in turn in this statement and refer to emails including modelling outputs which are included as an Appendix to this Joint Witness Statement. A concluding statement with respect to the Main North Road/QEII Drive/Northcote Road intersection operation and supplementary material regarding modelled phase times at this intersection are also included.

**1. AGREED ACTION: Abley to provide full path back to the external adjacent to Sawyers Arms Road and report number of unreleased vehicles.**

The outputs included in the email on pages 1-2 of the Appendix were presented and discussed to address this action.

All parties acknowledge that the modelling indicates extensive queuing from the west with on average 60 vehicles not released between 5:30pm and 6pm in the base model (without development). This is due to the single eastbound lane on Northcote Road and the relatively short provision for stacking at the Northcote Road approach to the Main North Road/QEII Drive/Northcote Road intersection. This extent of queuing would likely be addressed when the corridor is four-laned at some stage in the future. The 2031 modelling without the development demonstrates that the provision of an additional eastbound lane on Northcote Road provides sufficient capacity such that all vehicles are released in the evening peak period.

With the addition of the development traffic, the modelling indicates that all vehicles are being released onto the network in the 2021 evening peak period. It is noted that this scenario includes changes to the layout and phasing as proposed including optimisation of phase times including the addition of two seconds of green time to the Northcote Rd and QEII Drive approaches every cycle.

The key modelling assumptions and phase times are included as supplementary information in section 6 of this Joint Witness Statement.

**2. AGREED ACTION: Abley to run 2021 PM Peak model without development but including the proposed changes (offered as mitigation in the ITA) to the Main North Rd/QEII/Northcote intersection.**

The outputs included in the email on page 3 of the Appendix were presented and discussed to address this action.

All experts agree that the modelling confirms the previous conclusion, that the changes in the layout and phasing proposed in the application are predicted to lead to a significant improvement in the performance of the Main North Road/QEII Drive/Northcote Road

intersection. The experts remain of the view that this should be investigated further by NZTA irrespective of the development. It is noted that this modelling includes provision for pedestrian movements.

The experts agree that the addition of the development is predicted to lead to an improvement in the performance of the intersection. The experts note that this is likely to be due in part to the traffic re-distribution and re-routing in the models when development traffic is added, however it is also due to the additional flexibility and route choice on the network as a result of the introduction of the additional signalised intersection on Main North Road (between QEII Drive and Cranford Street).

The experts note that there are two potential re-routing matters to be explored. One is the re-routing due to the equilibrium assignment within CAST and there is also some limited route choice within the Paramics model including Foodstuffs Head Office traffic that may be undertaking u-turn manoeuvres at the Main North Road/QEII intersection, or travelling via Vagues Road to connect from Northcote Road to the south<sup>1</sup>. Mr Smith states that he will provide more information with respect to the CAST re-routing and the route choice within Paramics in his evidence.

The sensitivity test undertaken in the righthandmost column of the table in page 3 of the Appendix includes an additional two seconds of green time to the east and west approaches. The modelling demonstrates that a higher level of priority to east-west movement on Northcote Road and QEII Drive can be provided in the 2021 evening peak, without undermining Main North Road corridor movement including public transport movement. It is noted that the SCATS software used by CTOC would reallocate time in this manner to protect the function of the corridors.

**3. AGREED ACTION: CCC to confirm what assumptions have been included in CAST in relation to the four laning so that this can be clearly understood by all parties.**

Mark has provided the following response to this request:

“The CAST model used for the Application is based on a project model developed as part of the Harewood Road corridor study (mid 2018). Taking in more than just Harewood Road, this study went to Council in 2018 and is guiding the investment strategy for the area. Calibrated with the most up to date scheme and land use change information (as of 2018), the model was a logical choice for testing the outcomes of the proposed Pak’N Save development. The original testing was undertaken in September 2018.

As of August 2019, it was decided to continue with the current version of CAST, over converting modelling to the updated v18a model (available as of May 2019).

The future CAST model for the year 2031 includes Northcote Road as having four lanes, for all time slices. Saturation capacities of 3600 per hour per direction and a cost flow curve allowing for the effects of two lanes has been included. Full turning movements are assumed at all intersections, including some offset ancillary lanes.

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<sup>1</sup> See also comment within item 4 about potential rerouting through the site

It should be noted that the planning underway for this corridor has moved on. Alternative schemes are being considered which increase capacity without inducing demand, and which are likely to make better use of the existing network (in alignment with the current GPS) and which are likely to deliver better value for money.”

**4. AGREED ACTION: Abley to undertake some optimisation of phase times in 2031 PM peak model with and without development to demonstrate implications for the intersection performance. Modelled phase times for the 2021 and 2031 with and without development scenarios will also be provided.**

The outputs included in the email on page 4 of the Appendix were presented and discussed to address this action.

Mr Clark noted that there is a risk that there may be through traffic from Northcote Road travelling through the site to get to Main North Road. Mr Smith and Mr White will investigate to see if this behaviour is occurring.

Mr Clark also noted concerns regarding the delays on the Cranford Street approach to the Main North Road intersection. Some of the changes in delays on key intersection approach at 2031 appear to be not as expected. Mr Smith and Mr White have agreed to undertake some additional investigation to understand this further and Mr Smith will report this in evidence.

Mr Smith stated his intention is to present a comprehensive set of 2021 and 2031 evening peak hour modelling results with and without the development, which are consistent with the modelling assumptions and scenarios presented at this conferencing session.

**5. Concluding Statement with respect to Main North Road/QEII Drive/Northcote Road Mitigation**

All experts agree that it would seem logical that as part of the Christchurch Northern Corridor opening works, the lane allocation at the intersection and phasing should be changed as per the proposed mitigation (unless there are non-traffic reasons that the experts are not aware of) irrespective of the development, as this will deliver safety and efficient improvements at the intersection. This is a matter which should be advanced by NZ Transport Agency and Christchurch City Council.

Assuming resource consent were granted for the Pak’N Save development, the works required to reallocate the right turn stacking room on the median for the new set of signals at the supermarket access, could then be undertaken at the expense of the developer prior to the opening of the supermarket.

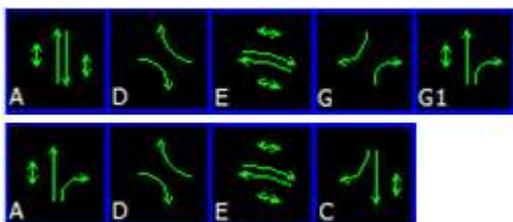
**6. Supplementary material**

A full set of modelled Paramics phase times for all evening peak model runs discussed in this conferencing session is provided with this technical note as additional information for the experts.

## FINAL STATEMENT

All modelling has removed the filter right turns on the Main North Road approaches but retains filtering on the Northcote Road approach only. All modelling includes pedestrian activation in the 4th set of phases or 25% of the time, which is calibrated based on the current frequency of pedestrian calls across the eastern (QEII Drive) approach and requires an extension of green time for the Main North Road north approach.

The following shows the movements that the phasing represents with existing phasing shown in the first row and split phasing shown in the second row.



Scenario	General phasing times						Ped activation over QEII Drive approach					
	A	D	E	G	C-G1	Cycle Time	A	D	E	G	C-G1	Cycle Time
2021 base ex phase	14	11	28	13	19	<b>85</b>	22	11	28	13	11	<b>85</b>
2021 base Split Phase	30	11	29		15	<b>85</b>	23	11	29		22	<b>85</b>
2021 base Split Phase W+1sec	29	11	30		15	<b>85</b>	22	11	30		22	<b>85</b>
2021 with dev	30	11	29		15	<b>85</b>	23	11	29		22	<b>85</b>
2031 base Ex Phase	15	11	32	15	12	<b>85</b>	22	11	32	15	5	<b>85</b>
2031 with dev	28	12	31		14	<b>85</b>	23	11	29		22	<b>85</b>
2031 Split Phase Opt Delay set 1*	27	11	34		13	<b>85</b>	21	11	31		22	<b>85</b>
2031 Split Phase Opt Delay set 2*	28	11	34		12	<b>85</b>						
2031 with dev Opt Delay	30	11	32		12	<b>85</b>	21	11	31		22	<b>85</b>

\*There were two sets of general phases called in the 2031 base with split phasing in order to give time to the west but manage the delays of the movements losing time.

**7. Supply of model and peer review**

A copy of the base year 2018 model and final 2021 and 2031 with and without development transportation models (five models in total) will be made available to all parties by close of business 18<sup>th</sup> October 2019.

Mr Smith and Mr Holland agree that there would be merit in an independent peer review being undertaken of the corresponding models. This will be a joint engagement between the Applicant and Christchurch City Council and both parties have agreed that Mr John Falconer from QTP is an appropriate reviewer.

**Signed & dated 18th October 2019.**

FINAL STATEMENT



**Dave Smith**



**Jared White**



**Richard Holland (for process)**



**Mark Gregory**



**Bill Sissons**



**Ian Clark**

**RMA/2018/2029 Proposed Papanui Pak'nSave Supermarket**

**JOINT EXPERT WITNESS STATEMENT – TRANSPORT**

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**Conferencing Dates:**

16th October 2019 - The conferencing took place at the Anderson Lloyd office in Christchurch with video link to Ian Clark in Auckland starting at 9am and finishing at 11:45am

**Experts Present:**

<b>Name</b>	<b>Company</b>	<b>Party Represented</b>
Dave Smith	Abley	Foodstuffs (Applicant)
Paul Durdin	Abley	Foodstuffs (Applicant)
Richard Holland	Christchurch City Council	Christchurch City Council
Mark Gregory	Christchurch City Council	Christchurch City Council
Bill Sissons	Advanced Traffic	Christchurch City Council
Ian Clark*	Flow	NZ Transport Agency
Len Fleete	Environment Canterbury	Environment Canterbury

\* Left conferencing at 10:50am

Edward Wright representing Environment Canterbury was unable to attend due to illness.

The experts present, who have signed this joint statement, agree that they are familiar with and have complied with the Environment Court Code of Conduct of Expert Witnesses. In particular, by signing this statement the expert witness agrees that they individually:

- have conferred only on matters within their field of expertise
- have not acted as advocates for the parties who engage them
- during the conferencing have exercised independent and professional judgement and have not acted on any instructions or directions from the parties that have engaged them or any other person
- have signed this expert witness statement without assistance from any counsel
- have not excluded any material that they believe is essential to the decision-making
- have made a genuine effort to achieve agreement on the relevant facts and issues.

The conferencing was facilitated by Dave Smith of Abley. Mr Smith initially provided a brief overview of the key findings and outcomes of the four transport modelling conferencing sessions, primarily for the benefit of Paul Durdin and Len Fleete who did not participate in this conferencing. The conferencing then worked through the Integrated Transportation Assessment (ITA) report, produced as part of the resource consent application documentation, on a section by section basis. The outcomes of the conferencing are recorded on the following pages.

## **Section 1 - Introduction**

The contents of Section 1 are a statement of fact and context for ITA.

## **Section 2 – Existing Site Information**

All experts agree that section 2 of the ITA is an accurate representation of the existing site - agreed in full.

## **Section 3 – Existing Transport Environment**

The following commentary was provided and agreed by all participants:

- It would be beneficial to mention the KiwiRAP ranking of the Main North / Northcote / QE II intersection to assist the commissioner to understand the rationale for safety improvements at the intersection, irrespective of the proposed development.
- It would be beneficial to add pedestrian crossing facilities to Figure 3.5 to paint a full picture of pedestrian and cyclist facilities in the vicinity of the subject site.
- The words “four laning” in the final paragraph of Section 3 should be replaced by “route improvements” to accurately reflect the current state of the project included in the CCC Long Term Plan.
- Ian Clark asked whether the modelling included activity on the existing Murdoch Manufacturing site in the modelled permitted baseline. Mr Smith responded that industrial activity on this site is not included and therefore the modelling assessment is conservative.
- A question was asked about the crash record at the Northcote Road / Lydia Street intersection and if any of the crashes at Main North Road / Northcote / QEII Drive intersection involved vehicles undertaking U-turn manoeuvres.

All experts agree that other than as noted above, section 3 of the ITA is an accurate representation of the existing transport environment. Mr Smith notes he will investigate the above suggestions and address these in evidence.

## **Section 4 - Proposed Development**

Richard Holland and Mark Gregory raised concerns regarding the need for five access points along the Main North Road frontage. In particular, the need for Access 1 was queried, given the internal connectivity that is proposed to be facilitated via Access 2. All experts agreed that some consolidation of access points along Main North Road would be beneficial and supported consideration of removal of Access 1 in principle, acknowledging that the turn out of this access has potential safety implications. Mr Clark noted that Access 1 could be modified to left-in movements only if complete removal of the access was not acceptable to the Applicant.

POST CONFERENCING NOTE – Mr Smith confirms that Access 1 will operate as a one-way entry with no exit.

Mr Fleete expressed concerns that the introduction of a new signalised intersection (Access 3) had the potential to disrupt bus travel along the Main North Road corridor. All experts agreed that Access 3 should include a dedicated bus signal to preserve bus movement priority along the corridor. Furthermore, all experts agreed that there is flexibility around the location of the bus stops along the western side of Main North Road between Cranford Street and Northcote Road if the development and associated road improvements were to proceed.

## FINAL STATEMENT

Mr Fleete is concerned about the extent to which southbound bus services on Main North Road may potentially be impeded by the new signalised access, acknowledging that the current southbound bus lane is continuous.

All parties recommend a condition of consent such that the applicant will engage with CCC, Environment Canterbury and CTOC at detailed design stage of the new signalised access. This will ensure that public transport priority is maintained or enhanced within the design, including consideration of a northbound bus jump at the signalised access and the optimal location of bus stop(s) along the corridor to service the supermarket and other adjacent activities.

Regarding Access 7, the experts supported the extension of the median on Northcote Road to ensure this access continues to operate as left-in, left-out. There was discussion about the implications of Access 7 on the capacity of the intersection if the left-turn in was to become an attractive route into the supermarket. A risk was highlighted that if there were a high volume of westbound left turning vehicles, then the capacity of the adjacent Northcote Road westbound merge from two lanes into one would be reduced. Despite the transport modelling indicating a very low number of left turning vehicles, the experts believed it would be prudent to formulate a condition of consent that requires the use of Access 7 and its interaction with the Main North / Northcote / QE II intersection to be monitored. Should adverse effects arise then mitigation would be required, which could involve restricting entry from the commercial property to the supermarket at the internal roundabout on the Right of Way.

The experts discussed the need for some form of travel demand management at the adjacent Foodstuffs Head Office to be required as part of this consent. All experts agreed that travel demand management would be beneficial in spreading trip generation during the evening peak period and ensuring staff parking occurred on-site in preference to on-street.

All experts agree that other than as noted above, section 4 of the ITA is an appropriate description of the proposed development. Mr Smith notes he will investigate the above suggestions and address these in evidence.

### **Section 5 – Integration with Strategic Planning Framework**

Mr Holland and Mr Gregory raised concerns around the sufficiency of staff parking supply and security. It was agreed that this would best be addressed in the Travel Plan that would be developed for supermarket employees. The experts agreed it would be appropriate for the Applicant to share the Travel Plan with Council for review and comment (but not approval) before the Applicant implements the plan.

The experts agreed that the content of Section 5 is accurate; however, wished to note that there are a larger range of planning matters that will need to be considered as part of the application, particularly as they relate to the land-use/transport relationship and key activity centres.

The experts agreed that it is important to preserve the public transport role of the Main North Road corridor, and explore the possibility of a bus jump at the new signals. Dave Smith notes that testing has been undertaken in the transport model to ensure the feasibility of a bus jump for northbound buses at the signals.

All experts agree that other than as noted above, section 5 of the ITA is an appropriate evaluation of the development in respect of the Strategic Planning Framework.

## **Section 6 – Accessibility of the Proposal**

Mr Gregory expressed a strong preference for design changes to improve the directness and quality of pedestrian linkages between bus stops on Main North Road and the supermarket in the vicinity of Access 3, including consideration of the integration between of the internal connections and bus stop location to be designed together. All experts agreed that the position of the fuel facility meant pedestrian access would be indirect and circuitous between Access 3 and the supermarket. The experts agreed that there would be merit in considering alternative layouts that enhance pedestrian connectivity across the site however there may be other considerations beyond transportation that could be relevant to the consideration of alternative layouts.

Mr Gregory considers there is a need for Heavy Vehicle access options to provide flexibility and resilience, in light of anticipated changes to network design including changing availability of turning movements. Mr Smith and Mr Durdin respond that service vehicle access is intended to be separated out from other uses and the customer car park as far as possible with access intended to be via Lydia Street only. This is standard practice in supermarket design. The other accesses are not intended to be designed for large vehicles such as semi-trailers and in the extremely unlikely event that Lydia Street could not be used to access the site these vehicles would simply not be able to be used and smaller service vehicles such as rigid trucks would be used to service the site instead.

All experts agree that other than as noted above, section 6 of the ITA is an appropriate evaluation of the accessibility of the proposal.

## **Section 7 – Travel Characteristic and Trip Generation**

Mr Holland requested that Abley check that a semi-trailer is able to undertake a left turn from Northcote Road into Lydia Street.

The experts agree that the parking should be designed in accordance with appropriate design standards including NZ S 2890.

All experts agree that other than the concern raised above, section 7 of the ITA is an appropriate representation of the trip generation, parking supply and service and delivery arrangements associated with the proposal.

Mr Clark left conferencing at this time.

## **Section 8 – Transport Modelling Assessment**

All experts agreed that the transport modelling conferencing has superseded the information presented in this Section of the ITA report and that no discussion was necessary. (Mr Clark accepted this point, prior to departing the conferencing).

## **Section 9 – District Plan Assessment**

All experts agree that section 9 of the ITA is an appropriate evaluation of the development in against the CCC District Plan provisions.

## **Section 10 – Assessment of Non-compliances**

Mr Holland and Mr Gregory expressed concern about the potential for staff to park on-street. They would like the Travel Plan to direct staff to utilise on-site car parking.

FINAL STATEMENT

The experts noted that previous comments in Section 6 also relate to the 2<sup>nd</sup> assessment matter under the High Trip Generator rule: Design and Layout. Any changes made to the site layout should be reflected in the evaluation of this assessment matter.

All experts agree that other than as noted above, section 10 of the ITA is an appropriate evaluation of the non-compliances identified in Section 9 of the ITA.

**Other matters**

Finally, the experts wished to record an acknowledgment that all works in the road corridor cannot proceed without approval from Council or the Community Board where that authority has been delegated.

**Signed & dated 21st October 2019.**



**Dave Smith**



**Paul Durdin**



**Richard Holland**



**Mark Gregory**



**Bill Sissons**



**Ian Clark**



**Len Fleete**

## **Appendix M – Joint Witness Statement Planning Policy**

Before the Independent Commissioner

Under the Resource Management Act 1991

In the matter of an application by Foodstuffs South Island Limited for the establishment and operation of a PAK'nSAVE supermarket and fuel station at 191 Main North Road, and associated car parking, vehicle access, landscaping, signage, and storm water treatment (RMA/2018/2029)

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**Joint Witness Statement: Planning Policy**

30 October 2019

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- 1 This joint witness statement has been prepared in response to the Commissioner's Minute 1 instructions to conference in respect of planning and policy matters.
- 2 The conferencing took place on Monday 21 October 2019 at the Christchurch City Council offices, commencing 10am and finishing at 11.15am.
- 3 Participants at the meeting were:

<b>Name</b>	<b>Organisation</b>	<b>Party Represented</b>
Nathan Harris	Christchurch City Council	Christchurch City Council
Emma Chapman	Christchurch City Council	Christchurch City Council
Joanne Stapleton	Environment Canterbury	Environment Canterbury (Submitter)
Mark Allan	Aurecon	Foodstuffs (Applicant)

- 4 Ms Chapman was in attendance in an advisory / peer review capacity and will not be providing planning evidence.
- 5 In preparing this statement, the expert witnesses have read and understood the Code of Conduct for Expert Witnesses as included in the Environment Court of New Zealand Practice Note 2014. We have confined our conferencing to matters within our field of expertise. We have exercised independent and professional judgment. We have not acted on the instructions or directions of any person to withhold data or information, or to withhold or avoid agreement, or as to the contents of this statement.

