Industrial Plan Change, Fairton - Integrated Transport Assessment

Executive Summary

Abley Ltd (Abley) was engaged by Talley's Group Ltd (Talley's) to prepare an Integrated Transport Assessment (ITA) report to support a private plan change (PC) application in Fairton, on the outskirts of Ashburton. Talley's seek to change the zoning of the 109 Works Road, Fairton (the site) to enable industrial development activities.

This site is currently zoned Business F under the Ashburton District Plan (ADP). This is a bespoke zone that was created for the previous landowner, Silver Fern Farms (SFF). Talley's have since purchased the land from SFF and propose to change the zoning to Business E, which allows for more traditional industrial and/or service activities such as transport, storage, processing and/or assembling type activities.

Traffic surveys were undertaken to establish the baseline traffic flows at key intersections to inform a transportation modelling assessment of the proposed PC. The modelling assessment confirms that the existing transportation network can accommodate the development traffic from the PC site and this has accounted for 10 years of background traffic growth on the State Highway network.

An ODP has been developed for the site which demonstrates how the site will connect with the existing transport network for all modes. The new road widths have been designed in accordance with NZS4404:2010 as required by the ADP. The PC has also been assessed as being consistent with key regional and local level transport policy.

The proposed PC can be supported from a transport planning and engineering perspective and there are no transport related reasons why the PC should not be approved.

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Quality Assurance Information

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30 July 2024	Draft	Dave Smith
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1. Introduction

1.1 Overview

Abley Ltd (Abley) was engaged by Talley's Group Ltd (Talley's) to prepare an Integrated Transport Assessment (ITA) report to support a private plan change (PC) application in Fairton, on the outskirts of Ashburton. Talley's seek to change the zoning of the 109 Works Road, Fairton (the site) to enable industrial development activities.

This site is currently zoned Business F under the Ashburton District Plan (ADP). This is a bespoke zone that was created for the previous landowner, Silver Fern Farms (SFF). Talley's have since purchased the land from SFF and propose to change the zoning to Business E, which allows for more traditional industrial and/or service activities such as transport, storage, processing and/or assembling type activities.

2. Existing Site

The site is located in Fairton, which is approximately 7.5km north-east of central Ashburton, Canterbury. The site previously contained the SFF Fairton Freezing Works, which was decommissioned in 2019. Buildings remain utilised onsite with several older buildings now demolished. The site is shown in Figure 2.1. It has frontage to Fairfield Road West along its northeastern boundary and JB Cullen Drive along its southwestern boundary.

Figure 2.1 The site. (Source: Canterbury Maps)

2.1 Surrounding Area

The Ashburton Business Park (ABP), which was a development recently undertaken by Ashburton District Council (ADC), is located directly west of the site. Access to the ABP is provided from State Highway 1 via Northpark Road and Works Road. The adjacent business park is approximately 100 hectares with development of the individual lots ongoing.

Located to the east of the site is Fairton, a small urban settlement. Fairton is mostly residential with Fairton Rural Primary School and community hall located adjacent to the intersection of Works Road and Fairfield Road.

2.2 Current Zoning

The site is currently zoned Business F with an Outline Development Plan (ODP) overlay in the Ashburton District Plan (ADP). The ODP splits the site into two areas. Area 1 is the smaller area which allows meat processing, food and produce processing. Area 2 is much larger and allows for effluent and wastewater treatment / disposal, forestry and farming activities.

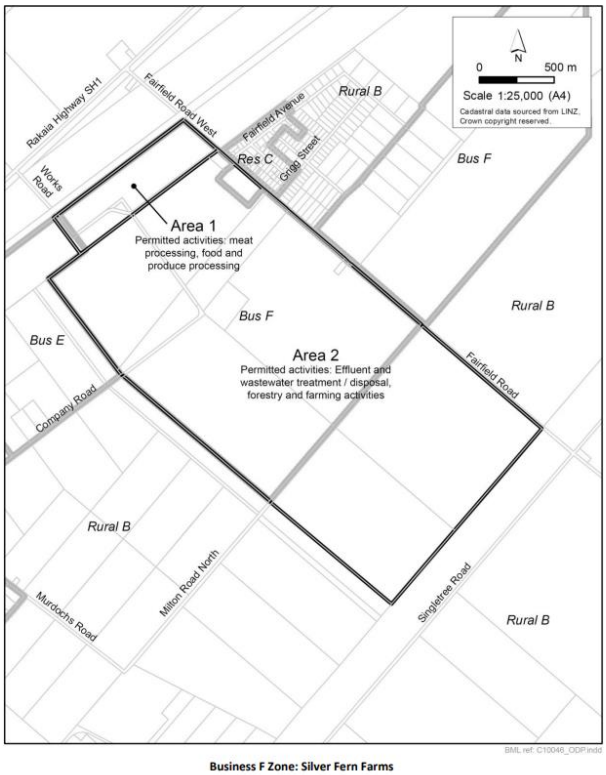


Figure 2.2 Current ODP for Site. (Source: Ashburton District Plan).

The current zoning provisions are bespoke and were developed to suit the needs of the previous landowner (Silver Fern Farms).

2.3 Current Access

The site has an existing private roading network with access from JB Cullen Drive along its southwestern boundary, Fairfield Road along its eastern boundary (which together forms the main east-west route through the site), and Company Road along its southern boundary (north-south). These two roads intersect at the southern boundary of 109 Works Road.

There is an additional connection extending from Fairfield Road west in the form of Office Road (which is also currently a private road). This previously operated as a secondary connection into the freezing works and also services a handful of residential sites.

Figure 2.3 shows the existing roading connections.