**Matters agreed**

- 6 The following matters have been agreed in respect of the planning policy framework relevant to the application:

***Canterbury Regional Policy Statement (RPS)***

- a) We agree that, as relevant to the current application, the Christchurch District Plan has given effect to the RPS pursuant to s75(3) of the RMA and that, accordingly, assessment of the proposal against the provisions of the RPS is not required.

### **Chapter 3 Strategic Directions, Christchurch District Plan (CDP)**

- b) We agree that Chapter 3: Strategic Directions provides overarching direction for the CDP and is given effect to by the objectives and policies in the other chapters of the CDP.
- c) We agree that the objectives and policies in the other chapters of the CDP are consistent with the objectives in this Chapter.
- d) We agree that in these circumstances it is not necessary to undertake a discrete analysis of the objectives in this Chapter.
- e) We agree that in these circumstances it is appropriate to consider the application in the broad context set by the high-level objectives in this Chapter.

### **Chapter 15 Commercial, CDP**

- f) We agree that the following objectives and policies of Chapter 15: Commercial are relevant to consideration of the application:
  - 15.2.1 Objective - Recovery of commercial activity
  - 15.2.2 Objective - Centres-based framework for commercial activities
  - 15.2.2.1 Policy - Role of centres
  - 15.2.2.4 Policy - Accommodating growth
  - 15.2.4 Objective - Urban form, scale and design outcomes
  - 15.2.4.1 Policy - Scale and form of development
  - 15.2.4.2 Policy - Design of new development
- g) We agree that the remaining objectives and policies of the Chapter are not relevant.

### **Chapter 16 Industrial, CDP**

- h) We agree that the following objectives and policies of Chapter 16: Industrial are relevant to consideration of the application:
  - 16.2.1 Objective - Recovery and growth
  - 16.2.1.1 Policy - Sufficient land supply
  - 16.2.1.2 Policy - Enable the development of industrial areas to support recovery
  - 16.2.1.3 Policy – Range of industrial zones
  - 16.2.1.4 Policy - Activities in industrial zones
  - 16.2.1.5 Policy - Office development (only insofar as the proposed activity involves ancillary office / administration areas)
  - 16.2.3 Objective - Effects of industrial activities (noting that while 16.2.3a. refers to “adverse effects of industrial activities and development on the environment”, supporting 16.2.3.2 Policy - Managing effects on the environment refers more broadly to “effects of development and activities in industrial zones...”
  - 16.2.3.2 Policy - Managing effects on the environment
  - 16.2.3.3 Policy - Managing stormwater

- i) We agree that the application site is a “brownfield” site as defined by the CDP, but that the proposal does not constitute “brownfield redevelopment” as expressed in *16.2.2 Objective - Brownfield redevelopment* and supporting *16.2.2.1 Policy - Brownfield site identification* and *16.2.2.2 - Policy Brownfield redevelopment*. To this end, we agree that these provisions are not relevant.
- j) We agree that the remaining objectives and policies of the Chapter are not relevant.

***Balance of the CDP***

- k) We agree that other relevant objectives and policies are contained in the balance of the CDP, and have recorded these in the table appended to this statement (**Attachment 1**).
- l) In respect of Chapter 4 Hazardous Substances and Contaminated Land, we agree that through suitable conditions of consent and site/ construction management practices, the proposal would be consistent with the relevant objectives and policies of this Chapter.
- m) In respect of Chapter 5 Natural Hazards, Mr Harris and Mr Allan agree that through suitable conditions of consent and site design / construction management practices, the proposal would be consistent with the relevant objectives and policies of this Chapter. Ms Stapleton does not have a position, the issue of flooding not being of concern to Environment Canterbury.
- n) In respect of Chapter 6 General Rules and Procedures, Mr Harris and Mr Allan agree that *6.1 Noise*, *6.3 Outdoor Lighting*, *6.6 Water Body Setbacks* and *6.8 Signs* are the only relevant sub-chapters, and that the policy intent could be met through suitable conditions of consent and mitigation measures informed by specialist technical evidence, e.g. acoustics, ecology, urban design, transport. Ms Stapleton does not have a position, these matters not being of concern to Environment Canterbury.
- o) In respect of Chapter 7 Transport, we agree that the objectives and policies are effects-based, and that the proposal’s consistency or otherwise with the same will be informed by specialist transport evidence.
- p) In respect of Chapter 8 Earthworks, Mr Harris and Mr Allan agree that through suitable conditions of consent and site/ construction management practices, the proposal would be consistent with the relevant objectives and policies of this Chapter. Ms Stapleton does not have a position, the issue of earthworks not being of concern to Environment Canterbury.
- q) In respect of Chapter 9 Significant and Other Trees, Mr Harris and Mr Allan agree that through suitable conditions of consent and site/ construction management practices, the proposal would be consistent with the relevant objectives and policies of this Chapter. Ms Stapleton does not have a position, the issue of street trees not being of concern to Environment Canterbury.

**Matters not agreed**

7 The following matters have not been agreed:

- a) The extent to which the proposed activity is consistent, or otherwise, with the relevant objectives and policies in the Commercial and Industrial Chapters of the CDP.

Dated 30 October 2019



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Nathan Harris



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Jo Stapleton



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Mark Allan

## Attachment 1: Agreed Relevant Objectives and Policies

<b>Chapter 4 Hazardous Substances and Contaminated Land</b>	
4.2.2.1 Objective	Contaminated land – managing effects
4.2.2.1.1 Policy	Best practice approach
4.2.2.1.2 Policy	Remediation
4.2.2.1.3 Policy	Future use
<b>Chapter 5 Natural Hazards</b>	
5.2.1.1 Objective	Natural hazards (reverts to Objective 3.3.6 in Chapter 3 Strategic Directions)
5.2.2.1.2 Policy	Manage activities to address natural hazard risks
5.2.2.1.4 Policy	No transferring of natural hazard risk
5.2.2.2.1 Policy	Flooding
<b>Chapter 6 General Rules and Procedures</b>	
<b>6.1 Noise</b>	
6.1.2.1 Objective	Adverse noise effects
6.1.2.1.1 Policy	Managing noise effects
6.1.2.1.2 Policy	Noise during night hours
<b>6.3 Outdoor Lighting</b>	
6.3.2.1 Objective	Artificial outdoor lighting and glare
6.3.2.1.1 Policy	Enabling night-time activity while managing the adverse effects of artificial outdoor lighting
<b>6.6 Water Body Setbacks</b>	
6.6.2.1 Objective	Protection of water bodies and their margins from inappropriate use and development
6.6.2.1.1 Policy	Naturalisation of water bodies and their margins
6.6.2.1.2 Policy	Setbacks from water bodies
6.6.2.1.3 Policy	Management of activities in water bodies
<b>6.8 Signs</b>	
6.8.2.1 Objective	Signage
6.8.2.1.1 Policy	Enabling signage in appropriate locations
6.8.2.1.2 Policy	Controlling signage in sensitive locations
6.8.2.1.3 Policy	Managing the potential effects of signage
6.8.2.1.4 Policy	Transport safety
<b>Chapter 7 Transport</b>	
7.2.1 Objective	Integrated transport system for Christchurch District
7.2.1.2 Policy	High trip generating activities
7.2.1.3 Policy	Vehicle access and manoeuvring
7.2.1.4 Policy	Requirements for car parking and loading

7.2.1.5 Policy	Design of car parking areas and loading areas
7.2.1.6 Policy	Promote public transport and active transport
7.2.1.8 Policy	Effects from transport infrastructure
7.2.2 Objective	Adverse effects from the transport system
7.2.2.1 Policy	Effects from the strategic transport network
7.2.2.2 Policy	Activities within the Transport Zone
7.2.2.3 Policy	Effect on adjacent land uses to the Transport Zone
<b>Chapter 8 Earthworks</b>	
8.2.4 Objective	Earthworks
8.2.4.1 Policy	Water quality
8.2.4.3 Policy	Benefit of earthworks
8.2.4.4 Policy	Amenity
8.2.5 Objective	Earthworks health and safety
8.2.5.1 Policy	Land stability
8.2.5.2 Policy	Nuisance
8.2.5.3 Policy	Vehicle movement
8.2.5.4 Policy	Earthworks design
8.2.5.5 Policy	Management of contaminated land
<b>Chapter 9 Significant and Other Trees</b>	
9.4.2.1.1 Objective	Trees
9.4.2.2.3 Policy	Tree protection
9.4.2.2.4 Policy	Tree maintenance
9.4.2.2.7 Policy	Felling of trees
<b>Chapter 15 Commercial</b>	
15.2.1 Objective	Recovery of commercial activity
15.2.2 Objective	Centres-based framework for commercial activities
15.2.2.1 Policy	Role of centres
15.2.2.4 Policy	Accommodating growth
15.2.4 Objective	Urban form, scale and design outcomes
15.2.4.1 Policy	Scale and form of development
15.2.4.2 Policy	Design of new development
<b>Chapter 16 Industrial</b>	
16.2.1 Objective	Recovery and growth
16.2.1.1 Policy	Sufficient land supply
16.2.1.2 Policy	Enable the development of industrial areas to support recovery
16.2.1.3 Policy	Range of industrial zones
16.2.1.4 Policy	Activities in industrial zones
16.2.1.5 Policy	Office development
16.2.3 Objective	Effects of industrial activities

16.2.3.2 Policy	Managing effects on the environment
16.2.3.3 Policy	Managing stormwater

## **Appendix N – Joint Witness Statement Urban Design**

Before the Independent Commissioner

Under the Resource Management Act 1991

In the matter of an application by Foodstuffs South Island Limited for the establishment and operation of a PAK'n SAVE supermarket and fuel station at 191 Main North Road, and associated car parking, vehicle access, landscaping, signage, and storm water treatment (RMA/2018/2029)

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**Joint Witness Statement: Urban Design**

1 November 2019

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- 1 This joint witness statement sets out the extent of matters agreed as at 25 October 2019 between the experts listed below with respect to urban design matters arising from RMA/2018/2029.
- 2 The expert conferencing was held at Christchurch City Council on Friday 25 October 2019.
- 3 Participants at the meeting were:  
  
David Hattam – Christchurch City Council  
  
Jennifer Dray – Christchurch City Council  
  
Andrew Burns – Foodstuffs South Island Ltd  
  
Niko Young – Foodstuffs South Island Ltd  
  
Tony Milne – Foodstuffs South Island Ltd
- 4 In preparing this statement, the expert witnesses have read and understood the Code of Conduct for Expert Witnesses as included in the Environment Court of New Zealand Practice Note 2014.
- 5 Mr Nathan Harris (Planner, Christchurch City Council) was present at the start of the meeting, to assist in the room set up, and at the end of the meeting, at the request of the experts to answer specific questions relating to policy. Mr Harris is not providing evidence with respect to urban design matters and did not provide input in relation to such matters at the conferencing.

### **Background**

- 6 An appropriate urban design assessment framework for the application should consider the provisions in the Christchurch District Plan Chapter 3 – Strategic Directions, Chapter 15 – Commercial Zone, and given the Application Site’s underlying zoning, Chapter 16 – Industrial Zone. It is acknowledged however that neither Chapters 15 or 16 are a perfect fit for the application, and that site and activity-specific consideration should be brought to bear on any assessment. There was little discussion as to the weighting that should be given to the relevant policies and matters of discretion within these Chapters when assessing the urban design matters and effects of the proposal.
- 7 David Hattam is of the opinion that Chapter 15 is most relevant and will look to this for assessment with less emphasis placed on Chapter 16. Regarding urban design outcomes, David Hattam is of the opinion that the Proposal should be considered as a centre-like activity rather than an out of zone activity. Andrew Burns noted that the close proximity of a supermarket to fine grain retail, an office and possibly a

future school (though this is speculative) is suggestive of a place with centre-like qualities.

- 8 Responding to questions around policy, Nathan Harris confirmed that he considers Objective 15.2.4 'Urban form, scale and design outcomes' and policies 15.2.4.1 'Scale and form of development' and 15.2.4.2 'Design of new development' to be relevant.
- 9 Andrew Burns considers an assessment approach that presents 'general urban design matters' informed by best practice and District Plan policy direction as relevant to the site. David Hattam suggested that the provisions in the Commercial Chapter are a good starting point for any general principles.
- 10 A proposed change to the Proposal was introduced at the start of the session, relating to the potential removal of the Commercial Local (CL) Zone from the Application Site. This is further addressed at para 12 below.
- 11 There was high level discussion regarding the appropriateness of a supermarket in this location. The coarse grain of the urban block within which the Proposal sits presents challenges regarding finer grain levels of movement. There was general discussion and acknowledgement of the importance of integration.

#### **Matters Agreed**

- 12 **CL Zone land** - removing the portion of land to the northeast from the Application Site comprising the Commercial Local Zone was not favoured by David Hattam and his position is that excluding this site will not remove the issues he has with the proposed site layout and its integration. It was agreed that the CL Zone should remain as part of the Application Site.
- 13 **Connectivity and Integration** - it was agreed that walking connections north into the CL Zone, south into the Foodstuffs Head Office site and east towards Main North Road are important.
- 14 **Connectivity to the south** - it was agreed this is desirable, but traffic related matters appear to conflict with a better aligned pedestrian path. It was agreed that the proposed southern link from Main North Road into the site is circuitous and from an urban design and landscape outcome is not the most desirous. A straighter route that avoided the crossing at the junction with Main North Road would be preferred. It was agreed that this outcome was to serve people approaching the site from the south on the street. It was also acknowledged that this may be difficult to achieve and needs to be considered alongside vehicle access and safety matters, and this will be further explored

- 15 **Connectivity to the south** - it was also agreed a pedestrian route south to Foodstuffs Head Office is important, alongside the proposed vehicle access. However, it was also acknowledged that this may be difficult to achieve and needs to be considered alongside vehicle access and safety matters, and this will be further explored.
- 16 **Connectivity to the north** – it was agreed, as a minimum a shared pedestrian and cycle link should connect north into the CL Zone from the supermarket and car park. Improvements should be considered as to how the path traverses the CL Zone. Further to this, improved pedestrian amenity and access from the proposed supermarket north to the CL Zone was considered important but that vehicle access was not required. It was agreed that this link would be reviewed to achieve a more direct alignment.
- 17 **Connectivity to the east** - it was agreed that the proposed bus stop location on Main North Road reinforces the northern-most pedestrian route between Main North Road and the supermarket as the primary link into the Site. It was discussed that further landscape enhancement and path width is required and it was agreed that this could be achieved through surface materials and planting.
- 18 Allied to 17 above, it was agreed this northern-most pedestrian link connection to the supermarket needs landscape enhancement at and around the entry to the building to give it similar status to the southern market entry.
- 19 **Cycle connections** – it was agreed these should be included and indicated in the Proposal from Northcote Road (links back to Northern Line Cycle Way) into the Site. It was unclear to what extent Abley Transportation Consultants, and Council traffic officers, had already discussed this matter.
- 20 **Lydia Street right of way** - it was agreed that traffic safety and general safety and amenity of the proposed 1.2m wide pedestrian link along the Lydia Street access way was 'just' acceptable but is subject to detailed design including lighting. David Hattam qualified this by saying that while it is acceptable now, it may not be if a non-industrial activity such as a school is developed west of the supermarket, for instance due to the likelihood of a large number of pupils legitimately using the link. It was also agreed that for the area to the west of the application site, given the Lydia Street access needs to be two-way, any widening of the footpath would result in a narrowing of proposed planting, and therefore would result in a negative effect on the amenity being provided by the planting,
- 21 **Future western links** - David Hattam stated it would be desirable to future proof a western link to a future non-industrial activity (such as a possible school). In the absence of information on the school's plans, it was agreed that this cannot be designed as part of this application. However, there was general agreement that should this development occur then the Proposal can support it through the Lydia

Street access and to a pedestrian link west from Main North Road. It was agreed that while a link via the Foodstuffs Head Office access would provide a direct route this may not be favoured by the occupiers.

- 22 **Fuel Station structure design** – Neither David Hattam nor Andrew Burns were supportive of the design of the fuel facility structure as shown on the Proposal. It was agreed that the design of the fuel facility structure should be less utilitarian and less bulky and, subject to operational requirements, should be redesigned to achieve a more 'elegant outcome'. The fuel facility at the Frankton PAK'n Save, Queenstown was cited by Tony Milne as an example of a design that is receptive to, and acceptable within the special landscape context of its setting.
- 23 **Supermarket building design and signage** - David Hattam outlined issues regarding the scale and dominance of the yellow sign and the articulation of the building facade. Andrew Burns raised similar issues including signage design and relational scale to the parent building and modulation of the eastern facade. Niko Young discussed possible options with regard to architectural relief. It was agreed that these matters are relatively easily addressed and could be resolved through design. (Note that there was no detailed discussion as to the exact look of potential changes to the design of the supermarket's eastern elevation, except to note that the yellow elements should be subservient to the overall built form.)

#### **Matters Not Agreed**

- 24 **CPTED** - it was agreed that the area to the rear of the supermarket should be gated outside of business hours to avoid concealment and entrapment risks. It was acknowledged that this was a matter raised in the CPTED Assessment within the Rough and Milne Landscape and Urban Design Report. There was no overall agreement as to the location of the gates and Niko Young agreed to supply further gate location solutions to David Hattam and Jennifer Dray. There was no overall agreement on this matter.
- 25 **Supermarket position on the Site** - for reasons of street activation, centre design and pedestrian connectivity, David Hattam suggested the position of the supermarket building on the Site should be reconsidered. Andrew Burns, Tony Milne and Niko Young acknowledged that while there are urban design benefits of a frontage closer to the street, the issue goes beyond purely urban design matters. There are operational, functional (including emergency coordination) and safety requirements that dictate the current layout of the Proposal. Tony Milne also suggested for reasons of the relationship with the residential zone to the opposite side of Main North Road, as well the character of Main North Road, the setback was appropriate. There was no overall agreement on this matter.
- 26 **Fuel Station location** - both Niko Young and Tony Milne outlined that the location of the fuel facility as shown on the Proposal has been dictated by operational

requirements – primarily fuel tanker servicing. David Hattam was not supportive of the fuel facility location. Andrew Burns observed that an alternative location might improve both the visual experience of the Site from Main North Road and its level of pedestrian engagement.

### Conclusion

27 It was agreed that a number of urban design matters can be appropriately resolved and managed through minor changes to the Proposal in combination with consent conditions. However, there are several urban design matters on which there is no overall agreement between the experts.

Dated 1 November 2019



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Andrew D. Burns



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Niko Young



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Tony D. Milne



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David Hattam



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Jennifer Dray



## **Appendix O – Joint Witness Statement Landscaping**

Before the Independent Commissioner

Under the Resource Management Act 1991

In the matter of an application by Foodstuffs South Island Limited for the establishment and operation of a PAK'nSAVE supermarket and fuel station at 191 Main North Road, and associated car parking, vehicle access, landscaping, signage, and storm water treatment (RMA/2018/2029)

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**Joint Witness Statement: Landscape**

1 November 2019

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- 1 This joint witness statement sets out the extent of matters agreed as at 25 October 2019 between the experts listed below with respect to landscape and visual matters arising from RMA/2018/2029.
- 2 The expert conferencing was held at Christchurch City Council on Friday 25 October 2019. This followed a meeting of the two experts at the office of Rough and Milne on Tuesday 22 October.
- 3 Participants at the meeting were:  
  
Jennifer Dray – Christchurch City Council  
  
Tony Milne – Foodstuffs South Island Ltd
- 4 In preparing this statement, the expert witnesses have read and understood the Code of Conduct for Expert Witnesses as included in the Environment Court of New Zealand Practice Note 2014.

### **Background**

- 5 An appropriate landscape and visual effects assessment framework for the application should consider the provisions in the Christchurch District Plan Chapter 3 – Strategic Directions, Chapter 15 – Commercial Zone, and given the Application Site’s underlying zoning, Chapter 16 – Industrial Zone. It is acknowledged however that neither Chapters 15 or 16 are a perfect fit for the application, and that site and activity-specific consideration should be brought to bear on any assessment. There was little discussion as to the weighting that should be given to the relevant policies and matters of discretion within these Chapters when assessing landscape and visual amenity matters and effects of the proposal. However, it was agreed these should provide guidance when assessing the potential landscape and visual effects of the proposal.

### **Matters Agreed**

#### Key Landscape and Visual Amenity Matters

- 6 **Use of exotic deciduous trees** - it was agreed that the use of exotic deciduous trees within the proposed car park, and in places to the perimeter of the application site will provide a better landscape and visual amenity outcome than solely a native plant palette as previously advocated by Council’s ecologist.
- 7 **Additional screening to the fuel facility** - it was agreed that visual amenity effects arising from the location of the proposed fuel facility adjacent to the Main North Road frontage of the site can be adequately mitigated through the addition of two trees to the Main North Road frontage planting. These shall be planted in a position

the provides further visual screening of the fuel facility from the users of Main North Road.

- 8 Following 7 above, it was agreed that the design of the fuel facility structure could be less utilitarian and subject to operational requirements, should be redesigned. The fuel facility at the Frankton Pak n Save, Queenstown was cited as an example of a design that is receptive to, and acceptable within the context of its setting.
- 9 **Additional tree planting to front of supermarket** - it was agreed that additional tree planting to the front (east elevation) of the supermarket would provide a more desirous landscape and amenity outcome. Such trees would provide visual way finding clues and reinforce pedestrian movement through the application site. Tony Milne offered that there was a design solution available within the current layout of the site. It was agreed the planting to front of the supermarket should be reviewed.
- 10 **Lydia Street access planting** - In regard to the mitigation provided by the proposed planting adjacent to the northern boundary shared with residential dwellings, particularly those at 21 to 15 Northcote Road it was agreed that further information shall be included on the Resource Consent application landscape plan. Tony Milne suggested the tree species *Alnus joreullensis* would be an appropriate tree to afford mitigation of effects along this boundary. Additionally, Jennifer Dray suggested a condition of consent in relation to the planting and it was agreed this would be appropriate.

#### Key CPTED Matters

- 11 **Lighting** - it was agreed that lighting standards to the main car park area and to the rear of the supermarket building can be adequately provided for by way of a condition of consent.

#### General Urban Design Matters (also included within UD JWS)

- 12 **Connectivity** - it was agreed that in the context of its setting, general walkability and connectivity of the application site to the surrounding streets was important.
- 13 **Connectivity to the East (Main North Road)** Considering the proposed bus stop location on Main North Road, it was agreed that with further landscape enhancement, the proposed northern pedestrian route between Main North Road and the supermarket should function as the primary pedestrian link into the application site from Main North Road. It was agreed that this could be achieved by way of surface materials and planting.
- 14 Allied to 15 above, it was agreed this northern-most pedestrian link connection to the supermarket needs landscape enhancement at and around the entry to the building to give it similar status to the southern market entry.

- 15 **Connectivity to the South** - it was agreed this is desirable, but traffic related matters appear to conflict with a better aligned pedestrian path. It was agreed that the proposed southern link from Main North Road into the site is circuitous and from an urban design and landscape outcome is not the most desirable. A straighter route that avoided the crossing at the junction with Main North Road would be preferred. It was also acknowledged that given the position of the traffic experts, that for traffic and safety reasons this may be difficult to achieve.
- 16 **Lydia Street Accessway** - it was agreed that traffic safety, and general safety and amenity of the 1.2m wide path along Lydia Street access way was, in the context of this resource consent application i.e. the function of the supermarket, just acceptable. It was also agreed, that given the Lydia Street access way needs to be two-way, any widening of the foot path would result in a narrowing of the proposed garden and therefore would result in a negative effect on the amenity being provided by the planting.
- 17 **Connectivity to the North** - it was agreed that some minor realignment of the paths between the north east corner of the proposed supermarket and the Commercial Local centre would result in a more direct and legible pedestrian route. It was also agreed that if the vehicle connection with the Commercial Local centre was not required then the legibility and safety of pedestrian circulation within this area of the application site would be improved.
- 18 **Cycle connections** - it was agreed these should be included and indicated in the Proposal from Northcote Road (links back to Northern Line Cycle Way) into the Site. It was unclear to what extent Abley Transportation Consultants, and Council traffic officers, had already discussed this matter.

#### **Matters Disagreed**

- 19 **Additional landscape mitigation within south west corner of car park** - Jennifer Dray considers that additional landscape mitigation is required in the southern portion of car park adjoining fuel facility, particularly along the pedestrian path adjoining the left turning lane onto main North Road (where drop down bollards are located). Primarily, concerns here relate to footpath width, legibility and safety, and visual amenity from the main road entrance. Tony Milne agreed that the amenity outcome within this area of the application site could be improved. However, he outlined that several operational and circulation requirements have dictated the proposed site design within this area. There was no overall agreement in relation to this matter.
- 20 **Fuel facility location** - Jennifer Dray suggested locating the fuel facility elsewhere within the site or moving it northwards to provide room for more direct pedestrian connection from Main North Road mid-way through the car park area. Tony Milne outlined that the location of the fuel facility as shown on the application plans has

been dictated by operational requirements – primarily fuel tanker servicing. There was no general agreement over its location, but it was agreed that an acceptable landscape and amenity outcome would result following the matters agreed on in 7 and 8 above.

- 21 **CPTED** - it was agreed that the area to the rear of the supermarket should be gated outside of business hours to avoid concealment and entrapment risks. It was acknowledged that this was a matter raised in the CPTED Assessment within the Rough and Milne Landscape and Urban Design Report. There was no overall agreement as to the location of the gates and Niko Young agreed to supply further gate location solutions to David Hattam and Jennifer Dray. There was no overall agreement on this matter.
- 22 **Northern boundary amenity** – following item 10 above, Jennifer Dray suggested a reduction in the size of the sign on the northern elevation of the building along with trellis or similar, to the existing boundary fences, could also be considered to assist in the mitigation of visual effects on these adjoining properties. Regarding building bulk and location, it was agreed that the planting would provide adequate mitigation in regard to building bulk and location. Regarding the size of the sign, there was no overall agreement on this matter.

### Conclusion

- 23 Regarding landscape and visual amenity effects, it was agreed that through some minor changes to the landscape plan in combination with consent conditions, these can be appropriately managed, and the proposal is acceptable. Therefore, it is agreed RMA/2018/2029 can be supported on landscape and visual amenity grounds.

Dated 1 November 2019



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Tony D. Milne



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Jennifer Dray

## **Appendix P – Applicant’s Proposed Transport Conditions**

## Draft Transport Conditions

1. Post-opening monitoring of the access arrangements to and from the site shall be undertaken by the Consent Holder. This assessment shall:
  - a. be undertaken by a suitably qualified traffic engineer, agreed by both the Consent Holder and the Christchurch City Council;
  - b. assess the operation of the internal roundabout adjacent to the Main North Road signalised access to determine the extent (if any) of queuing and resultant safety risks for vehicles entering the site via the signalised access on Main North Road;
  - c. assess traffic accessing the supermarket site via the Northcote Road Oil Changers car park access to determine the extent (if any) of conflict between westbound vehicles entering the supermarket via this access and westbound vehicles merging from two lanes into one adjacent to this access, and any resultant loss of capacity on Northcote Road in that regard.
  - d. be undertaken by the Consent Holder 3 months, 2 years and 4 years after the supermarket commences operation;
  - e. be submitted to the Head of Regulatory Compliance of Christchurch City Council within one month of the assessment being completed. Council shall confirm acceptance within 1 week of receipt as to whether the assessment satisfies this condition; and
  - f. For the purpose of this condition the Consent Holder shall notify the Head of Regulatory Compliance of Christchurch City Council of the date of commencement of operation of the supermarket.
2. The right turn out manoeuvre from Lydia Street into Northcote Road shall be removed/prevented prior to the supermarket becoming operational.
3. A barrier arm shall be installed on the southern approach of the roundabout internal to the site as a physical means of restricting vehicle movements between the Foodstuffs Head Office car parking area and the supermarket car parking areas.
4. In addition to the barrier arm required by Condition 3, the Consent Holder shall implement management controls to restrict vehicle movements from the Head Office carpark into the supermarket car parking areas via the internal roundabout for any time of day, if the post-opening monitoring (Condition 1) identifies a safety risk associated with queuing at the roundabout impeding access from Main North Road.
5. The Northcote Road median island shall be extended to the west by a sufficient length to restrict right turn in and right turn out manoeuvres at the Northcote Road Oil Changers access.
6. No heavy vehicle deliveries shall occur between the evening peak hours of 3pm through 6pm on weekdays.
7. All heavy delivery and servicing vehicles shall access the site via Lydia Street during supermarket operating hours.
8. Semi-trailer and fuel tanker deliveries shall be restricted to turning right from Northcote Road into Lydia Street.
9. No fuel tanker deliveries shall occur during supermarket operating hours.
10. The Consent Holder shall develop a travel plan for supermarket staff to provide staff with information about their travel choices, including public transport, walking and cycling; and parking management, including containing staff vehicle parking within the site. The travel plan shall be supplied to Council for comment.

11. The Consent Holder shall submit a Demolition Traffic Management Plan (DTMP) to Council for certification at least 10 working days prior to the commencement of demolition of the existing buildings on the site. The DTMP shall include measures for the control of vehicle and pedestrian movements, including full or partial road closures, to ensure the safety of the public, and the continued safe and effective operation of the road network.
12. The Consent Holder shall submit a Construction Traffic Management Plan (CTMP) to Council for certification prior to the commencement of construction on the site. The CTMP shall include measures for the control of vehicle and pedestrian movements, including full or partial road closures, to ensure the safety of the public, and the continued safe and effective operation of the road network.
13. All proposed demolition and construction works shall be carried out in accordance with the approved Traffic Management Plans (DTMP and CTMP). The Consent Holder shall prepare each TMP and submit these to Council through the TMP portal on <http://tmpforchch.co.nz/submit-a-tmp/>, at least 10 working days prior to the commencement of work associated with this consent. The TMP shall identify the nature and extent of temporary traffic management and how all road users will be managed by the use of temporary traffic management measures and comply with the NZTA Code of Practice for Temporary Traffic Management (CoPTTM). The TMP shall also identify the provision of on-site parking for demolition or construction staff. Activities on any public road should be planned so as to cause as little disruption, peak traffic delay or inconvenience to road users as possible without compromising safety.

**Advice Note**

The Consent Holder is advised that the approval of Council's Asset & Network Planning Team is required prior to the construction of the new signalised access and associated on-street changes that will occur within the road reserve. Any such works within the road reserve will be at the Consent Holder's expense.

## Appendix Q – Quality Transport Planning Peer Review

# Papanui PAK'n Save

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## Peer Review of Traffic Modelling

November 2019

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### Document Issue Record

Version No	Prepared By	Description	Date
00a	John Falconer	First issue.	7 November 2019

### Document Verification

Role	Name	Signature	Date
Preparation	John Falconer		7 November 2019
Reviewer			
Approval	John Falconer		7 November 2019

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## Appendices

### Appendix A – Review Register

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## 1 Introduction and Peer Review Scope

### 1.1 Background

- 1.1.1 QTP have been engaged collectively by Foodstuffs (South Island) Properties Ltd (**FSIL**) and Christchurch City Council (**CCC**) to undertake a Peer Review of the transportation modelling presented in the Integrated Transport Assessment (**ITA**) included<sup>1</sup> within the land use consent application<sup>2</sup> to establish a PAK'nSAVE supermarket and self-service fuel station on the application site at 171 Main North Road (Christchurch).
- 1.1.2 It is proposed that vehicle access to the site will be altered, including the addition of a signalised intersection along Main North Road between the intersection with Cranford Street and Northcote Road.
- 1.1.3 The transportation modelling presented in the ITA is sourced from an s-Paramics model developed specifically to support the Application. The primary purpose of the modelling is to indicate the traffic effects associated with the proposed development during a weekday evening peak period (which has been identified as the most critical periods in terms of network performance). This is to inform the Assessment of Effects in the Application.
- 1.1.4 I understand that prior to this review; transport experts representing FSIL have been working collaboratively with CCC Transport Team members to address initial RFI items raised relating to transport modelling. The agreed changes in methodology and reporting are addressed implicitly in an updated ITA (subject to this review).
- 1.1.5 The future year demands have been extracted from Council's CAST model by Council staff and are agreed between the Applicant and Council. The choice of modelling platform s-Paramics informed by CAST is also agreed between the Applicant and Council. Due to this agreement, further consideration of these items is excluded from the peer review scope.
- 1.1.6 As a result of recent transport modelling conferencing<sup>3</sup> between the Applicant, CCC, CTOC and NZTA's experts, the transportation modelling has been revisited and a new Technical Note prepared that supersedes the contents of section 8 (Transport Modelling Assessment) of the ITA.

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<sup>1</sup> As Appendix F of the Application document.

<sup>2</sup> The Pre-hearing Application and ITA as publicly notified can be found at: <https://www.ccc.govt.nz/the-council/consultations-and-submissions/haveyoursay/show/256>

<sup>3</sup> October 2019

## 1.2 Information Provided for Review

1.2.1 This review is based primarily on the following information provided by FSIL:

- A copy of the ITA as per the notified application (Appendix F)<sup>4</sup>, dated 18 July 2019 (hereafter referred to as the **ITA**).
- Revised section 8 of the ITA technical note which is consistent with the post-conferencing scenarios as agreed between all parties<sup>5</sup>, dated 25 October 2019 (hereafter referred to as the **Technical Note**).
- Paramics model files<sup>6</sup>, dated 25 October 2019. This includes base year and future year (2021 with and without development and 2031 with and without development) s-Paramics modelling files (five scenarios including base year) which are consistent with the post-conferencing scenarios to be presented in evidence as agreed between all parties. The raw model outputs were not provided (to keep file sizes manageable).
- A set of engineering drawings accompanying the application<sup>7</sup>, dated 23 August 2019 (hereafter referred to as the **Site Plan**).

## 1.3 Other Information Referred to in Review

1.3.1 The Peer Review has been undertaken in accordance with Engineering New Zealand's Practice Note 2: Peer Review (**ENZPN**). The ENZPN usefully identifies key steps in the peer review process and what should be covered in reporting. However the specialised nature of traffic model build and Peer Review does not fit the 'types' of peer review described in the ENZPN. In this regard, the (draft) Peer Review Process Technical Note prepared by the New Zealand Modelling User Group (**NZMUGs**) is more pertinent and the peer review has been conducted in accordance with the concluding points of that document.

1.3.2 This includes the “review register” in Appendix A, which is set up to include all issue raised by a Reviewer, the response of the Modeller and the resolution which may include acceptance of the risk or professional disagreement.

1.3.3 NZTA Transport Model Development Guidelines (**TMDG**) have also been used to provide guidance in relation to comparisons between modelled and observed data.

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<sup>4</sup> 'App F \_ Integrated Transport Assessment \_w.updated & signed safety audit 17.7.19.pdf'

<sup>5</sup> 'Post-Conferencing Transport Modelling Assessment Technical Note.pdf'

<sup>6</sup> 'Papanui PnS Final Paramics Models 23-10-2019.zip'

<sup>7</sup> 'RMA-2018-2029-Appendix-B-Architectural-Plans.PDF'

## 1.4 Scope of Peer Review

1.4.1 The agreed Peer Review brief limits the scope to specific components, summarised below:

1. **Calibration and Validation** – Checks that the models are suitably calibrated and validated in accordance with NZ Transport Agency's Transport Model Development Guidelines (TMDG);
2. **Fitness for Purpose** – Confirmation whether (or not) the models are fit-for-purpose for the primary purpose of informing an Assessment of Environmental Effects of the nature and scale of the Application under the RMA;
3. **Model Limitations** – Note any limitations or gaps in the modelling undertaken that might otherwise be reasonably expected to be included within the ITA;
4. **Completeness of Documentation** – Checks that the outputs presented in the ITA (and technical note replacing section 8 of the ITA) are logical, robust and can be relied upon by a decision maker under the RMA (acknowledging any limitations or gaps identified above).

1.4.2 The remaining sections of this review specifically address each of the scope components above. Any risks or matters potentially requiring resolution are identified in each case, and also summarised in the Review Register in **Appendix A**.

## 2 Calibration and Validation

2.1 The setup and calibration of the Paramics model is documented in Appendix A of the ITA. No changes to this have been made as a result of conferencing.

2.2 A model base year of 2018 has been established and comparisons have been made against surveyed traffic count data and travel times.

2.3 The comments below relate to various sections of Appendix A of the ITA using the same sub-headings (in order).

### 2.4 Model Network and Zone System

2.4.1 It is noted (in ITA Figure A1.1) that the 2018 base model consists of 13 zones. This is inconsistent with the future year models, which have 16 zones (as per ITA Figure A1.5). The 3 extra zones in the future year models are:

- Zone 14 – Winters Road and Fraser Street Residential Area (adjacent to Main North Road and Cranford intersection).
- Zone 15 – Meadow Street and Shearer Avenue area adjacent to Main North Road south of Cranford Street (effectively proposed development of the Cranford Basin).
- Zone 16 – Existing retail activity at the southwest corner of the Main North/QEII/Northcote intersection.

2.4.2 It is highly unusual to have different zone systems in base and future years. There is a risk that the additional zones may result in different traffic patterns or effects, even if the underlying land-use assumptions and overall traffic generation remains the same. A comparison of future traffic networks with the calibrated base then becomes problematic.

2.4.3 Multiple 'car-parks' (effectively 'floating' sub-zones) have been used for zones 11, 12, 13 and 15<sup>8</sup>. This is understandable for zones 11 and 12 (the development site area), but not for zones 13 and 15, which are residential areas. It would therefore be useful to understand the rationale behind this approach, and why this was considered to be better than other alternatives (e.g. increasing zone resolution and/or network detail, especially if it is a proxy for Cranford Basin link).

2.4.4 In this particular model application, the primary purpose of the 2018 base year model is to calibrate key network elements and vehicle characteristics based on 'known' traffic volumes and conditions. Once these have been calibrated and applied to future years, the base network is effectively discarded and serves no further purpose in the assessment of environmental effects. Therefore, the risk to the Client associated with the 2018 base zone discrepancies described above is considered to be low.

2.4.5 Documentation would however assist with understanding why different zone structures were adopted and reassurance that that this will not significantly impact on the assessment.

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<sup>8</sup> Zone 15 is included in future years only.

2.4.6 Based on the above, the following items have been added to the Review Register in Appendix A:

#	Issues Raised – Model Network and Zone System	Level of Client Risk
1	Inconsistent traffic zones between 2018 base and future models. Justification or further explanation is recommended.	Low
2	Further explanation of the rationale for applying car-parks to zones 13 and 15 is recommended, including potential advantages and limitations of this approach.	Low

2.5 **Base Year Demands**

2.5.1 The documentation describes a manual method for establishing trip distribution patterns. This method appears to be very similar to how the matrix estimation facility with Paramics works. It would therefore be useful to know why the algorithm based matrix estimation procedure was not used (i.e. what specific issues required a manual method to overcome), or even better, why initial demands from CAST were not used (given that this approach has been adopted for future years, it would make sense for the base as well).

2.5.2 As mentioned earlier in paragraph 2.4.4, for the purpose of model calibration (which is the sole purpose of the 2018 Base model), the underlying trip patterns are not particularly important (noting very limited route choice within this particular model) as long as the turning movement flows and delays at each intersection are reasonably represented (which appears to be the case here).

2.5.3 Therefore the risk to the Client is relatively low, however without improved documentation, the level of risk *perceived* to a reader may be of concern.