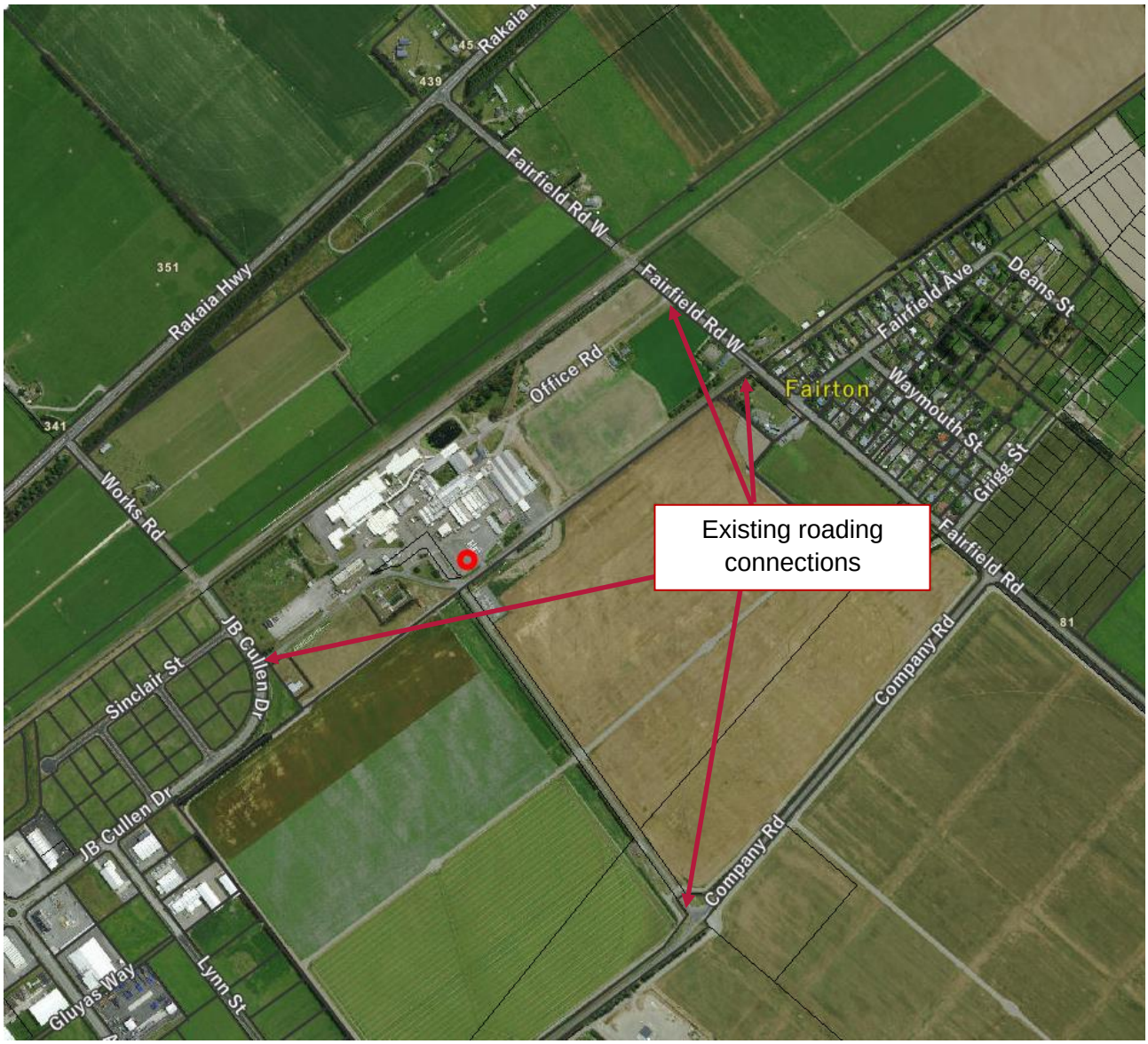


Figure 2.3 Current access provisions. (Source: Canterbury Maps).

2.4 Approved Developments

Fairfield Freight Hub

Fairfield Freight Hub (FFH) has been issued resource consent to operate at the north-western corner of the site. Refer to Figure 2.4.

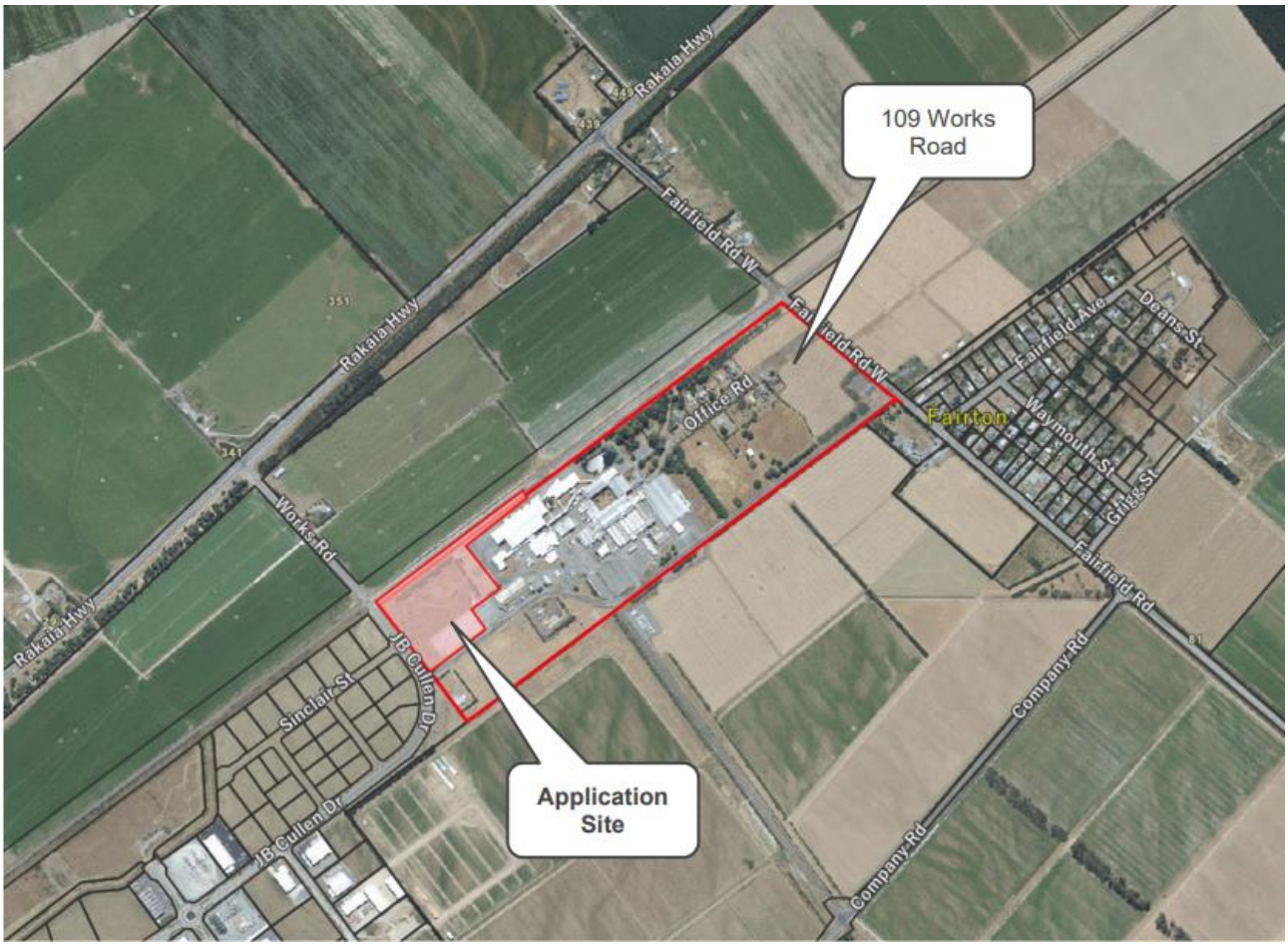


Figure 2.4 Fairfield Freight Hub location. (Source: NovoGroup).

Having reviewed the ITA report prepare by NovoGroup in support of that resource consent application, the FFH includes:

- approximately 3.6ha of 109 Works Road for development.
- container terminal / freight logistics facility to operate in conjunction with a new railway siding to be constructed by KiwiRail adjacent to the northwest site boundary.
- 2,000m² warehouse building.
- 192m² office building.
- container wash.
- fumigation bays.

There will be 26 onsite car parking spaces and onsite loading facilities. The estimated peak traffic flow is 42vph and 250vpd during peak operation. This equates to a trip generation rate in the order of 11.6 trips per ha per peak hour. The majority of this traffic is expected to use Works Road / SH1 with a small amount expected to use Northpark Road / SH1.

Solar Farm

There is a solar farm located at the northwestern corner of the site occupying approximately 6.4ha of the total area. Access is shown via the existing access points, one via Fairfield Road and