#	Issue Raised – Base Year Demands	Level of Client Risk
3	A 'manual' trip matrix estimation procedure was adopted. Justification or further explanation required why initial demands from CAST (as adopted for future year models) were not used in conjunction with matrix estimation where required to match observed counts.	Low

2.6 **2018 Base Year Calibration**

2.6.1 It is noted that calibration was required for the following elements.

- Preloading and queuing
- Traffic signal timings (informed by SCATS data)
- Reverse priority (suitably resolved by using 'yellow box junctions')
- Link speed limits
- Mean headway between vehicles
- Main North Road south approach to Cranford Street network coding

2.6.2 It is apparent that careful consideration was given to each parameter to ensure observed conditions are reflected. All of these adjustments appear to be necessary and are within

reasonable limits.

## 2.7 Turning Movements at Key Intersections

2.7.1 Comparisons of modelled and observed turning movements at three intersections (Main North/Northcote/QEII, Main North/Cranford and Main North/Vagues) have been provided.

2.7.2 There appears to be a reporting error in Tables A1.2 and A1.3 for the intersection totals, where the column totals are either incorrect and or out of sync with the data above.

2.7.3 Values reported in the tables are summarised by three periods (4-5pm, 5-6pm and combined as a total 4-6pm). The GEH values for the two hour period should be converted to hourly equivalents (this has not been done); therefore the values reported for 4-6pm are effectively overstated and not suitable for comparison with TMDG thresholds.

2.7.4 The reporting does not include any assessment made against the relevant criteria in the TMDG (as is usual practice). In this particular case, criteria for model Type F (Small area with limited route choice/corridor assessment) would apply. The guidelines state that the following comparisons are generally expected:

- Individual Tuning/Link GEH
- XY Scatter Plots
- Individual Turning Count Bands<sup>9</sup>

2.7.5 I have used the information provided in the ITA to make the above comparisons. Results are set out below, where results meeting the target criteria are in **green** and those that are just under are in **orange**:

**Table 2-1: GEH Comparison**

Measure	Target Criteria	Achieved 4-5pm	Achieved 5-6pm	Achieved 4-6pm
GEH < 5 (% Turns)	> 95%	95%	92%	96%
GEH < 7 (% Turns)	> 100%	100%	96%	96%
GEH <10 (% Turns)	> 100%	100%	100%	100%

**Table 2-2: Individual Turning Count Bands**

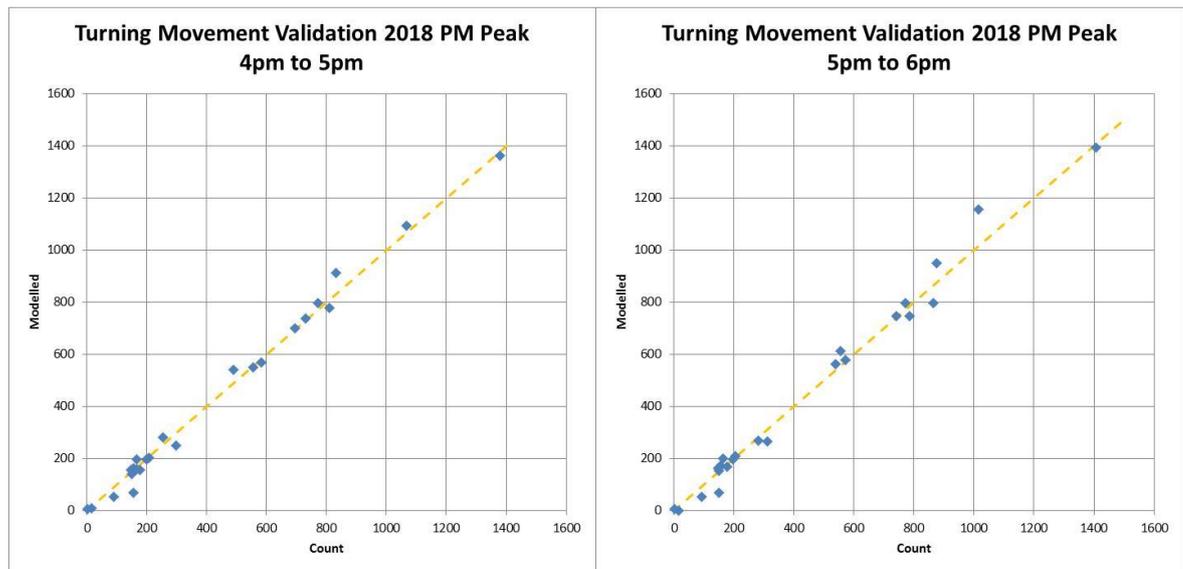
Measure	Target Criteria	Achieved 4-5pm	Achieved 5-6pm	Achieved 4-6pm
<400 (50vph)	> 95%	93%	93%	93%
400-2000 (12.5%)	> 95%	100%	90%	100%
>2000 (250vph)	> 95%	100%	100%	100%

**Table 2-3: XY Scatter Plot (Summary)**

Measure	Target Criteria	Achieved 4-5pm	Achieved 5-6pm	Achieved 4-6pm
R <sup>2</sup>	> 0.95	0.99	0.99	0.99
Line of Best Fit	y= 0.97x – 1.03x	y = 0.99x	y = 0.98x	y = 0.99x

<sup>9</sup> TMDG state these are potentially useful rather than expected

**Figure 2-1: XY Scatter Plot (Data Points)**



2.7.6 From these results, I conclude the following

- A very high level of correlation is achieved between modelled and observed traffic flows at the turning movement level.
- The relevant TDMG are generally met. Where these criteria are not strictly met, they are very close (and relate to just one or two turning movements at Main North Vagues Road).
- The ITA identifies and comments on the Vagues Road movements and I am satisfied with this explanation (and was not particularly concerned about this movement anyway).

2.7.7 In my opinion, the TDMG criteria are extremely ambitious; the target tolerances can often exceed natural variations that occur in traffic counts between adjacent intersections.

2.7.8 I therefore consider that the level of validation/calibration achieved with respect to turning movements is at the upper end of what can practically be achieved by any model.

2.7.9 So while I am more than satisfied with this modelling outcome, I note the following reporting related issues that have been added to the Review Register in Appendix A:

#	Issues Raised -Turning Movements at Key Intersections	Level of Client Risk
4	Reporting error in Tables A1.2 and A1.3 for the intersection totals, where the column totals are either incorrect and or out of sync with the row data above.	High
5	GEH values reported for 4pm to 6pm are incorrect because they have not been converted to hourly equivalents.	Medium
6	Comparisons not made with relevant TDMG criteria in ITA (however, this has been resolved indirectly as part of this peer review).	Low

**2.8 Travel Time**

- 2.8.1 Comparisons of modelled and observed travel times along six main corridor routes through the model area have been provided.
- 2.8.2 The reporting does not include any assessment made against the relevant criteria in the TMDG (as is usual practice).
- 2.8.3 I have therefore made this comparison below. In this particular case, criteria for model Type F (Small area with limited route choice/corridor assessment) have been adopted.
- 2.8.4 The guidelines state that the following comparisons are generally expected:
  - More than 90% of routes should be within 15% or 1 minute (if higher)
  - All routes should be within 25% or 1.5 minutes (if higher)
  - Journey time vs. distance graphs.
- 2.8.5 All reported routes are within 15% of observed, except the East to West route, where the model is 30% faster than observed but the difference is less than 1 minute. A reasonable explanation has also been provided in ITA Table A1.4 why this might be the case.
- 2.8.6 Because the model area is rather compact, journey time vs. distance graphs (while nice to have) are not strictly necessary in this case. It would however be very useful if each route distance (path length) could be included in ITA Table A1.4 so that the vehicle speeds can be inferred (or also reported).
- 2.8.7 I agree with the ITA conclusion that “...the model generally reflects existing speed conditions on the major links”. Additionally, I do not think that the model is significantly different to the observed data on any particular route, and I am satisfied that the 2018 base model is not consistently faster or slower than observed conditions (which indicates that a reasonable level of calibration has been achieved).

#	Issue Raised – Travel Time	Level of Client Risk
7	Journey time vs. distance graphs have not been provided. As an alternative to providing these, it would be very useful if each route distance (path length) could be included in ITA Table A1.4 so that the vehicle speeds can be inferred (or ideally also reported)	Medium

**2.9 Future 2021 and 2031 Models**

- 2.9.1 There are very few details (other than in the introduction to the revised section 8 of the ITA) about how CAST demands were applied to Paramics. It is simply mentioned that “the CAST model was used to inform the future year demand scenarios.” This statement has some ambiguity (e.g. whether any adjustments were made, other than altering trip generation for the proposed supermarket?).
- 2.9.2 Inspection of the Paramics demand matrices indicate that demands at some external locations can vary significantly between the base and development networks. Some of

these differences imply wider network route changes beyond the Paramics model area (e.g. an increase in trips originating from QEII Drive with a corresponding decrease from Main North Road south external). Such changes are realistic and most likely reflect alternative route choice available in CAST to avoid congestion on Main North Road (with development). However, it also implies that there may be additional effects outside the Paramics model area that are not currently being captured in the assessment of effects (e.g. trips re-routing from Main North Road to QEII Drive must travel additional distance not currently picked up in the assessment, and this missing 'cost' is likely to be similar to travel time on the congested Main North Road route).

- 2.9.3 There also appears to be an overall reduction in vehicle trips at external locations for the 'with development' networks. At 2021 there are approximately 100 less two-way trips and at 2031 there are approximately 50 less two-way trips crossing the model boundary in the 'with development' network. This indicates the number of vehicles that effectively avoid<sup>10</sup> the Paramics model area due to increased congestion.
- 2.9.4 Again, this may be a realistic model response. But consequently, performance of the 'with development' network relative to the Base network may appear to be more favourable than it would if the 'missing' diverted traffic was also included in the assessment.
- 2.9.5 This could possibly be addressed by normalising the existing results, so that they reflect the same vehicle trip totals (with the only difference being the 20% primary trip generation associated with the proposed development).

#	Issue Raised – 2021 and 2031 Models	Level of Client Risk
8	From the reporting in the revised section 8 of the ITA and Appendix A of the ITA, very few details are provided about how CAST demands were translated into Paramics and whether any additional adjustments were required (other than altering trip generation for the supermarket). Further clarification through reporting would assist with understanding. It currently appears that the adopted methodology results in additional traffic effects outside the Paramics model area that are not currently being captured in the assessment of effects.	Medium
9	There are some significant differences between the Base and with development network at the model external boundary, with a net reduction of traffic in the 'with development' network. This implies that some traffic is being pushed out beyond the Paramics model area and the effects of this are not captured. Normalising the current outputs to take this into account is recommended.	Medium

<sup>10</sup> Most likely through reassignment in CAST

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### 3 Fitness for Purpose

- 3.1 The TMDG notes that a model that does not meet the target levels may still be suitable for application if the discrepancies are acceptable due to known, noted, and accepted issues (i.e. observed data limitations) and any larger discrepancies are concentrated away from the areas of most importance to the appraisal. Conversely, a model which passes the suggested acceptability levels but has significant discrepancies in key areas may be unacceptable.
- 3.2 Whether a model is “suitably” calibrated or not is invariably be a subjective decision based on the intended model purpose and implications on the level of risk in using model outputs resulting from any constraints or limitations (noting that some of these are covered in the following section 4).
- 3.3 Based on the adopted modelling methodology and confirmation that the model has been calibrated and validated to a high standard, I am satisfied that the Paramics model is in principle<sup>11</sup> fit-for-purpose for informing an Assessment of Environmental Effects of the nature and scale of the Application under the RMA.

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<sup>11</sup> It is important to note that while a model can be deemed fit for purpose, the actual effectiveness of the model is highly dependent on how the model is applied in practice.

## 4 Model Limitations

- 4.1 It is important to note that while the model has been deemed fit for purpose, the effectiveness of the model is highly dependent on how the model is actually applied.
- 4.2 In the context of this assessment, a potential limitation is that delays are based on sets of predefined 'paths'. This can be problematic in some situations. If the path is too short, then it might not pick up the full extent of queuing and delay. Conversely, if the path is too long, then it may not pick up all potential sources of traffic and effectively have a reduced or skewed sample. A trade-off is therefore required, which requires good judgment by the modeller.
- 4.3 Queue lengths have not been observed or validated in the model. TDMG discussed difficulty of this (and defining the queue in general). I am more comfortable with delay (as adopted in the current assessment) being the preferred indicator for congestion and network performance.
- 4.4 No weekend period model has been prepared. While the weekday evening peak has been determined to be the most critical period, that should not necessarily imply that adverse traffic effects won't occur during weekends given the high level of traffic and different patterns. This is also true for the morning peak, however it is likely to be less critical than the weekend period.
- 4.5 Based on the adopted methodology of using CAST to estimate future traffic patterns, there appears to be potential wider network effects that are not reflected within the Paramics model (as described in section 2.9). A proposed work around to address this has been recommended in that section.
- 4.6 The Paramics model used static signal timings whereas in reality these are dynamically controlled using SCATS. This may result in reduced efficiency indicated by the model.
- 4.7 Similarly, complex human behaviour related to vehicle following, gap acceptance and lane choice is modelled using a relatively few model parameters. These simplifications of reality may also result in reduced efficiency indicated by the model.
- 4.8 The model does not necessarily provide an accurate prediction of what might occur in the future (nor does it need to), but rather provides an objective indication of relative effects based on very specific assumptions agreed for very specific scenarios.

## 5 Completeness of Documentation

- 5.1 Section 2 of this review (Calibration and Validation) has identified several potential issues relating specifically to documentation of Appendix A of the ITA. These will not be repeated here (noting that they are also included in the Review Register in Appendix A).
- 5.2 This section checks that the outputs presented in the ITA and Technical Note are logical, robust and can be relied upon by a decision maker under the RMA (acknowledging any limitations or gaps identified in the preceding section 4).
- 5.3 The comments below relate to various sections of the Technical Note using the same sub-headings.
- 5.4 **Traffic Signal Optimisation**
- 5.4.1 The ITA indicates that the proposed development is dependent on a revised layout of Main North/Northcote/QEII intersection (with separate phases for north and south approaches with remarked lanes allowing dual line right turn on the south approach).
- 5.4.2 It is mentioned in the ITA that “*Preliminary tracking shows that the two vehicles can turn side by side with adequate clearance (refer to Appendix B to the ITA). However, it is noted that tracking was undertaken on an aerial image and that it should be undertaken on a topography survey for accurate results*”.
- 5.4.3 Given how critical this single issue is, I recommend that tracking is redone on a suitable georeferenced base.
- 5.5 **2018 Base Year**
- 5.5.1 It would be useful if Table 1.2 of the Technical Note included distance information so that speeds can be inferred (or implied average speeds added to the table). The reported average excess travel times do however appear to be intuitively sensible.
- 5.5.2 Checks have been made against the latest CAST (v18) 2018 network, and reported traffic flows are generally consistent.
- 5.6 **2020 Base Year**
- 5.6.1 Section 1 (a) of the technical note indicates that a key modelling assumption arising from the conferencing is that the 2021 and 2031 permitted baseline includes traffic volumes which are consistent with the existing Toll operations on the 2 Lydia Street site (which is consistent with the current industrial zoning).
- 5.6.2 The 2020 Base demands for zone 10 (2 Lydia Street site) has zero modelled trips. It appears that the pre-conferencing assumption that the site has been vacated and construction of a college (referred to in section 3.7 of the ITA) has been retained instead of adopting the revised permitted baseline agreed during conferencing.
- 5.6.3 The 2031 Base year however appears to reflect the baseline agreed during conferencing.

## 5.7 2021 with Development

- 5.7.1 Figures 1.3 and 1.4 of the Technical Note have been checked in detail and appear to be accurate and reasonable on all links that are common to the Base and Development networks.
- 5.7.2 It is however noted that the increased development traffic is not displayed on the internal development links in Figure 1.4. This could be confusing for readers (e.g. decision maker under the RMA) because at the bandwidth scale shown, this 'missing' traffic is significant, noting that the relevant values are indicated in Table 1.10 of the Technical Note.
- 5.7.3 The peak hour<sup>12</sup> trip matrix demand associated with proposed supermarket (zones 12) is 411 vehicle trips to the site and 417 from the site resulting in 828 trips per hour. This is less than the 870 (or 876 with fuel) trips (2way) set out in Table 7.1 (Trip Generation) of the ITA.

## 5.8 2031 with Development

- 5.8.1 Similar to Figure 1.4 of the Technical Note, it is noted that the increased development traffic is not displayed on the internal development links in Figure 1.8. This could be confusing for readers (e.g. decision maker under the RMA) because at the bandwidth scale shown, this 'missing' traffic is significant (noting that the values indicated in Table 1.11 of the Technical Note).
- 5.8.2 The peak hour trip matrix demand associated with proposed supermarket (zones 12) is 413 vehicle trips to the site and 420 from the site resulting in 833 trips. This is less than the 870 (or 876 with fuel) trips set out in Table 7.1 (Trip Generation) of the ITA.

## 5.9 Intersection and Travel time Comparisons

- 5.9.1 Many of the results presented appear illogical. With development, there is effectively a 6% increase in vehicle trips on the modelled network and an additional set of traffic signals to traverse, but yet the reported results indicate (in most cases) that this performs better than the base.
- 5.9.2 It can easily be demonstrated that introducing mid-block traffic signals (without any other changes) would result in increased travel time, unless they are perfectly coordinated (which is seldom possible in two directions), in which case travel time would remain similar, but not reduce.
- 5.9.3 Similarly, adding more traffic locally (all else remaining the same) would result in similar or increased travel times, but not a reduction. Therefore the current results imply that either a 'fair' comparison is not being made, or that there may be errors in extracting the model outputs (or possibly both).
- 5.9.4 I've checked network coding and can confirm that this appears to be generally consistent between the base and development networks (with only relatively minor optimisation adjustments noted at traffic signals).
- 5.9.5 There does however appear to be some inconsistencies in the path files used to compile

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<sup>12</sup> Note that a flat traffic profile has been adopted for the supermarket (zone 12), so trips leaving the supermarket have a constant flow 'peak' rate throughout the entire modelled 2 hour modelled PM peak.

delay. The differences appear to be significant. For example:

- 'Main N QEII E' – where Base starts at node 75 and with Development at node 72 (approximately 330m shorter than the base).
- 'Main N QEII S1' – where Base starts at node 59 and with Development at node 113 (approximately 40m shorter than the base).
- 'Main N QEII S2' – where Base starts at node 60 and with Development at node 61 (approximately 26m shorter than the base).
- 'CranfordMainN N' – where Base starts at node 41 and with Development at node 51 (approximately 200m longer than the base).

5.9.6 It is therefore recommended that the path files are updated to be fully consistent and results re-extracted.

5.9.7 Other items identified earlier in this review (e.g. some traffic re-routing to avoid the Paramics study area and modelled development demand being less than the trip generation estimated in the ITA) may also be unintentionally contributing to a skewed comparison in favour of the propose development.

5.9.8 It is reasonable to expect that traffic effects with development might be similar to the base, but intuitively they should not result in an improvement (as currently indicated). Therefore, any model outputs that indicate an improvement over the base will need to have a robust explanation as to how this is possible.

5.9.9 Table 1.5 of the Technical Note has a typo (digit missing) for the 2021 base flow from Main North Road (South approach).

5.9.10 Tables 1.5 to 1.8 of the Technical Note are summarised at the approach level rather than the movement level (as provided in Tables 1.3 and 1.4). It is therefore difficult to understand other possible reasons for the unintuitive outputs. It is recommended that Tables 1.5 to 1.8 are expanded to the movement level.

## 5.10 **New signalised Main North Road access**

5.10.1 Table 1.11 of the Technical Note indicates an average delay of 60 seconds for the Main South Road south approach through (northbound) movement at the new access intersection. However, this does not seem to reconcile with Table 1.9 where the northbound delay on Main North Road to the north is indicated to be 111 seconds quicker with development, and Cranford Street is only 3 seconds more with development. Some signal optimisation and coordination is acknowledged, but this result is unintuitive and therefore further explanation would be useful.