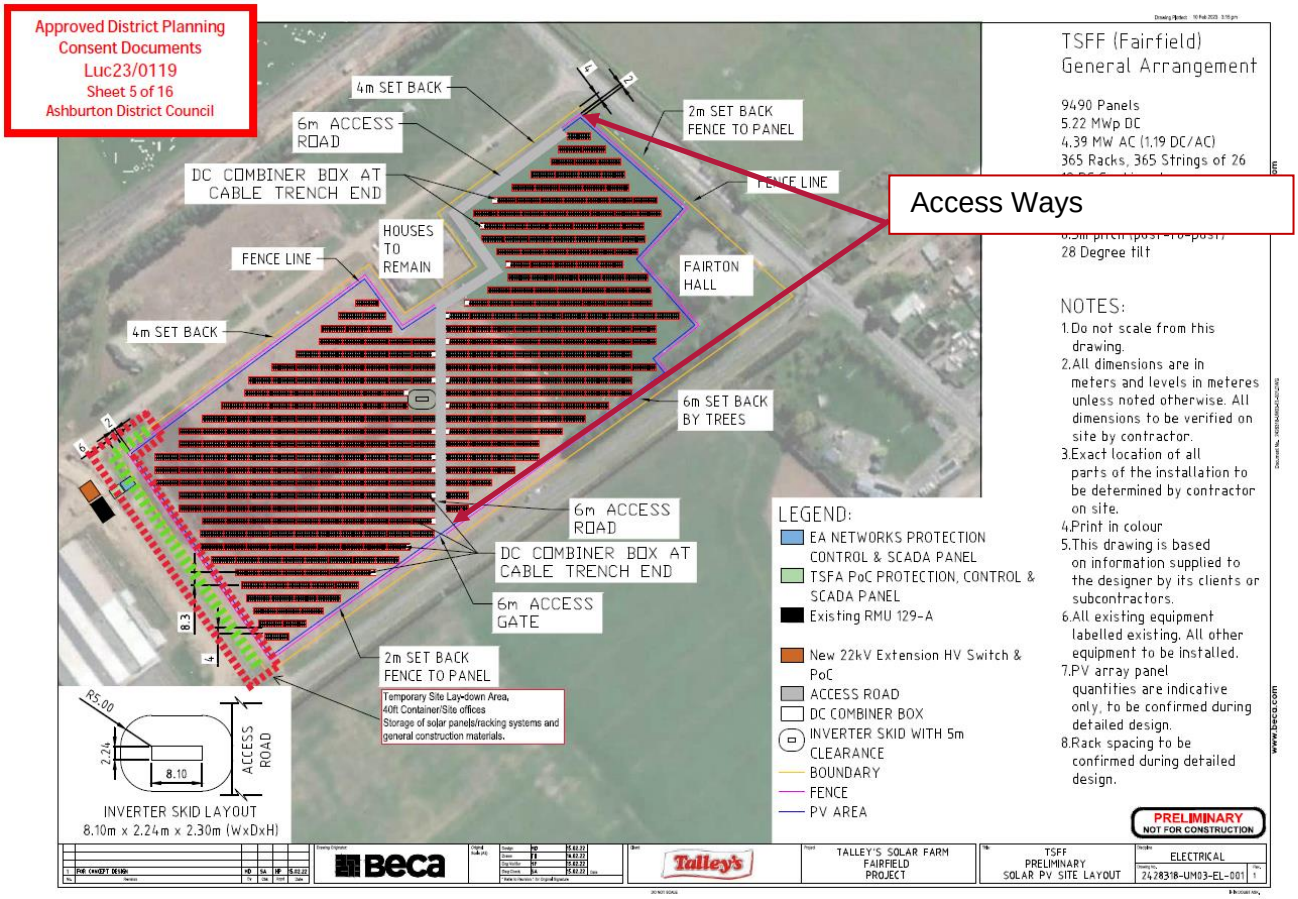


Figure 2.5 Approved layout for Solar Farm. (Source: LUC23.0119 approved plans).

The application documents suggest that there could be up to 64 vehicle trips per day to each solar farm area (128 total) during construction, but movements once operational will be minimal.

3. Relevant Planning Considerations

It is noted that when the ABP was rezoned there was a private agreement developed between the developer (Ashburton District Council) and NZTA which related to the upgrading of the Works Road / SH1 and Northpark Road / SH1 intersections. For ease of reference, these intersections shown circled in Figure 4.1.

Figure 3.1 Works Road / SH1 and Northpark Road / SH1. (Source: Canterbury Maps).

We understand that the developer and NZTA agreed the following trigger points, at which point the existing at-grade intersections would need fully grade-separated. Refer to Figure 3.2.

Intersection Leg	Average Delay	Average Queue Length
Northpark Road – Peak		
Left Turn Out	25sec (LOS C)	13 vehicles (LOS C)
Right Turn In	25sec (LOS C)	13 vehicles (LOS C)
Left Turn In	25sec (LOS C)	13 vehicles (LOS C)
Right Turn Out	35sec (LOS D)	3 vehicles (LOS A)
Northpark Road – Other		
Left Turn Out	15 sec (LOS B)	9 vehicles (LOS B)
Right Turn In	15 sec (LOS B)	9 vehicles (LOS B)
Left Turn In	15 sec (LOS B)	9 vehicles (LOS B)
Right Turn Out	25 sec (LOS C)	2 vehicles (LOS A)
Works Road – Peak		
Left Turn Out	25sec (LOS C)	13 vehicles (LOS C)
Right Turn In	25sec (LOS C)	13 vehicles (LOS C)
Left Turn In	25sec (LOS C)	13 vehicles (LOS C)
Right Turn Out	35sec (LOS D)	3 vehicles (LOS A)
Works Road – Other		
Left Turn Out	15 sec (LOS B)	9 vehicles (LOS B)
Right Turn In	15 sec (LOS B)	9 vehicles (LOS B)
Left Turn In	15 sec (LOS B)	9 vehicles (LOS B)
Right Turn Out	25 sec (LOS C)	2 vehicles (LOS A)

Figure 3.2 Trigger points for when intersection upgrades are required. (Source: Ashburton District Council).

These thresholds have been considered as part of our transport modelling assessment in Section 9.3.

4. Transportation Environment

4.1 Existing Network

Overview

The site, shown in Figure 4.1, is located less than 1km south of Rakaia Highway/State Highway 1 (SH1). It lies between JB Cullen Drive and Fairfield Road, both of which intersect with SH1 at their northern extents.

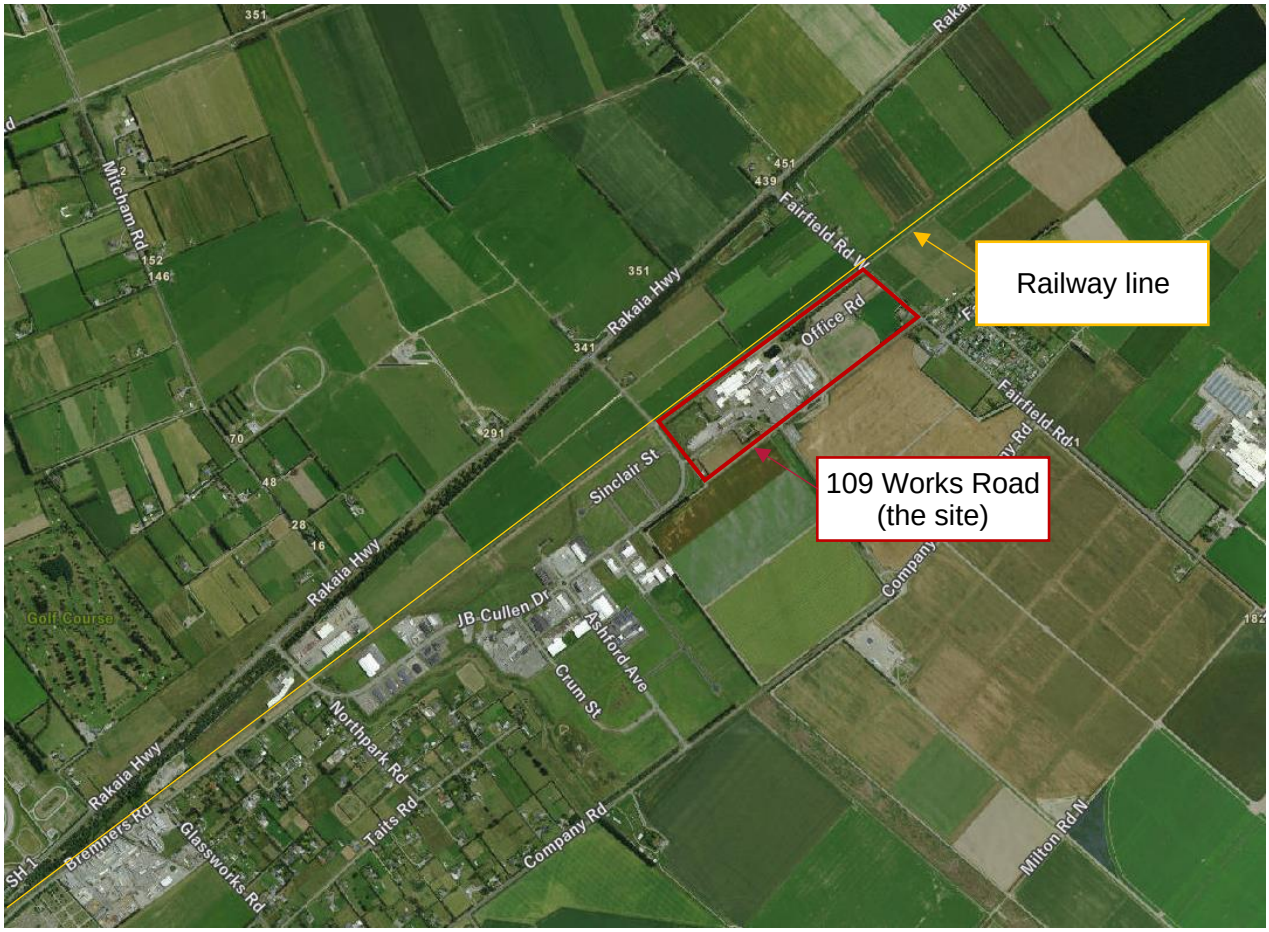


Figure 4.1 Existing network surrounding the site. (Source: Canterbury Maps)

Further west is Bremners Road which provides a secondary connection to Ashburton township. The Main South Line (rail) passes through in general alignment with SH1. This bisects Northpark Road, Works Road and Fairfield Road west where there are established level crossings. Each level crossing has flashing lights and bells. There are barrier arms at Fairfield Road and Northpark Road, but not currently at Works Road. It is understood from the NovoGroup Transport Assessment for the Fairfield Freight Hub that the Works Road level crossing will be upgraded in the future to include half barrier arms in conjunction with the development of a new railway siding.

Reported Crashes

The Waka Kotahi Crash Analysis System was used to review the reported crash history on the public roads surrounding the site over the past 6-year period inclusive (2018-2024). Refer to Figure 4.2 for search area.

A total of nine crashes were reported. Four of these crashes resulted in minor injuries and the remaining four did not result in any injuries. Of note is that there were no death or serious injury crashes (DSI) reported.

Figure 4.2 CAS search area and location of reported crashes. (Source: CAS).

Overall, no crash themes have emerged from the crash analysis and the absence of any DSI crashes is noted. There were also no crashes involving pedestrians or cyclists. The crashes were a mixture of loss of control and rear end crashes. It is also noted that there have not been any crashes reported at the Northpark Road / SH1, Works Road / SH1, or Fairfield Road West / SH1 intersections.

Rakaia Highway (State Highway 1)

SH1 is a major interregional road carrying high traffic flows and a variety of traffic types. Figure 4.3 shows the road cross section. Refer to Table 4.1 for a description of SH1 in this location.

Figure 4.3 SH1/Rakaia Highway cross section. (source: Google Maps).

Table 4.1 SH1 Characteristics

Measure	Description/Output
Road Classification (ADP)	State Highway
Road Classification (ONF)	Interregional Connector
Traffic Flows (Daily)	10,814-12,557vpd (2021, estimate, Mobile Roads))
Traffic Flows (Peak Hourly)	At Works Road - AM Peak: 876vph - PM Peak: 1,087vph At Fairfield Road - AM Peak: 897vph - PM Peak: 1,091vph
Posted Speed	100km/h
Mean Operating Speed	98km/h (MegaMaps).
Cross Section	Generally level and straight alignment. Two-lane / two-way road with dashed centre line, painted edge lines and audio tactile profiled markings. ~3.5m wide traffic lanes Sealed shoulders varying in width 1-3m. Auxiliary right turning lanes and left turning lanes at Works Road and Northpark Road (side road intersections). Auxiliary right turning lane at Fairfield Road West.
Walking	No dedicated walking facilities.
Cycling	No dedicated cycling facilities.
Public Transport	No public transport service.

Notable land uses	Hakatere marae located on northern side of highway, opposite Fairfield Road West intersection

JB Cullen Drive / Works Road / Northpark Road

JB Cullen Drive (which becomes Northpark Road at the western end and Works Road at the eastern end) is the main spine road through the Ashburton Business Park. It connects with SH1 at each end. These two SH1 intersections are approximately 1,800m apart. Figure 4.4 shows the road cross section. Refer to Table 4.2 for description of JB Cullen Drive, Works Road and Northpark Road.

Figure 4.4 JB Cullen Drive cross section. (source: Google Maps).

Table 4.2 JB Cullen Drive, Works Road and Northpark Road Characteristics

Measure	Description/Output
Road Classification (ADP)	Collector (from SH1 to the termination of Northpark Road where it becomes JB Cullen Drive) Local (Works Road / Northpark Road)
Road Classification (ONF)	Activity Street (JB Cullen Drive) Rural Connector (Works Road / Northpark Road)
Traffic Flows (Daily)	360 (Works Road end)-2,200vpd (Northpark Road end) (2021, estimate, Mobile Roads)
Traffic Flows (Peak Hourly)	Works Road end - AM Peak: 32vph - PM Peak: 36vph JB Cullen Drive end - AM Peak: 267vph - PM Peak: 263vph

Posted Speed	50km/h
Mean Operating Speed	46km/h-50km/h (MegaMaps).
Cross Section	Two-lane / two-way road with dashed centre line and painted edge lines ~3.5m wide traffic lanes ~3.0m wide parking lanes (within commercial sections). Outside of commercial sections there are narrow shoulders. Auxiliary right turning lanes at Bremners Road, Crum Street and Lynn Street (side road intersections) Single lane roundabout at Ashford Ave
Walking	~2.0m wide footpaths on both sides from Bremners Road to private section of Works Road. Footpath meanders away from carriageway in some locations. Pram crossings at intersections
Cycling	No dedicated facilities
Public Transport	No public transport service.
Notable land uses	Industrial (business park).

Fairfield Road West

Fairfield Road West is a connecting road that links Seafield with SH1. It runs a distance of approximately 10km in a north-west / south-east alignment. Figure 4.5 shows the road cross section. Refer to Table 4.3 for a description of Fairfield Road West.

Figure 4.5 Fairfield Road West cross section. (source: Google Maps).

Table 4.3 Fairfield Road West Characteristics

Measure	Description/Output
Road Classification (ADP)	Collector
Road Classification (ONF)	Rural Connector (between SH1 and Office Road, South of Company Road) Peri Urban Road ((between Office Road and Company Road)
Traffic Flows (Daily)	900vpd (2021, estimate, Mobile Roads)
Traffic Flows (Peak Hourly)	AM Peak: 54vph PM Peak: 99vph
Posted Speed	60km/h (between SH1 and Office Road) 50km/h (between Office Road and Company Road) 100km/h (south of Company Road)
Mean Operating Speed	62km/h between SH1 and Office Road (MegaMaps)
Cross Section	Generally level and straight alignment. Two-lane / two-way road with dashed centre line and painted edge lines. ~3.2-3.5m wide traffic lanes Narrow sealed shoulders ~0.5m wide. Parking lane adjacent to footpath in residential section (refer below under 'walking') Grass swales
Walking	Footpath on north-eastern side of road between Grigg Street and #1 Fairfield Road (opposite private section of Works Road). Painted zebra crossing (flush) adjacent to Fairfield School, with kerb ramp connecting to footpath. No footpath on south-western side of road.
Cycling	No dedicated facilities.
Public Transport	No public transport service.
Notable land uses	Small residential area on northeastern side of road between Company Road and private section of Works Road Fairton School on south-western side of road, opposite residential catchment. School roll of 35 children.

4.2 Key Intersections

The two key intersections that provide access from the site to the wider transport network are Works Road / SH1 and Fairfield Road West / SH1. The site is located between these two intersections, which connect the site to the wider transport network.

Works Road / SH1

The Works Road / SH1 intersection configuration is depicted in Figure 4.6.

Figure 4.6 Works Road / State Highway 1 Intersection Configuration. (Source: Canterbury Maps).

It is a priority-controlled intersection with GIVE WAY control on the Works Road approach. There is an auxiliary right turning lane approximately 240m long including tapers. There is a seagull lane which allows vehicles to turn right onto SH1 in two stages (although it is noted there are no traffic islands to delineate the right turn two-stage movement).

There is an auxiliary left turn deceleration lane for traffic turning into Works Road from the north. This is separated from the through traffic lane via a painted separator (hatched marking) and a raised traffic island. The Works Road approach has a raised splitter island to separate incoming and outgoing traffic lanes.

Fairfield Road West / SH1

The Fairfield Road West / SH1 intersection is shown in Figure 4.7.

Figure 4.7 Fairfield Road / State Highway 1 intersection Configuration. (Source: Canterbury Maps).

It is also a priority-controlled intersection with STOP control on the Fairfield Road West approach. There is an auxiliary right turning lane approximately 150m long including tapers. There is no auxiliary left turn deceleration lane with only a basic left turn treatment available. The sealed shoulder is approximately 2.5m-3.0m wide on the northern approach and 1.5m-2.0m on the southern approach.