## 5.11 **Vehicle Travel Totals**

5.11.1 Table 1.13 in the Technical Note provides a useful summary of total travel within the model area (excluding traffic accessing the development).

5.11.2 It is noted (and understood) that the total non-development vehicle trips decrease with the addition of development traffic (due to pass-by and diverted components). It would therefore be useful to normalise the results to understand the potential effects on an average per vehicle basis.

5.12 **Summary of Modelled Effects of Proposal**

- 5.12.1 The summary provided a good explanation of the key outcomes of the modelling.
- 5.12.2 Some of these outcomes may however be subject to change depending on further investigation and possible resolution of matters described above.
- 5.12.3 I note the following reporting related issues that have been added to the Review Register in Appendix A:

#	Issues Raised – Completeness of Documentation	Level of Client Risk
10	It is recommended that vehicle tracking for two HCVs simultaneously turning right from Main North Road to QEII Drive is redone on a proper georeferenced base.	High
11	It would be useful if Table 1.2 of the Technical Note included distance information so that speeds can be inferred (or implied average speeds added to the table)	Medium
12	It appears that the pre-conferencing assumption that the site has been vacated and construction of a college (referred to in section 3.7 of the ITA) has been retained instead of adopting the revised permitted baseline agreed during conferencing.	High
13	It is however noted that the increased development traffic is not displayed on the internal development links in Figures 1.4 and 1.8. This could be confusing for readers (e.g. decision maker under the RMA) because at the bandwidth scale shown, this 'missing' traffic is significant.	High
14	The future year (2021 and 2031) trip matrix demand associated with the supermarket site (zones 12) appears to be less than the 870 trips (or 876 with fuel) set out in Table 7.1 (Trip Generation) of the ITA.	High
15	There appear to be some significant inconsistencies in the path files used to compile delay, where different starting nodes adopted in the base and with development networks result in different path lengths which distorts the relative travel time.	High
16	It is reasonable to expect that traffic effects with development might be similar to the base, but intuitively they should not result in an improvement (as currently indicated). Therefore, any model outputs that indicate an improvement over the base will need to have a robust explanation as to how this is possible.	High
17	Table 1.5 of the Technical Note has a typo (digit missing) for the 2021 base flow from Main North Road (South approach).	High
18	Tables 1.5 to 1.8 of the Technical Note are summarised at the approach level rather than the movement level (as provided in Tables 1.3 and 1.4). It is therefore difficult to understand other possible	Medium

	reasons for the unintuitive outputs. It is recommended that Tables 1.5 to 1.8 are expanded to the movement level.	
19	Table 1.11 of the Technical Note indicates an average delay of 60 seconds for the Main South Road south approach through (northbound) movement at the new access intersection. However, this does not seem to reconcile with Table 1.9 where the northbound delay on Main North Road to the north is indicated to be 111 seconds quicker with development, and Cranford Street is only 3 seconds more with development. Some signal optimisation and coordination is acknowledged, but this result is unintuitive and needs further explanation.	Medium
20	It would be useful to normalise the results in Table 1.13 in the Technical Note to understand the potential effects on an average per vehicle basis (while still excluding development traffic).	High

## Appendix A – Review Register

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	Reviewer	Reviewer	Response	Reviewer
#	Issue Raised	Level of Client Risk	Proposed Resolution	Close out
1	Inconsistent traffic zones between 2018 base and future models. Justification or further explanation is recommended.	Low		
2	Further explanation of the rationale for applying car-parks to zones 13 and 15 is recommended, including potential advantages and limitations of this approach.	Low		
3	A 'manual' trip matrix estimation procedure was adopted. Justification or further explanation required why initial demands from CAST were not used (as adopted for future year models).	Low		
4	Reporting error in Tables A1.2 and A1.3 for the intersection totals, where the column totals are either incorrect and or out of sync with the row data above.	High		
5	GEH values reported for 4pm to 6pm are incorrect because they have not been converted to hourly equivalents.	Medium		
6	Comparisons not made with relevant TDMG criteria in ITA (however, this has been resolved indirectly as part of this peer review)	Low		
7	Journey time vs. distance graphs have not been provided. As an alternative to providing these, it would be very useful if each route distance (path length) could be included in ITA Table A1.4 so that the vehicle speeds can be inferred (or ideally also reported)	Low		
8	From the reporting in the revised section 8 of the ITA and Appendix A of the ITA, very few details are provided about how CAST demands were translated into Paramics and whether any additional adjustments were required (other than altering trip generation for the supermarket). Further clarification through reporting would assist with understanding. It currently appears that the adopted methodology results in additional traffic effects outside the Paramics model area that are	Medium		

	not currently being captured in the assessment of effects.			
9	There are some significant differences between the Base and with development network at the model external boundary, with a net reduction of traffic in the 'with development' network. This implies that some traffic is being pushed out beyond the Paramics model area and the effects of this are not captured. Normalising the current outputs to take this into account is recommended.	Medium		
10	It is recommended that vehicle tracking for two HCVs simultaneously turning right from Main North Road to QEII Drive is redone on a proper georeferenced base.	High		
11	It would be useful if Table 1.2 of the Technical Note included distance information so that speeds can be inferred (or implied average speeds added to the table)	Medium		
12	It appears that the pre-conferencing assumption that the site has been vacated and construction of a college (referred to in section 3.7 of the ITA) has been retained instead of adopting the revised permitted baseline agreed during conferencing.	High		
13	It is however noted that the increased development traffic is not displayed on the internal development links in Figures 1.4 and 1.8. This could be confusing for readers (e.g. decision maker under the RMA) because at the bandwidth scale shown, this 'missing' traffic is significant.	High		
14	The future year (2021 and 2031) trip matrix demand associated with the supermarket site (zones 12) appears to be less than the 870 trips (or 876 with fuel) set out in Table 7.1 (Trip Generation) of the ITA.	High		
15	There appear to be some significant inconsistencies in the path files used to compile delay, where different starting nodes adopted in the base and with development networks result in different path lengths which distorts the relative travel time.	High		

16	It is reasonable to expect that traffic effects with development might be similar to the base, but intuitively they should not result in an improvement (as currently indicated). Therefore, any model outputs that indicate an improvement over the base will need to have a robust explanation as to how this is possible.	High		
17	Table 1.5 of the Technical Note has a typo (digit missing) for the 2021 base flow from Main North Road (South approach).	Medium		
18	Tables 1.5 to 1.8 of the Technical Note are summarised at the approach level rather than the movement level (as provided in Tables 1.3 and 1.4). It is therefore difficult to understand other possible reasons for the unintuitive outputs. It is recommended that Tables 1.5 to 1.8 are expanded to the movement level.	Medium		
19	Table 1.11 of the Technical Note indicates an average delay of 60 seconds for the Main South Road south approach through (northbound) movement at the new access intersection. However, this does not seem to reconcile with Table 1.9 where the northbound delay on Main North Road to the north is indicated to be 111 seconds quicker with development, and Cranford Street is only 3 seconds more with development. Some signal optimisation and coordination is acknowledged, but this result is unintuitive and needs further explanation.	Medium		
20	It would be useful to normalise the results in Table 1.13 in the Technical Note to understand the potential effects on an average per vehicle basis (while still excluding development traffic).	High		

## Appendix R – Transport Addendum

Harris, Nathan

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From: Gregory, Mark  
Sent: Friday, 8 November 2019 2:02 p.m.  
To: Harris, Nathan; Holland, Richard; Nash, Mal  
Cc: Chapman, Emma  
Subject: RE: Peer review - transport modelling - materials - email 2

Hi Nathan,

I have noted in my evidence that this review would be a useful platform for resolving areas of disagreement with the modelling aspects of development.

I haven't seen a point of contradiction in Mr Falconer's review to my own opinion. We both agree that the base model is 'okay', but that the development model findings are 'illogical' / 'counter intuitive'.

The main difference is that the Mr Falconer identifies that development traffic under-represented in the model; a point I did not pick up on, and subsequently concur to be correct. (I had checked demands in previous versions of the model, which had appeared to be correct). By my estimation, the difference represents about 16%, or roughly 170 vph.

The demands supplied by Council included roughly 1,050 vph for the development 'zones', meaning that the issue has certainly not arisen from the data supplied by Council.

I am very concerned about this difference.

If the difference represents a model outcome (using an inbuilt feature ("matrix estimation") in the paramics software); it is likely that the modelled network is operating at over capacity, and the model simply cannot assign the full development traffic.

Mr Falconer does make a helpful point as well that the over simplification of the traffic light simulation might actually disadvantage the AEE (QTP, para 4.6, 4.7), whereas in reality phasing sequence lengths adjust to adapt to changes in traffic. This might offer some hope (but there is a tool to include dynamic signal variability in simulation available to myself (through CTOC), which was offered for use and declined by the Applicant).

Overall, my view is one of concern. Mr Falconer shows how the development model is bias (albeit unintentionally). This finding comes two days after I conclude that the outcomes are on a knife edge, and over exposed to the background risk mitigation processes having not been considered. I do not know what this means in terms of the Conferencing that has been undertaken, and suggest that a copy of this review be sent to all parties.

To be clear, I agree with Mr Falconer's conclusion that the matters found are unintentional. I hope the model developers will be able to out this out of mind over the coming weekend.

Please do not hesitate to contact me should you require any further clarification.

Best wishes.

Mark  
03 941 8618

## **Appendix S – Urban Design Panel Report**

# Christchurch Urban Design Panel

## Proposal Recommendations

14 AUGUST 2019

By Email: [rebecca.parish@foodstuffs-si.co.nz](mailto:rebecca.parish@foodstuffs-si.co.nz)

Dear: Rebecca Parish

**Urban Design Panel - Pak N Save, 171 & 165 Main North Road, 7, 7A & 7B Northcote Road:**

The above Panel considered your application on 14 August 2019. Please find below the confirmed comments from that meeting.

In response to the material circulated and the review meeting, the Panel thanks the applicant for their attendance and commends them on designing this building for future use as a Civil Defence hub in the event of an emergency, retaining the retail opportunity in the corner, and incorporating underground car parking to reduce the visual dominance of this.

### A. KEY DESIGN AND CONSENT RECOMMENDATIONS:

*"Recommendations on matters to be addressed for Panel support of the application"*

The Panel:

1. Recommends that the soft landscaping be reconsidered to maximise ecological values and opportunities to convey a narrative to the customer, for example:
  - a. Indigenous species
  - b. Habitat consideration including scale of green areas
  - c. Consolidating green areas to create stronger presence and larger scale
  - d. Coherence and legibility across the site, i.e. interconnectedness of planted areas
  - e. Buffer pedestrian access ways with planting
2. Consider the extent of hard landscaping excessive, and suggest reconsideration of this to reduce the visual dominance of car parking and areas of impervious surfaces. The reduction in the number of aisles may allow additional pedestrian and landscaping opportunities.
3. Consider the location of the fuel station to be visually dominant, and that its position at the corner limits the possibilities for additional planting. The Panel encourage the applicant to reconsider the location of this facility to allow better landscaping and circulation, e.g. moving the facility further north.
4. Recommend the applicant reconsider the treatment to Lydia Street and ROW; for example, consider making vehicular access one-way to allow for footpaths and landscaping on both sides, or consider relocating the footpath to the southern side to enhance the pedestrian experience, if all parties to the ROW agree. To be clear, the Panel consider this to be a CPTED issue given the lack of natural surveillance.

### B. SECONDARY RECOMMENDATIONS:

*"Further improvements and value added recommendations"*

The Panel:

5. Were encouraged by the verbal discussion to remove the southern access, and suggest removing the northern access to the south of the existing retail corner.
6. Suggest further articulation of the east and northern facades, particularly the roof/eaves line.
7. Suggest considering the relocation of the bus stop to improve pedestrian connections with the super market.

# Christchurch Urban Design Panel

## *Proposal Recommendations*

**PLEASE NOTE:**

The Urban Design Panel is an advisory body only. The Panel has no statutory decision making powers. The Panel's recommendations are to assist you in the refinement of your development proposal and the reporting Council officer will take its advice into account when processing any resource consent applications. The decision on any application rests with the Council.

The Christchurch City Council understands that you may wish to refer to the Urban Design Panel recommendations in the promotion of your development proposal. Please note the comments are not intended for publication.

To further discuss the Panel's recommendations please contact Josie Schroder (Council Urban Design Panel facilitator) at [josie.schroder@ccc.govt.nz](mailto:josie.schroder@ccc.govt.nz).

Please feel free to contact me in regards to any administrative matters (as the Council Urban Design Panel administrator) at [adrianna.hess@ccc.govt.nz](mailto:adrianna.hess@ccc.govt.nz).

Yours sincerely



**Adrianna Hess**

Hearings & Council Support Officer  
Community Support, Governance & Partnerships Unit  
Customer & Community Group

## **Appendix T – District Plan Objectives and Policies**

## Hazardous Substances and Contaminated Land (Chapter 4)

### 4.2.2.1 Objective - Contaminated land - managing effects

- a. Land containing elevated levels of contaminants is managed to protect human health and the environment, which includes significant natural and Ngāi Tahu cultural values from the adverse effects of subdivision, development and use of contaminated land and natural hazards, including from site investigations, earthworks and soil disturbance, and to enable the land to be used in the future.

#### 4.2.2.1.1 Policy - Best practice approach

- a. Require any proposal to subdivide, use or develop contaminated land or potentially contaminated land to apply a best practice approach to investigate the risks, and either remediate the contamination or manage activities on contaminated land to protect people and the environment.

Advice note:

1. The status of some activities will be determined by the requirements of the Resource Management ([National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health](#)) Regulations 2011. Reference should be made to the Ministry for the Environment website for a copy of these regulations, a user's guide, and documents incorporated by reference in these regulations.

#### 4.2.2.1.2 Policy - Remediation

- a. Remediation of contaminated land should not pose a more significant risk to human health or the environment than if remediation had not occurred.

#### 4.2.2.1.3 Policy - Future use

- a. Use or development of contaminated land that has been remediated or has an existing management plan in place, must not damage or destroy any containment works, unless comparable or better containment is provided.

## Natural Hazards (Chapter 5)

### 3.3.6 Objective - Natural hazards

- a. New subdivision, use and development (other than new critical infrastructure or strategic infrastructure to which paragraph b. applies):
  - i. is to be avoided in areas where the risks from natural hazards to people, property and infrastructure are assessed as being unacceptable; and
  - ii. in all other areas, is undertaken in a manner that ensures the risks of natural hazards to people, property and infrastructure are appropriately mitigated.
- b. New critical infrastructure or strategic infrastructure may be located in areas where the risks of natural hazards to people, property and infrastructure are otherwise assessed as being unacceptable, but only where:
  - i. there is no reasonable alternative; and
  - ii. the strategic infrastructure or critical infrastructure has been designed to maintain, as far as practicable, its integrity and form during natural hazard events; and
  - iii. the natural hazard risks to people, property and infrastructure are appropriately mitigated.
- c. There is increased public awareness of the range and scale of natural hazard events that can affect Christchurch District.
- d. The repair of earthquake damaged land is facilitated as part of the recovery.

#### 5.2.2.1.2 Policy - Manage activities to address natural hazard risks

- a. Manage activities in all areas subject to natural hazards in a manner that is commensurate with the likelihood and consequences of a natural hazard event on life and property.

#### 5.2.2.1.4 Policy - No transferring of natural hazard risk

- a. Ensure that subdivision, use and development (including proposals for hazard mitigation works or hazard removal) do not transfer or create unacceptable natural hazard risk to other people, property, infrastructure or the natural environment.

### 5.2.2.2.1 Policy - Flooding

- a. Map hazard risk for the Flood Management Area based on:
  - i. a modelled 0.5% AEP (1 in 200-year) rainfall event plus a 5% AEP (1 in 20-year) tide event plus 250mm freeboard; OR a modelled 5% AEP (1 in 20-year flood event) plus a 0.5% AEP (1 in 200-year) tide event plus 250mm freeboard; OR 11.9m above Christchurch City Council Datum (the maximum 200-year tidal contour) plus 250mm freeboard; whichever is the greater; and
  - ii. allowance for 1 metre of sea level rise and an increase in rainfall intensity by 16% through to 2115 as a result of climate change; and
  - iii. a maximum buffer extension of the modelled rainfall event areas by 60 metres in a north/south and east/west direction.
- b. In the High Flood Hazard Management Area:
  - i. provide for development of a residential unit on residentially zoned land where the flooding risk is predominantly influenced by sea-level rise and where appropriate mitigation can be provided that protects people's safety, well-being and property from unacceptable risk; and
  - ii. within the Specific Purpose (Ōtākaro Avon River Corridor) Zone, provide for structures in accordance with Policy [13.14.2.1.8](#).
  - iii. in all other cases, avoid subdivision, use or development where it will increase the potential risk to people's safety, well-being and property.
- c. Avoid activities locating where they could undermine the integrity of the Waimakariri River primary stopbank system, and restrict activities locating where they could undermine the integrity of the Waimakariri River secondary stopbank system.
- d. Maintain the flood storage capacity and function of natural floodplains, wetlands and ponding areas, including the Hendersons Basin, Cashmere Stream Floodplain, Hoon Hay Valley, Cashmere-Worsleys Ponding Area, Cranford Basin and Lower Styx Ponding Area<sup>1</sup>.
- e. Except for filling required to meet minimum floor levels, ensure that filling in urban areas at risk of flooding in a major flood event does not transfer flooding risk to other people, property, infrastructure or the natural environment.
- f. Reduce potential flood damage by ensuring floor levels for new buildings or additions to buildings, except those unlikely to suffer material damage, are above flooding predicted to occur in a major flood event, including an allowance for appropriate freeboard.

<sup>1</sup> This policy does not foreclose compensatory storage being provided for where filling is required.

## General Rules and Procedures (Chapter 6)

### 6.1.2.1 Objective - Adverse noise effects

- a. Adverse noise effects on the amenity values and health of people and communities are managed to levels consistent with the anticipated outcomes for the receiving environment.

#### 6.1.2.1.1 Policy - Managing noise effects

- a. Manage adverse noise effects by:
  - i. limitations on the sound level, location and duration of noisy activities;
  - ii. requiring sound insulation for sensitive activities or limiting their location relative to activities with elevated noise levels.

#### 6.1.2.1.2 Policy - Noise during night hours

- a. Achieve lower noise levels during night hours to protect sleep, and the amenity values of residential and other sensitive environments, so far as is practicable.

### 6.6.2.1 Objective - Protection of water bodies and their margins from inappropriate use and development

- a. Activities and development in water body margins are managed in a way that protects and/or enhances the following values and functions of the water body and its margins: flood management; water quality; riparian or aquatic ecosystems; the natural character and amenity values of the water body; historic heritage or cultural values; and access where appropriate for recreation activities, customary practices including mahinga kai, or maintenance.

#### 6.6.2.1.1 Policy - Naturalisation of water bodies and their margins

- a. Take a catchment-wide approach to protecting and/or enhancing the natural form, function and ecology of water bodies and their margins in order to maintain or improve (where degraded) water quality, flood control, biodiversity, bank stability, mahinga kai, and amenity values, while:
  - i. in City and Settlement areas (see [Rule 6.6.4](#)), supporting the provision of ecological corridors and public access where possible, recognising this may not be fully achievable for some classifications of water body because of historic development patterns or adjoining land uses.
  - ii. in Rural areas (see [Rule 6.6.5](#)), providing for rural activities while:
    - A. ensuring adverse effects of land uses on the functions of water bodies are managed; and
    - B. recognising that protecting or improving water quality is a priority matter.
  - iii. in Natural areas (see [Rule 6.6.6](#)), minimising development in water body setbacks.

### 6.6.2.1.2 Policy - Setbacks from water bodies

- a. Manage adverse effects of activities on water bodies and their margins within water body setbacks in a manner that is consistent with the classification of the water body.

	<b>Water body classification</b> <b>(The characteristics of each water body classification are described in Appendix 6.11.5.1)</b>	<b>Functions of the water body setback</b>
i.	All	<ol style="list-style-type: none"> <li>a. Providing a buffer zone for natural erosion, sedimentation and land movement in the weak saturated soils that border <u>water bodies</u>; and minimising the risk that these processes pose to <u>buildings</u> or other structures.</li> <li>b. Minimising flood risk and damage by providing flood storage capacity, dispersal and effective land drainage; and managing risk and damage from structures that transfer flood hazard.</li> <li>c. Improving water quality and catchment-wide ecosystem health by filtering potential contaminants.</li> <li>d. Allowing space for riparian planting where possible in a continuous corridor to improve ecological values, and bank and slope stability.</li> <li>e. Providing access for the maintenance of <u>water bodies</u> and any associated hazard protection works.</li> </ol>

ii.	Downstream waterway	<ul style="list-style-type: none"> <li>a. Maintaining or enhancing habitat for terrestrial and aquatic animals and plants.</li> <li>b. Encouraging the establishment, retention and maintenance of significant appropriate riparian vegetation.</li> <li>c. Contributing to the open space character and <u>amenity values</u> of the surrounding area.</li> </ul>
iii.	Upstream waterway	<ul style="list-style-type: none"> <li>d. Supporting customary uses, including mahinga kai, within the <u>water body</u>, its margins and catchment.</li> <li>e. Providing recreational opportunities for the public where this is consistent with the other functions of the <u>water body setback</u>.</li> </ul>
iv.	Environmental asset waterway	<ul style="list-style-type: none"> <li>a. Maintaining or enhancing habitat for terrestrial and aquatic animals and plants.</li> <li>b. Encouraging the establishment, retention and maintenance of appropriate riparian vegetation.</li> <li>c. Contributing to the open space character and <u>amenity values</u> of the immediate area.</li> </ul>
v.	<u>Network waterway</u>	<ul style="list-style-type: none"> <li>a. Where feasible, creating or enhancing ecological corridors for terrestrial and aquatic animals and plants.</li> </ul>
vi.	<u>Hill waterway</u>	<ul style="list-style-type: none"> <li>a. Contributing to the open space character and <u>amenity values</u> of the surrounding area.</li> <li>b. Maintaining or enhancing habitat for terrestrial and aquatic animals and plants.</li> </ul>
vii.	Environmental asset standing water body	<ul style="list-style-type: none"> <li>a. Providing habitat for a wide range of terrestrial and aquatic animals and plants.</li> <li>b. Encouraging the establishment, retention and maintenance of appropriate riparian vegetation.</li> <li>c. Contributing to the open space character and <u>amenity values</u> of the surrounding area.</li> <li>d. Supporting customary uses including mahinga kai within the <u>water body</u>, its margins and catchment.</li> <li>e. Providing recreational opportunities for the public where this is consistent with the other functions of the <u>water body setback</u>.</li> </ul>
viii.	Banks Peninsula waterway	<ul style="list-style-type: none"> <li>a. Providing interim protection of values for waterways on <u>Banks Peninsula</u> that have not yet been classified.</li> <li>b. Maintaining or enhancing habitat for terrestrial, and aquatic animals and plants.</li> <li>c. Encouraging the establishment, retention and maintenance of appropriate riparian vegetation.</li> <li>d. Contributing to the open space character and <u>amenity values</u> of the immediate area.</li> </ul>

### 6.6.2.1.3 Policy - Management of activities in water body setbacks

- a. Where buildings, earthworks, other structures, impervious surfaces, or maintenance and enhancement works are undertaken within a water body setback, manage the activity so that:
  - i. any identified cultural significance of the water body to tangata whenua is appropriately recognised and provided for, including provision for customary access and use where applicable;
  - ii. water quality, biodiversity, and mahinga kai values are maintained or enhanced;
  - iii. connectivity between land, natural freshwater systems and the coast are retained or enhanced;
  - iv. the stability of water body banks and adjacent land is maintained and sedimentation and erosion minimised;
  - v. access for maintenance is enabled;
  - vi. the ability of water body margins, channels or ponding areas to store and/or convey surface water safely and efficiently is not impeded;
  - vii. flood events are not exacerbated;
  - viii. adverse effects of flooding or erosion are not transferred to another site;
  - ix. amenity values and natural character values, including riparian planting, are retained or enhanced;
  - x. activities do not, to more than a minor extent, disturb or visually detract from:
    - A. Sites of Ecological Significance listed in Schedule A of [Appendix 9.1.6.1](#);
    - B. Outstanding Natural Landscapes identified in [Appendix 9.2.9.2.2](#);
    - C. Outstanding Natural Features identified in [Appendix 9.2.9.2.1](#);
    - D. Significant Features identified in [Appendix 9.2.9.2.3](#);
    - E. Rural Amenity Landscapes identified in [Appendix 9.2.9.2.4](#);
    - F. Areas of Outstanding, or High and Very High, Natural Character in the Coastal Environment identified in [Appendices 9.2.9.2.7](#) and [9.2.9.2.8](#);
    - G. Heritage items or heritage settings listed in [Appendix 9.3.7.2](#);
    - H. Significant Trees listed in [Appendix 9.4.7.1](#);
    - I. Wāhi Tapu/Wāhi Taonga sites of Ngāi Tahu Cultural Significance identified in [Schedule 9.5.6.1](#) and, in the case of earthworks, Kaitōrete Spit (ID 64) identified in [Schedule 9.5.6.2](#);
    - J. Ngā Wai sites of Ngāi Tahu Cultural Significance identified in [Schedule 9.5.6.4](#);

- .....
- xi. provision is made for public access appropriate to the classification and location of the water body and having regard to:
    - A. the relationship of tangata whenua with their ancestral lands, water and sites;
    - B. protection of Sites of Ecological Significance listed in Schedule A of [Appendix 9.1.6.1](#);
    - C. residential amenity;
    - D. Outstanding Natural Landscapes identified in [Appendix 9.2.9.2.2](#);
    - E. Outstanding Natural Features identified in [Appendix 9.2.9.2.1](#)
    - F. bank and land stability;
    - G. public safety;
    - H. the operational or security requirements of infrastructure;
    - I. property ownership and the safe and efficient operation of rural and industrial sites.

### 6.8.2.1 Objective - Signage

- a. Signage collectively contributes to Christchurch's vitality and recovery by:
  - i. supporting the needs of business, infrastructure and community activities;
  - ii. maintaining public safety; and
  - iii. enhancing the visual amenity values and character of the surrounding area, building or structures.

#### 6.8.2.1.1 Policy - Enabling signage in appropriate locations

- a. Enable signage:
  - i. as an integral component of commercial and industrial environments, strategic infrastructure and community activities throughout the Christchurch District; and
  - ii. that is necessary for public health and safety and to provide direction to the public.

#### 6.8.2.1.2 Policy - Controlling signage in sensitive locations

- a. Ensure the character and amenity values of residential, open space and rural zones are protected from adverse visual and amenity effects from large areas or numbers of signs, or off-site signs within these zones.

#### 6.8.2.1.3 Policy - Managing the potential effects of signage

- a. In considering Policies 6.8.2.1.1 and 6.8.2.1.2, ensure that the size, number, height, location, design, appearance and standard of maintenance of signs:
  - i. do not detract from, and where possible contribute to, the character and visual amenity of the surrounding area and public realm;
  - ii. integrate within the façade of the building, do not detract from the integrity of the building design, and maintain the building as the primary visual element;
  - iii. are in proportion to the scale of buildings and the size of the site; and
  - iv. enhance the Central City.

#### 6.8.2.1.4 Policy - Transport safety

- a. Ensure that signs do not cause obstruction and/or distraction for motorists and pedestrians and other road users.

## Transport (Chapter 7)

### 7.2.1 Objective - Integrated transport system for Christchurch District

- a. An integrated transport system for Christchurch District:
  - i. that is safe and efficient for all transport modes;
  - ii. that is responsive to the current recovery needs, future needs, and enables economic development, in particular an accessible Central City able to accommodate projected population growth;
  - iii. that supports safe, healthy and liveable communities by maximising integration with land use;
  - iv. that reduces dependency on private motor vehicles and promotes the use of public and active transport;
  - v. that is managed using the one network approach.

#### Advice note:

1. The "One Network Approach" is an approach where the transport network is considered as a whole. The aim of this approach is to ensure that the management and provision of all transport infrastructure (including all transport modes) is well connected and undertaken in an efficient and integrated manner. For more guidance on how the "one network approach" is applied, please refer to the [Greater Christchurch Transport Statement 2012](#) and [Christchurch Transport Strategic Plan 2012](#).

### 7.2.1.2 Policy - High trip generating activities

- a. Manage the adverse effects of high trip generating activities, except for permitted activities within the Central City, on the transport system by assessing their location and design with regard to the extent that they:
  - i. are permitted<sup>1</sup> by the zone in which they are located;
  - ii. are located in urban areas and generate additional vehicle trips beyond what is already established or consented, unless the already established or consented vehicle trips are specifically included in rule thresholds;
  - iii. are accessible by a range of transport modes and encourage public and active transport use;
  - iv. do not compromise the safe, efficient and effective use of the transport system;
  - v. provide patterns of development that optimise use of the existing transport system;
  - vi. maximise positive transport effects;
  - vii. avoid significant adverse transport effects of activities where they are not permitted by the zone in which they are located;
  - viii. mitigate other adverse transport effects, such as effects on communities, and the amenity values of the surrounding environment, including through travel demand management measures;
  - ix. provide for the transport needs of people whose mobility is restricted; and
  - x. integrate and coordinate with the transport system, including proposed transport infrastructure and service improvements.

<sup>1</sup> Refers to the activity being listed as a permitted activity in the activity status table for the zone in which it is located.

Advice note:

Policy 7.2.1.2 also achieves [Objective 7.2.2](#).

### 7.2.1.3 Policy - Vehicle access and manoeuvring

- a. Provide vehicle access and manoeuvring, including for emergency service vehicles, compatible with the road classification, which ensures safety, and the efficiency of the transport system.

Advice note:

1. Policy 7.2.1.3 also achieves [Objective 7.2.2](#).

#### 7.2.1.4 Policy - Requirements for car parking and loading

- a. Outside the Central City:
  - i. Require car parking spaces and loading spaces which provide for the expected needs of an activity in a way that manages adverse effects.
  - ii. Enable a reduction in the number of car parking spaces required in circumstances where it can be demonstrated that:
    - A. the function of the surrounding transport network and amenity of the surrounding environment will not be adversely affected; and/or
    - B. there is good accessibility by active and public transport and the activity is designed to encourage public and active transport use; and/or
    - C. the extent of the reduction is appropriate to the characteristics of the activity and its location; and/or
    - D. the extent of the reduction will maintain on-site parking to meet anticipated demand.
- b. Within the Central City:
  - i. Enable activities to provide car parking spaces and loading spaces, whilst minimising any adverse effects on the efficiency and safety of the transportation networks, including public transport, to the extent practicable.
  - ii. Manage the development of commercial car parking buildings and parking lots within the Central City so that they:
    - A. support the recovery of the Central City;
    - B. are easily accessible for businesses within the Central City;
    - C. minimise any adverse effects on the efficiency and safety of the transportation networks of all users, to the extent practicable;
    - D. protect the amenity values of the Central City;
    - E. reduce the need for activities to provide their own on-site parking;
    - F. do not significantly adversely affect the demand for public transport to, from or within the Central City.
  - iii. Allow for temporarily vacant sites to be used for car parking areas within the Central City until 30 April 2018.

#### Advice note:

1. Policy 7.2.1.4 also achieves [Objective 7.2.2](#).

### 7.2.1.5 Policy - Design of car parking areas and loading areas

- a. Require that car parking areas and loading areas are designed to:
  - i. operate safely and efficiently for all transport modes and users;
  - ii. function and be formed in a way that is compatible with the character and amenity values of the surrounding environment; and
  - iii. be accessible for people whose mobility is restricted.

Advice note:

1. Policy 7.2.1.5 also achieves [Objective 7.2.2](#).

### 7.2.1.6 Policy - Promote public transport and active transport

- a. Promote public and active transport by:
  - i. ensuring new, and upgrades to existing, road corridors provide sufficient space and facilities to promote safe walking, cycling and public transport, in accordance with the road classification where they contribute to the delivery of an integrated transport system;
  - ii. ensuring activities provide an adequate amount of safe, secure, and convenient cycle parking and, outside the Central City, associated end of trip facilities;
  - iii. encouraging the use of travel demand management options that help facilitate the use of public transport, cycling, walking and options to minimise the need to travel; and
  - iv. requiring new District Centres to provide opportunities for a public transport interchange.
  - v. encouraging the formation of new Central City lanes and upgrading of existing lanes in the Central City, where appropriate, to provide for walking and cycling linkages and public spaces.
  - vi. developing a core pedestrian area within the Central City which is compact, convenient and safe, with a wider comprehensive network of pedestrians and cycle linkages that are appropriately sized, direct, legible, prioritized, safe, have high amenity, ensure access for the mobility impaired and are free from encroachment.

Advice note:

1. Policy 7.2.1.6 also achieves [Objective 7.2.2](#).

#### 7.2.1.8 Policy - Effects from transport infrastructure

- a. Avoid or mitigate adverse effects and promote positive effects from new transport infrastructure and changes to existing transport infrastructure on the environment, including:
  - i. air and water quality;
  - ii. connectivity of communities;
  - iii. noise, vibration and glare;
  - iv. amenity and effects on the built environment;
  - v. well-being and safety of users.

Advice note:

- 1. Policy 7.2.1.8 also achieves [Objective 7.2.2](#).

#### 7.2.2 Objective - Adverse effects from the transport system

- a. Enable Christchurch District's transport system to provide for the transportation needs of people and freight whilst managing adverse effects from the transport system.

##### 7.2.2.1 Policy - Effects from the strategic transport network

- a. To manage any adverse effects from the ongoing use, repair, and development of the strategic transport network, whilst recognising the national and regional scale and economic importance of this network, and the role of the strategic transport network in the recovery of Christchurch.

### 7.2.2.3 Policy - Effect on adjacent land uses to the Transport Zone

- a. Manage the adverse effect(s) of an activity within the Transport Zone so that the effects of the activity are consistent with the amenity values and activity of adjacent land uses, whilst providing for the transport network, in particular the strategic transport network to function efficiently and safely.
- b. To ensure adjacent land uses are designed, located and maintained in such a way as to avoid reverse sensitivity effects on the strategic transport network.

#### Advice note:

1. Policies [7.2.1.1](#), [7.2.1.2](#), [7.2.1.3](#), [7.2.1.4](#), [7.2.1.5](#), [7.2.1.6](#), [7.2.1.7](#), [7.2.1.8](#) also apply to [Objective 7.2.2](#).
2. Policies [7.2.2.2](#), [7.2.2.3](#) also apply to [Objective 7.2.1](#).
3. For more details on the Council's vision, expectation and plans for transport, during the recovery period and longer term, please refer to the '[Christchurch Transport Strategic Plan](#)'.

## Earthworks (Chapter 8)

### 8.2.4 Objective - Earthworks

- a. Earthworks facilitate subdivision, use and development, the provision of utilities, hazard mitigation and the recovery of the district.

#### 8.2.4.1 Policy - Water quality

- a. Ensure earthworks do not result in erosion, inundation or siltation, and do not have an adverse effect on surface water or groundwater quality.

#### 8.2.4.2 Policy - Repair of earthquake damaged land

- a. Facilitate recovery by enabling property owners to make repairs to earthquake damaged land for residential purposes, where the repairs will have acceptable adverse effects on people, property and the natural environment.
- b. Recognise the need for the repair of other earthquake damaged land as part of recovery.

#### 8.2.4.3 Policy - Benefits of earthworks

- a. Recognise that earthworks are necessary for subdivision, use and development, the provision of utilities, hazard mitigation and the recovery of the district.

#### 8.2.4.4 Policy - Amenity

- a. Ensure, once completed, earthworks do not result in any significant shading, visual impact, loss of privacy or other significant detracting from the amenity values enjoyed by those living or working in the locality.

## 8.2.5 Objective - Earthworks health and safety

- a. People and property are protected during, and subsequent to, earthworks.

### 8.2.5.1 Policy - Land stability

- a. Avoid earthworks that will create a significant risk to people and property through subsidence, rockfall, cliff collapse, erosion, inundation, siltation or overland flows.

### 8.2.5.2 Policy - Nuisance

- a. Subject to [Policy 8.2.4.3](#), ensure that earthworks avoid more than minor adverse effects on the health and safety of people and their property, and do not generate continuous or persistent noise, vibration, dust or odour nuisance.

### 8.2.5.3 Policy - Vehicle movement

- a. Subject to [Policy 8.2.4.3](#), ensure that the transportation to and from a site of earth, construction or filling material is safe and minimises adverse transport network and local amenity value effects.

### 8.2.5.4 Policy - Earthworks design

- a. Ensure that earthworks over identified thresholds are designed to enable the anticipated land use.

### 8.2.5.5 Policy - Management of contaminated land

- a. Enable earthworks where necessary to appropriately manage land contamination.

## Natural and Cultural Heritage (Chapter 9)

### 9.4.2.1.1 Objective - Trees

- a. Maintain and enhance the contribution of the Christchurch District's significant trees listed in [Appendix 9.4.7.1](#), and trees in road corridors, parks, reserves and public open space, to community amenity through:
  - i. landscape character and amenity;
  - ii. heritage and cultural values;
  - iii. purification of air and rainwater;
  - iv. releasing oxygen and storing carbon;
  - v. cooling of the built environment and waterways;
  - vi. stormwater and erosion management; and
  - vii. biodiversity protection and enhancement;while providing for the reasonable use and enjoyment of property and landowner responsibilities.

#### 9.4.2.2.3 Policy - Tree protection

- a. Protect from inappropriate physical works:
  - i. trees that are listed in [Appendix 9.4.7.1](#), particularly those trees identified as having exceptional values; and
  - ii. trees in road corridors, parks, reserves and public open space where they provide amenity value and/or collectively contribute to the character and environmental quality of the Christchurch District, to the extent consistent with maintaining the multiple functions of road corridors, parks, reserves and public open space.

#### 9.4.2.2.4 Policy - Tree maintenance

- a. To enable the maintenance and management of trees that are listed in [Appendix 9.4.7.1](#) and trees in the road corridors, parks, public open space and reserves in recognition that such works may be necessary to:
  - i. ensure the continuing health, structural integrity and amenity value of the trees;
  - ii. enable the reasonable use and enjoyment of the property and surrounds; and
  - iii. minimise the risk from the trees to public safety, property, buildings, strategic infrastructure and electricity distribution lines.

#### 9.4.2.2.7 Policy - Felling of trees

- a. For trees listed in [Appendix 9.4.7.1](#):
  - i. limit the felling of significant trees, except where there are no reasonable alternatives enabling retention of the tree due to its condition, or where the use and enjoyment of a property and surrounds is significantly compromised or diminished; and
  - ii. avoid the felling of significant trees that are identified as having exceptional values, except where there are no reasonable alternatives, or where the use and enjoyment of a property and surrounds is significantly compromised or diminished.
- b. Limit the felling of trees in road corridors, parks, public open space and reserves having regard to size, location and species, except where there are no reasonable alternatives.

## Commercial (Chapter 15)

### 15.2.1 Objective - Recovery of commercial activity

- a. The critical importance of commercial activity to the recovery and long term growth of the City is recognised and facilitated in a framework that supports commercial centres.