4.3 Walking Facilities

Footpaths are provided within the ABP.

To the west of the ABP is the Drummond Etheridge Walk. This reserve connects the business park to the residential area of Newland and through to Company Road. Refer Figure 4.8.

Figure 4.8 Drummond Etheridge Walk. (Source: Canterbury Maps).

There are no other dedicated walking connections to the site from the wider area. Walking facilities on Fairfield Road are absent along the site frontage. The footpath on the eastern side of Fairfield Road West terminates at the Works Road / Fairfield Road intersection, however there is a zebra crossing to the south of this which links the residential catchment with the PC site (except pedestrians need to walk on a grass berm between the school boundary and the PC site).

4.4 Cycling Facilities

No dedicated cycling facilities are provided within the site and the wider area. Cyclists are accommodated as shared movements on road due to the low volume of vehicles.

4.5 Public Transport

There are no regular public transport routes to the site. However, there is an on-demand, Community Vehicle Trust service that runs between Fairton/Hakatere Marae to Ashburton on weekdays.

5. Future Transport Network

NZTA is undertaking a safety upgrade on SH1 between Selwyn River and Ashburton. This road has been identified as a high-risk rural road. The concept plans show that the safety upgrade will include installation of median barriers, roadside safety barriers, wide centrelines and improved turning facilities at select locations. A concept plan from NZTA is shown in Figure 5.1.

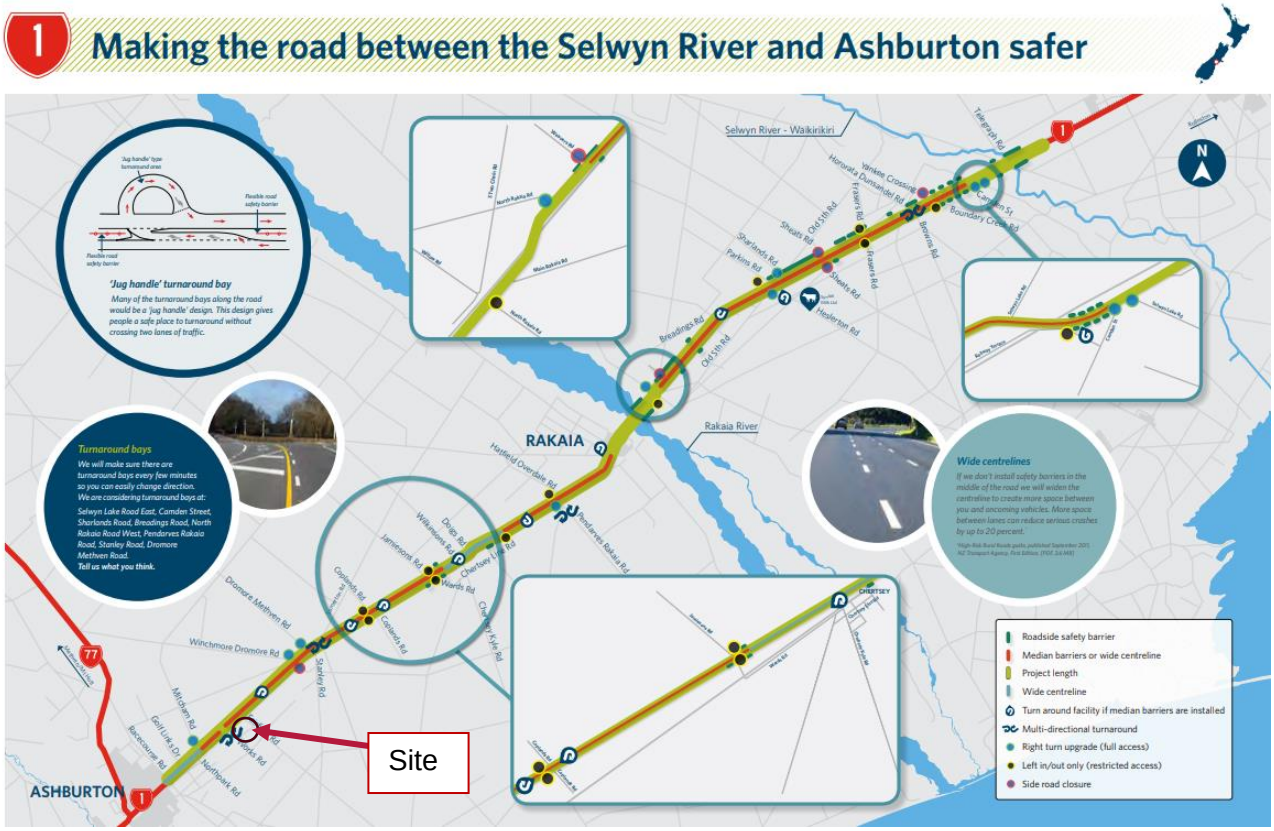


Figure 5.1 Concept plan for SH1 safety upgrade between Selwyn River and Ashburton. (Source: Waka Kotahi).

Following consultation with NZTA, we understand that a wider centre line will be installed as SH1 runs past Works Road and Fairfield Road West (and not median barriers). There is limited detail on what the multi-directional turnaround facility might look like at Works Road, although we expect from our consultation that this will not have a material impact on the operation of that intersection.

We are not aware of any other transport projects in the immediate vicinity that would be material to this proposal.

6. Site Traffic Surveys

Traffic surveys were undertaken on 01 December 2022 using video cameras in the locations shown in Figure 6.1. The red stars were two-way midblock counts, and the blue stars were intersection counts. The following locations were surveyed.

- Works Road / State Highway 1 intersection
- Fairfield Road West / State Highway 1 intersection
- JB Cullen Drive
- Ashford Avenue

The purpose of the surveys was to establish the baseline traffic flows to inform modelling of the two State Highway intersections and calculate the current peak hour traffic flows arriving and departing the Ashburton Business Park.

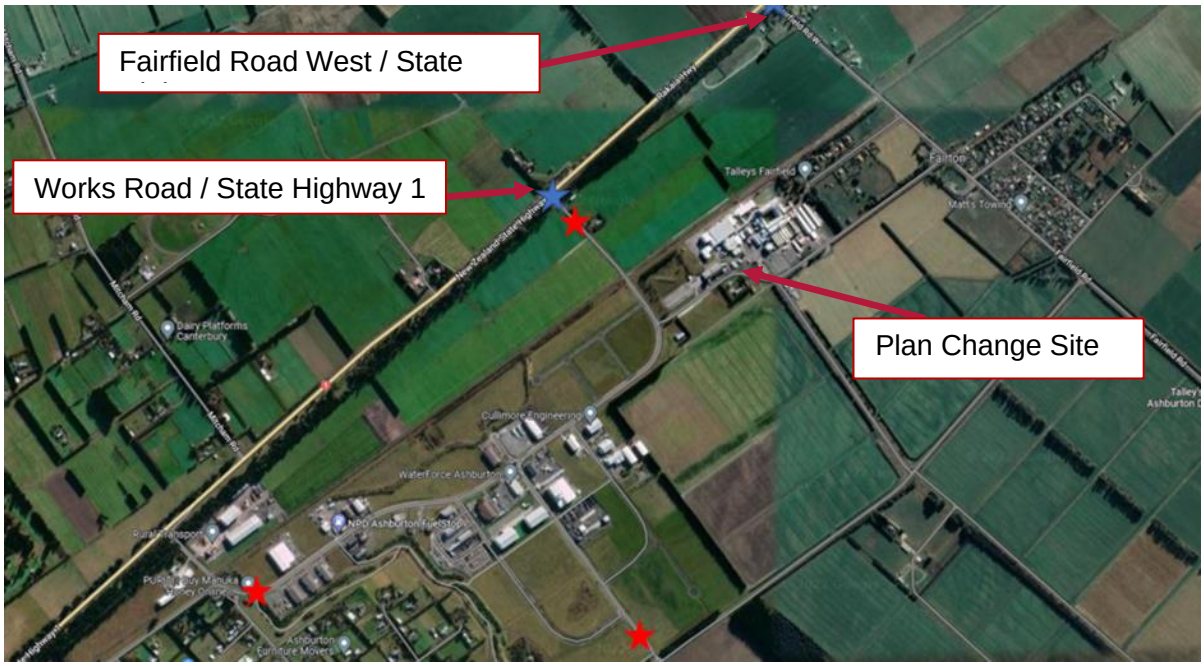


Figure 6.1 Traffic Survey Locations and Plan Change Site.