### 15.2.2 Objective - Centres-based framework for commercial activities

- a. Commercial activity is focussed within a network of centres (comprising the Central City, District Centres, Neighbourhood Centres, Local Centres and Large Format centres) to meet the wider community's and businesses' needs in a way and at a rate that:
  - i. supports intensification within centres;
  - ii. enables the efficient use and continued viability of the physical resources of commercial centres and promotes their success and vitality, reflecting their critical importance to the local economy;
  - iii. supports the function of District Centres as major focal points for commercial activities, employment, transport and community activities, and Neighbourhood Centres as a focal point for convenience shopping and community activities;
  - iv. gives primacy to the Central City, followed by District Centres and Neighbourhood Centres identified as Key Activity Centres;
  - v. is consistent with the role of each centre as defined in [15.2.2.1 Policy – Role of centres Table 15.1](#);
  - vi. supports a compact and sustainable urban form that provides for the integration of commercial activity with community activity, residential activity and recreation activity in locations accessible by a range of modes of transport;
  - vii. supports the recovery of centres that sustained significant damage or significant population loss from their catchment, including the Central City, Linwood, and Neighbourhood Centres subject to [15.2.4.3 Policy](#) Suburban centre master plans;
  - viii. enhances their vitality and amenity and provides for a range of activities and community facilities;
  - ix. manages adverse effects on the transport network and public and private infrastructure;
  - x. is efficiently serviced by infrastructure and is integrated with the delivery of infrastructure; and
  - xi. recognises the values of, and manages adverse effects on, sites of Ngāi Tahu cultural significance identified in [Appendix 9.5.6](#) and natural waterways (including waipuna).

### 15.2.2.1 Policy - Role of centres

- a. Maintain and strengthen the Central City and commercial centres as the focal points for the community and business through intensification within centres that reflects their functions and catchment sizes, and in accordance with a framework that:
  - i. gives primacy to, and supports, the recovery of the Central City;
  - ii. supports and enhances the role of District Centres; and
  - iii. maintains the role of Neighbourhood Centres, Local Centres and Large Format Centres

as set out in [Policy 15.2.2.1](#), [Table 15.1](#) - Centre's role.

**Table 15.1 - Centre's role**

	<b>Role</b>	<b>Centre and size (where relevant)</b>
A.	<p>Central Business District</p> <p>Principal employment and business centre for the City and wider region and to become the primary destination for a wide range and scale of activities including comparison shopping, dining and night life, <u>entertainment activities</u>, <u>guest accommodation</u>, events, <u>cultural activities</u> and tourism activities.</p> <p>Provides for high density <u>residential activity</u>, <u>recreation activities</u> and <u>community activities</u> and <u>community facilities</u> (including health and social services) as well as civic and cultural venues/ facilities (including museums, art galleries).</p> <p>Serves the district's population and visitors.</p> <p>The focus for the district, sub-regional and wider transport services with a central <u>public transport interchange</u>, providing access to large areas of the district and the surrounding districts of Selwyn and Waimakariri.</p>	<p>Centre: <u>Central City</u></p>

<p>B. <u>District Centre - Key Activity Centre</u>  Major retail destination for comparison and convenience shopping and a focal point for employment (including offices), <u>community activities and community facilities</u> (including libraries, meeting places), entertainment (including movie theatres, <u>restaurants, bars</u>), and <u>guest accommodation</u>.  Medium density housing is contemplated in and around the centre.  Anchored by large retailers including <u>department store(s) and supermarket(s)</u>.  <u>Accessible</u> by a range of modes of transport, including multiple bus routes. <u>Public transport facilities</u>, including an interchange, may be incorporated.  The extent of the centre:</p> <ol style="list-style-type: none"> <li>a. is the Commercial Core Zone and Commercial Retail Park Zone at Hornby, Belfast/ Northwood and Papanui/Northlands; and</li> <li>b. is the Commercial Core Zone in all other <u>District centres</u>; and</li> <li>c. includes <u>community facilities</u> within walking distance (400 metres) of the commercial zone.</li> </ol>	<p>Centres: Riccarton, Hornby, Papanui/Northlands, Shirley/Palms, Eastgate/Linwood, Belfast/ Northwood, North Halswell (emerging)  <u>(All Key Activity Centres)</u>  Size: Greater than 30,000m<sup>2</sup></p>
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<p>C. <u>Neighbourhood Centre</u>  A destination for weekly and daily shopping needs as well as for <u>community facilities</u>.  In some cases, <u>Neighbourhood Centres</u> offer a broader range of activities including comparison shopping, entertainment (cafes, <u>restaurants</u> and bars), <u>residential activities</u>, small scale <u>offices</u> and other <u>commercial activities</u>.  Anchored principally by a <u>supermarket(s)</u> and in some cases, has a second or different <u>anchor store</u>.  Serves the immediately surrounding suburbs and in some cases, residents and visitors from a wider area.  Medium density housing is contemplated in and around the centre.  <u>Accessible</u> by a range of modes of transport, including one or more bus services.  The extent of the centre:</p> <ol style="list-style-type: none"> <li>a. is the Commercial Core Zone in the identified centres, Commercial Local Zone at Wigram and Beckenham and Commercial Banks Peninsula Zone at Lyttelton and Akaroa; and</li> <li>b. <u>Community facilities</u> within walking distance (400 metres) of the centre.</li> </ol>	<p>Centres: Spreydon/ Barrington (<u>Key Activity Centre</u>), New Brighton (<u>Key Activity Centre</u>), Bush Inn/Church Corner, Merivale, Bishopdale, Prestons (emerging), Ferrymead, Sydenham (Colombo Street between Brougham Street and Moorhouse Avenue);  Addington, Avonhead, Sumner, Akaroa, Colombo/Beaumont (Colombo Street between Devon Street and Angus Street), Cranford, Edgeware, Fendalton, Beckenham, Halswell, Lyttelton, Ilam/Clyde, Parklands, Redcliffs, Richmond, St Martins, Stanmore/Worcester, Sydenham South (Colombo Street between Brougham Street and Southampton Street), Wairakei/Greens Road, Wigram (emerging), Woolston, Yaldhurst (emerging), West Spreydon (Lincoln Road), Aranui, North West Belfast.</p> <p>Size: 3,000 to 30,000m<sup>2</sup>.</p>
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<p>D. <u>Large format centre</u>  Standalone retail centre, comprising stores with large footprints, <u>yard-based suppliers</u>, <u>trade suppliers</u> including building improvement centres, and other vehicle oriented activities.  Provision of other <u>commercial activities</u> and residential and community uses is limited. This includes <u>limiting offices</u> to an <u>ancillary function</u>, and at Tower Junction, providing for a <u>limited amount of commercial services</u>.  Serves large geographical areas of the city.</p> <p>Not necessarily connected to a residential catchment.  Primarily accessed by car with limited public transport services.  The extent of the centre is the Commercial Retail Park Zone.</p>	<p>Centres: Moorhouse Avenue, Shirley Homebase, Tower Junction.</p>
<p>E. <u>Local centre</u>  A small group of primarily convenience shops and, in some instances, <u>community facilities</u>.  <u>Accessible</u> by walking, cycling from the area served and on a bus route in some instances.  Also includes standalone <u>supermarkets</u> serving the surrounding residential community.  The extent of the centre is the Commercial Local Zone, except Wainoni and Peer Street where the Commercial Core Zone applies.</p>	<p>Centres: Wainoni (174 Wainoni Road), Upper Riccarton (57 Peer Street), both zoned Commercial Core, All other <u>commercial centres</u> zoned Commercial Local.</p> <p>Size: Up to 3,000m<sup>2</sup> (Excluding Wainoni and Upper Riccarton)</p>

#### 15.2.2.4 Policy - Accommodating growth

- a. Growth in commercial activity is focussed within existing commercial centres.
- b. Any outward expansion of a commercial centre must:
  - i. ensure the expanded centre remains commensurate with the centre's role within a strategic network of centres, while not undermining the function of other centres;
  - ii. be integrated with the provision of infrastructure, including the transport network;
  - iii. be undertaken in such a manner that manages adverse effects at the interface with the adjoining zone; and
  - iv. be consistent with:
    - A. the scale of increasing residential development opportunities to meet intensification targets in and around centres, and
    - B. revitalising the Central City as the primary community focal point.

## 15.2.4 Objective - Urban form, scale and design outcomes

- a. A scale, form and design of development that is consistent with the role of a centre, and which:
  - i. recognises the Central City and District Centres as strategically important focal points for community and commercial investment;
  - ii. contributes to an urban environment that is visually attractive, safe, easy to orientate, conveniently accessible, and responds positively to local character and context;
  - iii. recognises the functional and operational requirements of activities and the existing built form;
  - iv. manages adverse effects on the surrounding environment; and
  - v. recognises Ngāi Tahu/ mana whenua values through landscaping and the use of low impact urban design, where appropriate.

### 15.2.4.1 Policy - Scale and form of development

- a. Provide for development of a significant scale and form in the core of District Centres and Neighbourhood Centres, and of a lesser scale and form on the fringe of these centres.
- b. The scale and form of development in centres shall:
  - i. reflect the context, character and the anticipated scale of the zone and centre's function;
  - ii. increase the prominence of buildings on street corners;
  - iii. for Local Centres, maintain a low rise built form to respect and integrate with their suburban residential context;
  - iv. for Key Activity Centres and Large Format Centres, enable larger floor plates while maintaining a high level of amenity in the centre; and
  - v. manage adverse effects on the surrounding environment, particularly at the interface with residential areas, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6 and natural waterways.

#### 15.2.4.2 Policy - Design of new development

- a. Require new development to be well-designed and laid out by:
  - i. encouraging pedestrian activity and amenity along streets and in adjoining public spaces, to a degree that is appropriate to the location and function of the road;
  - ii. providing a principal street facing façade of visual interest that contributes to the character and coherence of a centre;
  - iii. facilitating movement within a site and with the surrounding area for people of all mobilities and ages, by a range of modes of transport through well-defined, convenient and safe routes;
  - iv. enabling visitors to a centre to orientate themselves and find their way with strong visual and physical connections with the surrounding area;
  - v. promoting a safe environment for people and reflecting principles of [Crime Prevention through Environmental Design \(CPTED\)](#);
  - vi. enabling the re-use of buildings and sites while recognising the use for which the building is designed;
  - vii. incorporating principles of low impact design including energy efficiency, water conservation, the reuse of stormwater, on-site treatment of stormwater and/or integration with the wider catchment based approach to stormwater management, where practicable;
  - viii. achieving a visually attractive setting when viewed from the street and other public spaces, while managing effects on adjoining environments; and
  - ix. providing adequate and convenient space for storage while ensuring it is screened to not detract from the site's visual amenity values.
- b. Recognise the scale, form and design of the existing built form within a site and the immediately surrounding area and the functional and operational requirements of activities.
- c. Require residential development to be well-designed and laid out by ensuring a high quality healthy living environment through:
  - i. the provision of sufficient and conveniently located internal and outdoor living spaces;
  - ii. good accessibility within a development and with adjoining areas; and
  - iii. minimising disturbance from noise and activity in a centre (and the potential for reverse sensitivity issues to arise).

## Industrial (Chapter 16)

### 16.2.1 Objective - Recovery and growth

- a. The recovery and economic growth of the district's industry is supported and strengthened in existing and new greenfield industrial zones.

#### 16.2.1.1 Policy - Sufficient land supply

- a. Maintain a sufficient supply of industrial zoned land to meet future demand up to 2028, having regard to the requirements of different industries, and to avoid the need for industrial activities to locate in non-industrial zones.

#### 16.2.1.2 Policy - Enable the development of industrial areas to support recovery

- a. Encourage the redevelopment of existing industrial zones for industrial activities, particularly in areas that have lost industry and associated employment opportunities due to the earthquakes.

### 16.2.1.3 Policy - Range of industrial zones

- a. Recognise and provide for industrial zones with different functions that cater for a range of industrial and other compatible activities depending on their needs and effects as follows:
  - i. Industrial General Zone
    - A. Recognise and provide for industrial and other compatible activities that can operate in close proximity to more sensitive zones due to the nature and limited effects of activities including noise, odour, and traffic, providing a buffer between residential areas and the Industrial Heavy Zone.
  - ii. Industrial Heavy Zone
    - A. Recognise and provide for a full range of industrial and other compatible activities that generate potentially significant effects, including relatively high levels of noise, odour, heavy traffic movements, and the presence of significant amounts of hazardous substances, necessitating separation from more sensitive activities.
  - iii. Industrial Park Zone
    - A. Recognise and provide for industrial activities in the high technology sector and other industries in a high amenity environment dominated by open space and landscaping, and that generate higher volumes of traffic than other industries while having negligible effects in terms of noise, odour or the use and storage of hazardous substances.

#### 16.2.1.4 Policy - Activities in industrial zones

- a. Maintain and support the function of industrial zones while, subject to Clauses (b) and (c), providing for limited non-industrial activities that:
  - i. are ancillary in scale (subject to Clause (d)) and on the same site as a permitted or consented activity;
  - ii. are not appropriate in more sensitive environments due to their potential noise, odour or other environmental effects;
  - iii. comprise yard based supplier or trade suppliers in the Industrial General Zone;
  - iv. provide an emergency service and/or provide for community activities;
  - v. support the needs of workers and businesses in the zone including food and beverage outlets, commercial services, and the care of children;
  - vi. meet the convenience needs of residents, workers and businesses in the Industrial General Zone (Waterloo Park) in a Local Centre;
  - vii. are rural activities associated with the irrigation of food processing wastewater in the identified area of the Industrial Heavy Zone (South West Hornby) (Appendix 16.8.8) that is integral to the ongoing operation of an established industrial activity.
- b. Avoid any activity in industrial zones with the potential to hinder or constrain the establishment or ongoing operation or development of industrial activities and strategic infrastructure. This includes but is not limited to avoiding:
  - i. sensitive activities located within the 50 dB L<sub>dn</sub> Air Noise Contour, the Lyttelton Port Influences Overlay Area and in proximity to the National Grid;
  - ii. discretionary or non-complying activities in close proximity to bulk fuel storage facilities unless a quantitative risk assessment establishes that the proposed activity in its location meets risk acceptability criteria appropriate to the applicable land use. (Plan Change No. 1)
- c. Avoid the use of industrial zones for non-industrial activities that could adversely affect the strategic role of the Central City, District Centres and Neighbourhood Centres as focal points for commercial activities, community activities, residential activities, and other activities.
- d. Provide for ancillary activities, recognising their role in supporting industry, while being incidental in scale and function to a principal activity on the same site, and not inconsistent with Clauses b. and c..

### 16.2.1.5 Policy - Office development

- a. Avoid office development in industrial areas other than where it is:
  - i. ancillary to a permitted or consented activity on the same site (subject to Policy 16.2.1.4 (d));
  - ii. a secondary component to a high technology industrial activity located in the Industrial Park Zone that supports the function of the zone for primarily industrial activities.

### 16.2.2 Objective - Brownfield redevelopment

- a. The recovery and economic growth of the Christchurch District is provided for by enabling redevelopment, including mixed-use development, of appropriate brownfield sites while not compromising the function of the wider industrial area for primarily industrial activities.

Advice note:

- 1. 16.2.2 Objective - Brownfield development and 16.2.2.1 Policy - Brownfield site identification and 16.2.2.2 Policy - Brownfield redevelopment are the only objective and policies in the Industrial Chapter to be considered for any proposal for residential or mixed-use development of a brownfield site.

#### 16.2.2.1 Policy - Brownfield site identification

- a. Unless a site is identified by a 'brownfield' overlay on the planning maps, a brownfield site shall meet the following criteria:
  - i. the land is abandoned or underutilised industrial land, or no longer required by a requiring authority for a designated purpose; and
  - ii. the redevelopment of the brownfield site will not adversely affect the supply of land to meet anticipated needs of industrial activities to 2028, including industrial activities with specific locational requirements; and
  - iii. the brownfield site is in a location that is not surrounded by industrial activities and/or will not erode the anticipated outcomes, including the function and amenity levels, of those parts of the zone not subject to brownfield redevelopment.

### 16.2.2.2 Policy - Brownfield redevelopment

- a. Support the redevelopment of brownfield sites for residential activities or mixed use activities including a limited quantum of commercial activities.
- b. Brownfield regeneration proposals shall ensure that:
  - i. any residential or mixed use development will not give rise to reverse sensitivity effects on existing industrial activities, or other effects that may hinder or constrain the establishment or ongoing operation or development of industrial activities and strategic infrastructure;
  - ii. the safety and efficiency of the current and future transport system is not significantly adversely affected;
  - iii. an appropriate level of residential amenity can be achieved on the site;
  - iv. the site enhances connectivity to public transport routes, commercial and community services, and open space where appropriate;
  - v. any contaminated land is managed in accordance with national and regional standards;
  - vi. the redevelopment maintains the strategic role of commercial centres as the focal points for commercial and other activities, and the efficient and effective use of land and/or community and transport infrastructure investment in centres; and
  - vii. the environmental and cultural values of waterways within or adjoining the site are recognised and provided for in any redevelopment.

### 16.2.3 Objective - Effects of industrial activities

- a. Adverse effects of industrial activities and development on the environment are managed to support the anticipated outcome for the zone while recognising that sites adjoining an industrial zone will not have the same level of amenity anticipated by the Plan as other areas with the same zoning.
- b. The cultural values of Ngāi Tahu/ mana whenua are recognised, protected and enhanced through the use of indigenous species in landscaping and tree planting, a multi-value approach to stormwater management in greenfield areas, low impact urban design, and the protection and enhancement of wāhi tapu and wāhi taonga including waipuna.

### 16.2.3.2 Policy - Managing effects on the environment

- a. The effects of development and activities in industrial zones, including reverse sensitivity effects on existing industrial activities as well as, visual, traffic, noise, glare and other effects, are managed through the location of uses, controls on bulk and form, landscaping and screening, particularly at the interface with arterial roads fulfilling a gateway function, and rural and residential areas, while recognising the functional needs of the activity.
- b. Effects of industrial activities are managed in a way that the level of residential amenity (including health, safety, and privacy of residents) adjoining an industrial zone is not adversely affected while recognising that it may be of a lower level than other residential areas.
- c. Development and activities are managed to avoid adverse effects on strategic infrastructure within or in proximity to industrial zones.
- d. The quantity of wastewater discharged in areas over unconfined or semi-confined aquifers is restricted to minimise any risk of contamination.
- e. The cultural values of Ngāi Tahu/mana whenua are recognised and supported through the protection of wāhi tapu and wāhi taonga, including waipuna, from the adverse effects of development, through the use of low impact urban design, use of indigenous species appropriate to the local environment, and stormwater management.
- f. Development in the Industrial Park Zone is designed and laid out to promote a safe environment and reflects principles of Crime Prevention through Environmental Design (CPTED).

### 16.2.3.3 Policy - Managing stormwater

- a. Ensure that stormwater is managed in a way that:
  - i. mitigates the adverse effects of flooding; and
  - ii. improves water quality in a manner which is consistent with maintaining environmental and public health.
- b. Encourage methods that achieve:
  - i. a multi-value approach, using swales, wetlands, infiltration and retention basins, having regard to the location and environmental constraints; and
  - ii. integration with the wider network, reflecting a catchment based approach.

## **Appendix U – Possible Consent Conditions**

## Recommended Consent Conditions<sup>1</sup>

### Operational Matters

1. The hours of operation of the supermarket and fuel stations shall be restricted to between the hours of 7am and 11pm, seven days per week.
2. Underground tank refuelling and associated tanker movements shall not occur between the hours of 7am and 11pm.
3. The fuel tanker shall enter the site via the Lydia Street right-of-way and exit via the signalised intersection onto Main North road.
4. Heavy vehicle deliveries shall not occur between the hours of 3pm and 6pm.

### Earthworks

5. Excavation/filling shall proceed in general accordance with the information submitted and plans lodged, and entered into Council records under land use consent number RMA/2018/2029.
6. The Consent Holder shall notify Council and all properties that adjoin the application site at least 3 working days prior to the commencement of any works associated with this resource consent (including stockpiling of any material to be used in the work). The notification shall be provided to the Council, Attention: Monitoring Officer by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) and shall include detail of the length of time earthworks and associated works are anticipated to take.
7. No construction work, with the exception of dust and sediment control, shall be undertaken on Sundays, Public Holidays, or outside the hours of 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 6.00 pm Saturday without the Council's prior approval
8. All proposed works shall to be carried out in accordance with an approved Construction Management Plan (CMP). The purpose of the CMP is to ensure that any potential effects arising from construction activities on the site are effectively managed. The CMP shall be prepared by a suitably qualified and experienced practitioner.
9. The CMP shall include, but not be limited to, the following:
  - a) Site description, topography, vegetation, soils and other reference information;
  - b) Details of proposed works;
  - c) Roles and responsibilities, including contact details for the site manager appointed by the Consent Holder who will be responsible for ensuring that compliance with conditions of this consent is observed at all times, and contact details of a suitably qualified engineer who the earthworks and construction work will be under the control of;
  - d) Site establishment;
  - e) Timing of works including a proposed timeframe and completion date;
  - f) An Erosion and Soil Control Plan (ESCP), including (but not limited to): a map showing the location of all works; detailed plans showing the location of sediment and dust control measures, on-site catchment boundaries and sources of runoff; drawing and specifications of designated sediment and dust control measures (including dust control equipment such as water hose and sprinkler systems); installation of devices until the

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<sup>1</sup> NB: Those conditions in black the Applicant has reviewed and confirmed they are satisfied with. Those in red have not been reviewed / agreed upon.

site is stabilised; and inspection and maintenance schedules for the sediment and dust control measures;

- g) Construction noise management measures;
- h) Site access and Traffic Management measures;
- i) Storage of fuel and/or lubricants and any handling procedures;
- j) Contingency plans (including use of spill kits);
- k) Protocols for the discovery of archaeological material;
- l) Construction traffic management measures, including measures to be adopted in accordance with the NZTA Code of Practice for Temporary Traffic Management;
- m) On-site parking areas for construction staff;
- n) Measures for identification and remediation of contaminated soil; and Environmental compliance monitoring and reporting.

10. The Consent Holder shall submit the CMP to Council, Attention: Team Leader Compliance and Investigations for certification via email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) at least 20 working days prior to the commencement of construction work associated with this consent. The CMP is to be certified by the Team Leader or their nominee as meeting the requirements of **Condition 9** prior to the commencement of any construction work and, once certified, the CMP will thereafter form part of the Approved Consent Document.

*NOTE: The Team Leader (or their nominee) will either certify, or refuse to certify, the CMP within 10 working days of receipt. Should the Team Leader (or their nominee) refuse to certify the CMP, then they will provide a letter outlining why certification is refused based on the parameters contained in this condition.*

11. Should the Team Leader (or their nominee) refuse to certify the CMP, the Consent Holder shall submit a revised CMP to the Resource Consents Manager for certification. The certification process shall follow the same procedure and requirements as outlined in **Conditions 9 and 10.**

12. No construction work shall commence on site until such time as:

- a) The approved Erosion and Sediment Control measures are in place and;
- b) The Consent Holder has submitted an "Engineering Completion Certificate" (as per IDS – Part 3, Appendix VII) to the Council. This Certificate shall be signed by an appropriately qualified and experienced engineer and attest that the erosion and sediment control measures have been properly installed and in accordance with ECAN Erosion and Sediment Control Toolbox for Canterbury (<http://escscanterbury.co.nz>). This certificate shall also name the person(s) responsible for the maintenance of these measures. The Consent Holder shall submit this certificate to the Council, Attention: Subdivision Engineer, by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) at least five working days prior to the commencement of any construction work.

13. The CMP may be amended at any time by the Consent Holder. Any amendments to the CMP shall be submitted by the Consent Holder to the Council for certification. Any amendments to the CMP shall be:

- a) for the purposes of improving the measures outlined in the CMP for achieving the CMP purpose (**see Condition 8**), and;
- b) consistent with the conditions of this resource consent.

If the amended CMP is certified, then it becomes the certified CMP for the purposes of **Condition 8** and will thereafter form part of the Approved Consent Document

14. The footpaths and roads to and from the site are to remain tidy at all times. These will need to be regularly monitored and swept or vacuumed if necessary at the end of each day.

15. All loading and unloading of trucks with excavation or fill material is to be carried out within the subject site. Any stockpiles shall be placed as far as practicable from internal boundaries adjoining residential properties.
16. All proposed works shall be carried out in accordance with an approved Traffic Management Plan (TMP). The Consent Holder shall prepare a TMP and submit this to Council through the TMP portal on <http://tmpforchch.co.nz/submit-a-tmp/>, at least 10 working days prior to the commencement of construction work associated with this consent. The TMP shall identify the nature and extent of temporary traffic management and how all road users will be managed by the use of temporary traffic management measures and comply with the NZTA Code of Practice for Temporary Traffic Management (CoPTTM). The TMP shall also identify the provision of on-site parking for construction staff. Activities on any public road should be planned so as to cause as little disruption, peak traffic delay or inconvenience to road users as possible without compromising safety.
17. All construction work (including any demolition and/or site preparation works) shall be designed, managed and conducted to ensure that construction noise complies with the requirements of NZS 6803:1999 Acoustics – Construction Noise for residential / rural / industrial / commercial areas (see applicable Table on Page 11 of this standard).
18. Vibration from construction work shall not exceed the limits of, and shall be measured and assessed in accordance with, German Standard DIN 4150 1999-02 Structural Vibration – Effects of Vibration on Structures.
19. Any change in ground levels is not to cause a ponding or drainage nuisance to neighbouring properties, or the stability of the ground or fences of neighbouring properties.
20. The fill sites shall be stripped of vegetation and any topsoil prior to filling. The content of fill shall be clean fill, in accordance with the District Plan definition of “clean fill”.
21. All fill material shall be well compacted in layers not exceeding 200mm in depth. The fill material is to be placed, compacted and tested in accordance with the Code of Practice for Earthfill NZS 4431: 1989. At the completion of the work, an engineering report including a duly completed certificate in the form of Appendix A of NZS 4431 shall be submitted to Council, Attention: Subdivision Engineer by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz) so that the information can be placed on the property record. This report shall detail fill depths, fill material(s), compaction test results and include as-built plans showing the location of the fill.
22. Any public road, footpath, landscaped areas or service structures that have been affected / damaged by contractor(s), Consent Holder, developer, persons involved with earthwork development or vehicles and machineries used in relation to the earthworks / construction works associated with this resource consent shall be reinstated to the current version of the Christchurch City Council Construction Standard Specifications (CSS) on the expense of those identified as above and to the satisfaction of Council’s Subdivision Engineer.

### **Street Trees**

23. Earthworks within 5m of any street tree shall be undertaken in accordance with Christchurch City Council Construction Standard Specifications, Part One, Section 19.4 Protection of Existing Trees.
24. The Consent Holder shall appoint a suitably experienced and qualified Arborist (Appointed Arborist) that is approved by the Christchurch City Council Arborist, to monitor and supervise all earthworks within the 5m setback area of any street tree during the proposed work.

*Advice Note: The Appointed Arborist may consider it necessary to undertake the excavation works within 5m of a street tree themselves, in order to ensure root damage is minimised. This shall be at the discretion of the Appointed Arborist.*

25. Prior to any earthworks commencing within 5m of a street tree, a meeting shall be held so the tree protection measures can be discussed by the appointed Arborist with the Consent Holder/Site Manager, contractor and any sub-contractors who will be working on the site in proximity to the tree.  
At the meeting, the following shall be agreed:
  - a) Areas for storing and/or stockpiling materials, spoil and equipment;
  - b) Protection of roots within the setback area and protective fencing; and
  - c) Correct procedures when working around the tree.
26. The Site Manager shall have a copy of this resource consent, including the consent recommendations. The Site Manager shall keep a copy of the consent on site at all times and shall be responsible for informing the labour force with regard to the conditions of the consent.
27. Temporary protective fencing shall be employed to isolate a street tree within 5m of which earthworks are to occur from activities for the duration of the proposed earthworks.
28. The protective fencing required by **Condition 27** shall be positioned to maximise the tree protection area, whilst allowing a safe work area for the works to occur. The Appointed Arborist shall determine the exact position of the protective fencing in consultation with the Site Manager.
29. Protective fencing shall be erected before any works commence within 5m of a street tree, and shall not be removed or moved until that section of work is complete, without the prior approval of the Council's Arborist.
30. All accidental damage to a street tree or protection barriers shall be reported to the Site Manager immediately. Works occurring within the 5m setback will cease until adequate tree protection measures are rectified. The Appointed Arborist shall make a record of the damage and, in consultation with the Site Manager, action remediation measures.
31. Excavation and reinstatement of soil within 5m of a street tree shall be done by hand or air spade. No ripping or tearing of roots (including the root plate itself) shall occur.
32. If any roots encountered at the levels to be excavated have to be severed, they shall be severed cleanly with pruning secateurs or a hand saw. All root pruning shall be carried out by the Appointed Arborist, and shall occur where, in the opinion of the Appointed Arborist, the root pruning will have no more than minor effects on the health of the tree.
33. When soil is cleared around the roots of any street tree to be retained, the roots shall be protected from desiccation and damage by the use of damp Hessian or good quality topsoil, as specified by the Appointed Arborist.
34. Following any excavations within 5m of a street tree, backfilling shall take place at the earliest opportunity and, prior to backfilling, any protective material over the roots shall be removed. The backfill material shall be of sufficient quality to allow for the continued growth/health of the root system.
35. The excavation within 5m of a street tree shall be lined with a heavy grade pvc or similar impervious membrane, so that any raw concrete does not contact any exposed root mass.
36. Any heavy machinery shall avoid coming within the 5m setback of a street tree, except where the surface is already sealed, or specialised mats have been installed to spread the loading sufficiently to protect the ground from being compacted around the tree root systems.
37. No materials or machinery/vehicles shall be stored/parked within the 5m setback of a street tree during the work, including excavated soil, chemicals or building materials.

38. No water used to wash down machinery (e.g. concrete mixers) likely to contain concrete or fuel shall be disposed of on the root plate of any street tree.
39. To mitigate the loss of the three street trees (2x Scarlet Oaks, ID 44401 and ID 44404, and 1x Silver Birch, ID 44403), three replacement trees shall be planted in the median strip of Main North Road. The Consent Holder shall bear the cost of the planting operation. The exact species of the trees and location in the median strip area shall be determined in conjunction with the City Council Street Tree Arborist.

### **Waterway**

40. Planting and existing trees that currently screen or shade the waterway shall be maintained provided they are not within the direct area in which works will occur; plants shall be replaced should they become diseased or die.
41. The piping and works within the setback of Lydia Street Drain shall not commence until an Environmental and Risk Management Plan, which mitigates the potential effects of erosion and sediment release within the waterway is submitted and approved by the Christchurch City Council Subdivision Engineer, or nominee by way of email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz).

### **Noise**

42. At least 20 working days prior to opening of the premises to the public, the consent holder shall erect a 2m high acoustic fence along the site boundary with all residentially zoned properties to the north. The acoustic fencing shall have a minimum surface mass of at least 8.0kg/m<sup>2</sup>. This fencing shall be continuous and maintained without gaps, crack or holes.

*Advice notes: Materials meeting the surface mass specification include 20mm thick timber overlapped or in a board and batten configuration, or a range of proprietary building materials such as Hardiflex, Titan Board, concrete block, or Hebel panel.*

*Where a timber fence is to be constructed, this shall require timber palings to be well-overlapped (25mm minimum) or a "board and batten" system, and a sleeper rail connecting the base of the palings to the ground.*

43. The operation of the proposed activity shall be undertaken in accordance with a Noise Management Plan (NMP). The purpose of the NMP is to ensure that the noise associated with the operation of the premises does not exceed a reasonable level. The NMP shall be prepared by a suitably qualified and experienced acoustic engineer. A copy of the approved NMP shall be kept on the premises at all times.
44. At least 20 working days prior to opening the premises to the public, the consent holder shall submit a draft Noise Management Plan (NMP) to Council for certification (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)). The noise management plan is to address noise mitigation practices related to the operation of the premises, in particular practices around deliveries, service vehicles, material handling, staff and driver behaviour, noise control, fence maintenance and any other opportunities identified to mitigate noise effects. The NMP shall also detail the means by which noise complaints shall be received, recorded and investigated; and how the NMP shall be reviewed either as the outcome of a complaint or otherwise at regular intervals. Once certified, the NMP will thereafter form part of the Approved Consent Document.

**NOTE:** *The Team Leader will either certify, or refuse to certify, the NMP within 10 working days of receipt. Should the Team Leader refuse to certify the NMP, then they shall provide a letter outlining why certification is refused based on the parameters contained in this condition.*

45. Should the Team Leader refuse to certify the NMP, the Consent Holder shall submit a revised NMP to the Team Leader for certification. The certification process shall follow the same procedure and requirements as outlined in **Condition 44**.

46. The NMP may be amended at any time by the Consent Holder. Any amendments to the NMP shall be submitted by the consent holder to the Team Leader for certification. Any amendments to the NMP shall be:
- a) for the purposes of improving the measures outlined in the NMP for achieving the NMP purpose (see condition 43);
  - b) consistent with the conditions of this resource consent; and
  - c) prepared by an appropriately qualified and experienced acoustic engineer.

If the amended NMP is certified, then it becomes the certified NMP for the purposes of Condition 43 and will thereafter form part of the Approved Consent Document.

## Lighting

47. Lighting of the vehicle and pedestrian access from Lydia Street to the front (eastern) end of the supermarket building and the loading / car park area at the rear of the supermarket building (west) shall meet the requirements of AS/NZS1158.3.1 for outdoor car parks. In all other car parking and vehicle access areas illumination provided by lighting shall achieve a minimum of at least two lux with high uniformity during the hours of darkness.
48. Where it is practicable to do so, all exterior lighting shall be directed away from adjacent properties and roads. Where this is not practicable then flat glass luminaires shall be used to mitigate the potential for glare.
49. There shall be no light spill at any residential boundary exceeding four lux. The point of measurement for the lux spill is either at a point 2 metres inside the boundary, or at the closest window, whichever is the nearer, of the property affected by glare from the proposed activity.
50. There shall be no light spill onto Main North Road exceeding 2.5 lux (horizontal or vertical).
51. Illumination provided by outdoor lighting shall be measured by a suitably qualified person and the results provided to the Council's Monitoring team (email to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) at least ten working days prior to the opening of the premises to the public. This requirement does not include measurement of illumination within the road reserve of Main North Road.

## Landscaping

52. The proposed landscaping shall be established in accordance with the Landscape Plans labelled RMA/2018/ Pages xxx and xxx of the Approved Consent Document except as required by Conditions 53 to 68.
53. All landscaping required for this consent shall be planted within the first planting season (1 April to 30 September) following construction.
54. The following exotic species no longer form part of the indicative species list set out on the Landscape Master Plan forming page xxx of the Approved Consent Document, unless specifically provided for by Conditions 55, 56, and 57:
- *Alnus cordata* (Alder),
  - *Platanus orientalis* 'Autumn Glory', (Plane Tree)
  - *Liriodendron tulipifera* 'fastigata' (Upright Tulip Tree),
  - *Lomandra* 'Tanika',
  - *Penstemon* spp.,
  - *Rudbeckia* spp., and
  - *Thymus* spp.

55. The seven carpark trees shown on the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document, shall be of the following species:
  - *Alnus cordata* (Alder),
  - *Cordyline australis* (NZ Cabbage Tree),
  - *Platanus orientalis* 'Autumn Glory' (Plane Tree),
  - *Pseudopanax* spp.,
  - *Liriodendron tulipifera* 'fastigata' (Upright Tulip Tree).
56. The eight street frontage trees shown on the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document shall be *Liriodendron tulipifera* 'fastigata' (Upright Tulip Tree) specimens.
57. An additional two street frontage trees, being Upright Tulip *Liriodendron tulipifera* 'fastigata' (Upright Tulip Tree) specimens, shall be planted in the landscape strip between the front of the fuel facility canopy and Main North Road.
58. With the exception of *Cordyline* and *Pseudopanax* spp., the proposed trees shown on the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document must be at least 2.5m in height at the time of planting, with a minimum calliper of 35mm.
59. All trees to be planted within the car park area will be planted in Stratavault tree pits (or an equivalent style of structural cell tree planting system). All other trees will be planted in tree pits that are three times the width of the root ball of the tree, with a minimum depth of 1.5 times the depth of the root ball. These tree pits are to be back filled with an 80% unscreened topsoil and 20% soil conditioner mix.
60. All car park trees and other trees to be planted as visual mitigation shall not be topped, and will be allowed to mature to their full natural height.
61. The proposed hedge to be located along the Main North Road boundary, as shown on the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document, shall be maintained at a height of no more than 1.0m.
62. The seven carpark trees shown on the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document will be pruned to lift the tree canopy (lower-most limbs) to a minimum of 2.5m from the ground. Trees with a columnar growth form will not require this type of pruning.
63. Additional tree specimens will be provided at the northern entrance to the supermarket (1 x tree), and at the southern end of the supermarket building (1 x tree) adjacent to the cycle stand and seating area.
64. An additional 1.5m wide landscape strip containing at least two street frontage tree specimens will be provided along-side the pedestrian path adjoining the left turning lane from the site onto main North Road. This landscaping is to be located to the east of the bollarded heavy vehicle route, directly adjoining the group of five car park spaces.
65. The existing mature *Tilia* tree as shown the Landscape Plan labelled RMA/2018/2029 Page 4 of the Approved Consent Document, shall be maintained in perpetuity.
66. Tree planting in the 1.5m landscaping strip adjacent to the boundaries with 9, 11, and 11a Northcote Road are to be spaced a minimum of 3.0m apart and of a species capable of reaching 6.0m at maturity.

67. All landscaping required for this consent shall be maintained. Any dead, diseased, or damaged landscaping shall be replaced by the consent holder within the following planting season (extending from 1 April to 30 September) with trees/shrubs of similar species.
68. No fence, wall or other structure of vegetation that exceeds 1m in height shall be established / erected within visibility splays at vehicle entrances.

### **Crime Prevention Through Environmental Design**

69. The ramp to the basement carpark will be locked outside of the opening hours of the supermarket (11pm to 7am, seven days per week).

### **Contaminated Land**

70. Detailed Site Investigation (DSI)

Identified areas with past/present HAIL activities as reported in Pattle Delamore Partners Preliminary Site Investigation (July 2018) shall be investigated by a suitably qualified and experienced practitioner in accordance with the National Environment Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS) and Ministry for the Environment Guidelines prior to the redevelopment works. All soil sampling and investigation reports are to be provided to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) and to Environment Canterbury (at Contaminated.Land@ecan.govt.nz).

71. Site Management Plan (SMP) / Remedial Action Plan (RAP)

Based on the findings of the soil sampling investigations identified above, and if deemed required by a suitably qualified and experienced practitioner, a SMP and/or RAP shall be prepared to provide controls and protocols for the soil disturbance works during development of the site to ensure all excavation and soil removal works are carried out to protect human health. A copy of the SMP and/or RAP is to be provided to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) prior to the commencement of any site excavation works.

72. The SMP and/or RAP shall include an Accidental Discovery Protocol in the event of discovery of contaminated material beyond that identified in the Detailed Site Investigation.
73. Any changes to the SMP and/or RAP shall be submitted to Council (Attention: Team Leader Environmental Compliance; [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz)) for certification prior to the changes taking effect. The Council's Senior Environmental Health Officer shall certify or require changes to the proposed amendments within 2 working days of the SMP/RAP being submitted.

74. Soil Disposal

All soil removed from the site must be transported and disposed to a consented landfill/cleanfill suitable to receive such material. Evidence of any soil disposal shall be by way of a soil waste transfer manifest. The soil manifests are to be provided to Council no later than 3 months upon completion of the excavation and soil removal works. These soil manifests shall be emailed to [rcmon@ccc.govt.nz](mailto:rcmon@ccc.govt.nz).

### **Flooding**

75. The basement car parking area shall be constructed such that only elements (including but not limited to construction materials and linings) designed to withstand the impact of flood inundation through durability/water-resistance are located below 19.49m RL (Christchurch City Datum).
76. All electrical outlets and wiring will be located above 17.20m RL (Christchurch City Datum).