SH1 / Works Road – Baseline Traffic Flows

The peak hour traffic flows at SH1 / Works Road are shown in Figure 6.2.

	AM					PM				
	Cars	Trucks	Buses	Cyclists	AM Total	Cars	Trucks	Buses	Cyclists	PM Total
SH1 (North)	**453**	**75**	**2**	**0**	**530**	**437**	**58**	**0**	**0**	**495**
Left into Works Rd	8	5	0	0	13	7	3	0	0	10
Thru to SH1 (South)	445	70	2	0	517	430	55	0	0	485
Works Rd	**9**	**9**	**0**	**0**	**18**	**19**	**5**	**0**	**1**	**25**
Left into SH1 (South)	4	2	0	0	6	2	1	0	0	3
Right into SH1 (North	5	7	0	0	12	17	4	0	1	22
SH1 (South)	**267**	**79**	**0**	**0**	**346**	**521**	**69**	**2**	**0**	**592**
Thru to SH1 (North)	266	79	0	0	345	521	68	2	0	591
Right into Works Rd	1	0	0	0	1	0	1	0	0	1
Grand Total	729	163	2	0	894	977	132	2	1	1112

Figure 6.2 Intersection Counts State Highway 1 / Works Road.

The total number of turning movements into or out of the Works Road / State Highway 1 intersection was 32 in the morning (AM) peak hour and 36 in the afternoon (PM) peak hour. The current usage is very low although it is acknowledged that this is likely to increase with the recent development of the Fairfield Freight Hub and as development within the business park intensifies.

Observations of video footage confirmed that over the PM peak hour about 20% of traffic used the seagull lane when turning right out of Works Road onto State Highway 1. This is not to say that the remaining 80% did not use the seagull lane as some vehicles did not require it when there were sufficient gaps in northbound traffic flows. Queue lengths and delays were observed to be minimal and typically less than one vehicle waiting turn out of Works Road onto SH1.

SH1 / Fairfield Road West – Baseline Traffic Flows

The peak hour traffic flows at SH1 / Fairfield Road West are shown in Figure 6.3.

	AM					PM				
	Cars	Trucks	Buses	Cyclists	AM Total	Cars	Trucks	Buses	Cyclists	PM Total
SH1 (North)	**461**	**75**	**2**	**0**	**538**	**408**	**61**	**1**	**0**	**470**
Left into Fairfield Rd	8	1	1	0	10	12	3	0	0	15
Thru to SH1 (South)	453	74	1	0	528	396	58	1	0	455
Fairfield Rd	**21**	**1**	**1**	**0**	**23**	**48**	**3**	**0**	**0**	**51**
Left into SH1 (South)	19	1	1	0	21	40	1	0	0	41
Right into SH1 (North	2	0	0	0	2	8	2	0	0	10
SH1 (South)	**273**	**86**	**0**	**0**	**359**	**548**	**71**	**1**	**1**	**621**
Thru to SH1 (North)	258	80	0	0	338	517	69	1	1	588
Right into Fairfield Rd	15	6	0	0	21	31	2	0	0	33
Grand Total	755	162	3	0	920	1004	135	2	1	1142

Figure 6.3 Intersection Counts State Highway 1 Fairfield Road.

The total number of turning movements into or out of the Fairfield Road / State Highway 1 intersection was 54 in the AM peak hour and 99 in the PM peak hour.

Fairfield Road does not have a seagull lane and so right turning vehicles are required to wait for a clear gap in both southbound and northbound traffic before undertaking their manoeuvre. Queue lengths and delays were observed to be minimal and typically less than one vehicle waiting to turn out onto SH1 from Fairfield Road West.

Ashburton Business Park Traffic Generation

The surveys confirmed a peak hour trip generation rate for traffic entering and exiting the business park of 330 vehicle movements per hour (vph). This was recorded during the PM peak period (1630hrs-1730hrs). Based on approximately 32.5ha of the existing business park that had been developed at the time of the survey, the existing business park attracts an average peak trip rate in the order of 11 trips per hectare in the peak hour. This is noted to align closely with the 11.6 trips per hectare associated with the FFH from the Novogroup ITA (see section 2.4 of this report).

The total number of trips in and out of the existing ABP area during the PM peak period was calculated by adding the counts from the mid-block count stations together (identified by the red stars within Figure 6.1).

The traffic distribution from the existing ABP is shown in Figure 6.4.

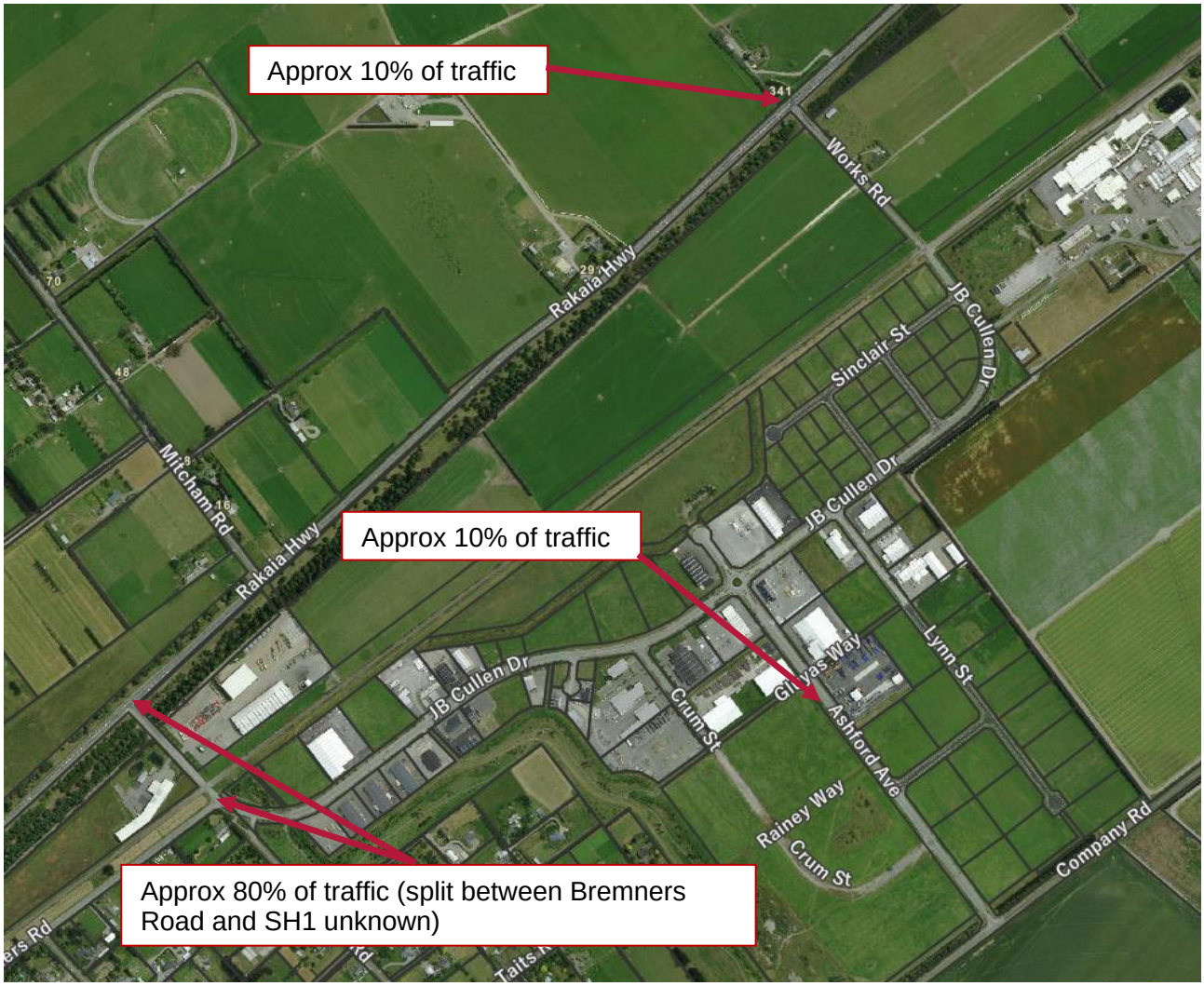


Figure 6.4 Traffic distribution of existing business estate.

This shows that the majority of existing ABP traffic accesses the area from the southwest, via a mixture of Bremners Road and using the SH1 / Northpark Road intersection. There is currently only a very

small number of vehicles accessing the ABP either from Works Road / SH1 or from Ashford Avenue. This indicates that 80% of traffic accesses the ABP from Ashburton to the south-west.

7. Pre-application Engagement

7.1 Engagement with Ashburton District Council

Abley met with Ashburton District Council on 20 June 2023 to discuss the PC. Following the pre-application meeting, Council sought a larger land parcel of 32.5 hectares rather than the previously proposed 23 hectares. The larger land parcel was sought as it would allow for a more uniform zone boundary to be created, essentially aligning with the existing 109 Works Road property boundaries. No fundamental transport concerns were raised with respect to the PC beyond ensuring awareness of District Plan rules relating to the performance of the SH1 / Works Road intersection (refer to Section 3 for more details), and to confirm engagement with NZTA has been undertaken.

7.2 Engagement with NZTA

Abley met with NZTA in September 2023 to obtain its views on the PC, given the potential effects of traffic generation on SH1. Abley provided on overview of the proposal and due diligence transportation modelling work, which included intersection surveys and traffic modelling analysis as discussed in Section 6. NZTA confirmed that it was generally supportive of Abley's approach to assessing traffic effects on the key SH1 intersections.

NZTA also provided an update on its proposed safety upgrade on SH1 between Selwyn River and Ashburton. They confirmed that wide centreline will be installed on SH1 as it passes the Fairton settlement. Further north along SH1 a central median barrier is proposed.

8. Proposed Development

8.1 Overview

It is proposed to rezone 109 Works Road from Business F to Business E with a new ODP applied (refer to Figure 8.1). This would in effect be an extension to the existing Ashburton Business Park which lies to the west of the PC site. This is understood to equate to an area of 32.5ha.

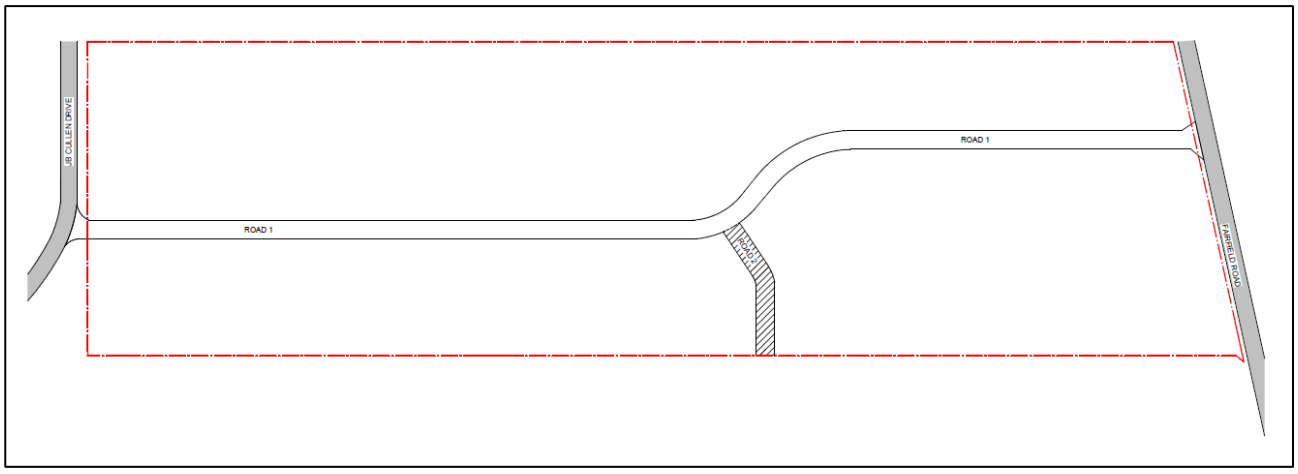


Figure 8.1 Proposed ODP

It is intended that this zoning would provide for a broad range of service, commercial and industrial activities.

As above, 3.6ha of the site has been issued resource consent to operate at the western corner of 109 Works Road for use as a freight hub. This is identified in blue in Figure 8.1. A solar farm has also obtained consent to operate in the east corner of the site. It will have an area of approximately 6.4ha. This is identified in orange in Figure 8.1.

The ODP shows an indicative roading network with Road 1 running parallel to the railway line connecting JB Cullen Drive with Fairfield Road at either end. Road 2 branches off Road 1 to provide for a future connection to the land south of the site.

8.2 Site Vehicle Access

The site has frontage to JB Cullen Drive on its southwestern boundary and Fairfield Road along its northeastern boundary. Road 1 will utilise both of these frontages and establish a public roading connection (to be vested in Council) between the existing Ashburton Business Park and Fairfield Road. Road 1 will follow the general alignment of Office Road as it connects to Fairfield Road, and will then 'S' bend to match in with the Works Road alignment to the west as it connects in with JB Cullen Drive. The final alignment will be confirmed at subdivision consent stage.

The reserve widths of Roads 1 and 2 have been selected based on Standard 10.9.1 *Roading, Access and Vehicle Crossings* of the ADP, which states that except as specified in Table 10-4, new roads shall be laid out in accordance with NZS4404:2010. Based on the anticipated use of Road 1, the below standard is considered appropriate:

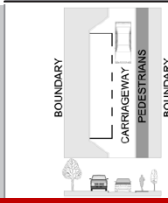
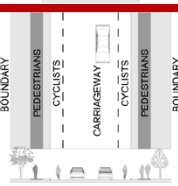
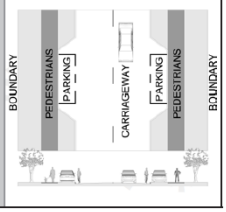
PLACE CONTEXT			DESIGN ENVIRONMENT				LINK CONTEXT					TYPICAL PLAN AND CROSS SECTION
Area	Land use	Local attributes	Locality served	Target operating speed (km/h)	Min. road width (m)	Max. grade	Pedestrians	Passing, parking, loading and shoulder	Cyclists	Movement lane (excluding shoulder)	Classification	
Notes	See 3.2.4, table 3.1 & 3.3.1.6	See table 3.1	See table 3.1	See 3.3.5	See 1.2.2, 3.3.1.9, & 3.4.16		See 3.3.11	See 3.3.6 & 3.3.1.4	See 3.3.1.5, 3.3.7, & 3.3.11.2	See 1.2.2, 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.10, 3.3.11.3	See 3.2.4.2 & 3.3.16 (Typical max. volumes)	See Appendix E for larger versions of figures
Suburban	Make and move	Side or rear freight access	Industrial area	10	11	10%	Separate footpath one side	Loading bays shall be separate and recessed. See 3.3.6.	Shared (in movement lane)	3.5	Lane (~ 200 vpd)	
	Make and move	Primary freight access	Industrial area	40	18	10%	1.5 m each side	Parking and loading bays both sides may be in the movement lane or recessed. See 3.3.6.	Shared (in movement lane)	2 x 4.2	Local road (~2,000 vpd)	
	Shop and trade, work and learn, make and move	All, roads serving multi-purpose areas involving most or all of the indicated land uses, not specified elsewhere in this table.	All, or combinations of these land uses	50	23	10%	2.5 m each side, 3.5 m each side for shop and trade, work and learn	Parking separate and recessed. See 3.3.6. Public transport is likely (see 3.3.1.4, 3.3.1.5)	Separate provision where local authority defined cycle route.	2 x 4.2	Connector/ collector (~ 8,000 vpd)	

Table 3.2 (continued)

Figure 8.2 Recommended roading standard for Roads 1 and 2. (Source: NZS4404:2010).

At a concept level, this requires a reserve width of at least 18.0m with a minimum 8.4m wide road carriageway and footpaths on both sides. Provision for parking and loading bays may be provided in the movement lane or recessed into the berm.

The intersection of Office Road and Fairfield Road West is existing and will be retained in its current location for Road 1. The intersection of Office Road and JB Cullen Drive will likewise be retained in its current location. Both intersections are priority controlled with Give Way control on the Office Road approach. The intersection layouts will be reviewed as part of detailed design of Road 1.

8.3 Walking and Cycling Provision

As above, new roads within the site will have a layout consistent with NZS4404:2010. Footpaths will be provided on both sides of the road with a width of 1.5m on each side. These will connect with the existing footpath network on JB Cullen Drive.

The Road 1 footpaths will terminate at Fairfield Road because there is currently no footpath on Fairfield Road to connect into. The footpath on the northern side of Fairfield Road terminates at the existing Works Road / Fairfield Road intersection, some 200m south. Should Council extend the footpath in the future, it will be able to tie into the footpaths on Road 1 with a new pedestrian crossing facility on Fairfield Road in the vicinity of the intersection. However, it is noted that pedestrians will also be able to access the site from the east along the existing Works Road alignment. There is an existing at-grade zebra crossing on Fairfield Road south of the Works Road / Fairfield Road intersection which connects the residential catchment to the PC site. This is expected to remain sufficient to support safe pedestrian access to the development from the Fairton settlement.

Cyclists will be accommodated in the movement lane as is appropriate per NZS4404:2010.

9. Appraisal of Transportation Effects

9.1 Road Safety

Collective and Personal Risk Assessment

Waka Kotahi MegaMaps has been referred to in order to analyse the safety of road corridors. The two types of risk metrics are summarised as follows:

- Collective Risk is a measure of the total estimated death and serious injury (DSi) casualty equivalents for a site. It is effectively a measure of the number of deaths and serious injuries that can be expected at a site over the next analysis period (typically five years). At a corridor level, Collective Risk is the total estimated DSi casualty equivalents derived from the intersection and midblock components divided by the length of the corridor. It is expressed as estimated DSi / km.
- Personal Risk is a measure of the risk of an individual dying or being seriously injured at a site. It is calculated by dividing Collective Risk by a measure of traffic volume exposure.

The risk rating will indicate if there are any underlying safety issues along any of the corridors.

Collective Risk

Figure 9.1 shows that the majority of the surrounding area has a low or low-medium collective risk rating with State Highway 1 and Fairfield Road West between SH1 and Office Road classified as low-medium.

Figure 9.1 Collective Risk for surrounding road network around the site. (Source: Mega Maps).

Personal Risk

Figure 9.2 shows that a majority of the site surrounding has low personal risk. There is one short section of medium risk on Fairfield Road West between SH1 and Office Road.

Figure 9.2 Personal Risk for surrounding road network around the site. (Source: Mega Maps).

Given the risk levels associated with Fairfield Road West we have reviewed the current configuration in the context of the post-development traffic flows. Our post development modelling scenario indicates that Fairfield Road West is expected to carry 140 vehicle movements per hour in the peak hour (two way). Fairfield Road West has one traffic lane in each direction with each being between 3.2-3.4m wide resulting in a total carriageway width of 6.4m-6.8m plus 0.5m wide sealed shoulders on each side (hence a total sealed width of 7.4m-7.8m). We have referenced NZS4404:2010 to evaluate the

suitability of the existing cross section of Fairfield Road West to support the future traffic volumes and types. Figure 9.3 shows our recommended standard for Fairfield Road West.

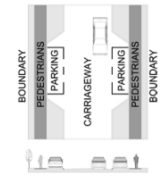
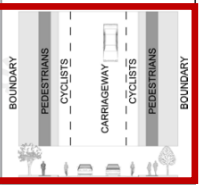
PLACE CONTEXT			DESIGN ENVIRONMENT				LINK CONTEXT					TYPICAL PLAN AND CROSS SECTION
Area	Land use	Local attributes	Locality served	Target operating speed (km/h)	Min. road width (m)	Max. grade	Pedestrians	Passing, parking, loading and shoulder	Cyclists	Movement lane (excluding shoulder)	Classification	
Notes	See 3.2.4, table 3.1 & 3.3.1.6	See table 3.1	See table 3.1	See 3.3.5	See 1.2.2, 3.3.1.9, & 3.4.16		See 3.3.11	See 3.3.6 & 3.3.1.4	See 3.3.1.5, 3.3.7, & 3.3.11.2	See 1.2.2, 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.10, 3.3.11.3	See 3.2.4.2 & 3.3.16 (Typical max. volumes)	See Appendix E for larger versions of figures
Rural (3.3.1.7, 3.3.1.8, & 3.3.1.9)	Shop and trade	Side or rear service access	Up to 100 m in length between streets, 1 to 20 lots	10	6	16%	Shared (in movement lane)	Allow for passing up to every 50 m. Kerbed edge or total shoulder 0.5 m, sealed	Shared (in movement lane)	2.75 - 3.00	Lane (~ 200 vpd)	
	Shop and trade	Access to trade	Rural village shops	40	15	10%	1.5 m each side	Parking and loading may occur in the movement lane or be separate and recessed. See 3.3.6. Kerbed edge or total shoulder 1.0 m, sealed shoulder 0.5 m	Shared (in movement lane)	5.5 - 5.7	Local road (~ 1,000 vpd)	
	Make and move	Primary freight access	Rural activities	up to 100	20	10%	1.5 m each side	Total shoulder 1.0 m, sealed shoulder 0.5 m	On sealed shoulder where it is a local authority defined cycle route.	5.5 - 5.7	Local road (~ 1,000 vpd)	

Table 3.2 (continued)

Figure 9.3 Suggested standard for Fairfield Road West. (Source: NZS4404:2010).

We consider the road is and will remain rural in nature and will serve as primary freight access to the PC site.

it is likely based on the predicted peak hour flows that the average daily traffic flows will be in the order of 1,400vpd post-development. Hence, these are slightly greater than documented in the above standard. There are also no footpaths whereas the standard suggests these are required on each side. Cyclists are permitted to use the sealed shoulder if the road is on a local authority defined cycle route (which it is not). The movement lane is required to be 5.5-5.7m wide with a 1.0m wide shoulder on each side, 0.5m of which is to be sealed.

Although the daily traffic flows will be higher than documented in the standard, which may suggest it is not the appropriate standard for Fairfield Road West post development, we note that the movement lane on Fairfield Road at 6.4m-6.8m is considerably greater than the minimum requirement of 5.5-5.7m and so we consider the current sealed width (including shoulders) is sufficient. Moreover, even though there are no footpaths, there will be no demand to walk on this section of Fairfield Road (i.e., the section that runs between SH1 and the development site) because there is no infrastructure on SH1 for pedestrians to connect to. On this basis, we consider that Fairfield Road West in its current form will be sufficient to safely and efficiently accommodate the post-development traffic flows.

9.2 Traffic Generation & Distribution

Traffic generation rates can vary between developments for a variety of reasons, including proximity to amenities and services, access to other modes of transport and the exact type of development (whether that be retail, servicing or both, for example).

Based on our traffic surveys discussed in Section 6 we have assumed that new development will similarly attract a peak traffic generation rate of 11 trips per hectare per peak hour, on average. This is consistent with the current Ashburton Business Park (ABP) trip generation rate and very similar to the assumed trip rate for the Fairfield Freight Hub. As similar activities are anticipated (and the proposed zoning is identical to the ABP), a consistent rate of 11 trips per hectare in peak hour is also anticipated.

Hence, the proposed 32.5ha of additional development enabled by the proposed plan change will attract a peak hour traffic generation rate in the order of 358 vehicles per hour. The evening peak is the critical period as vehicles are turning out of the industrial area onto SH1. As observed from the traffic counts presented in Section 6, SH1 flows and local traffic flows on Works Road and Fairfield Road West are much lower (approx 20% lower) in the morning peak period. As such modelling has focused exclusively on the evening peak hour.

The traffic surveys established that current ABP traffic is distributed 10% travelling to/from the north, 10% travelling to/from Ashford Ave to connect to Company Road and 80% travelling to/from the south via SH1 or Bremners Road. ABP traffic uses Works Road to access destinations to the north and nearly all traffic used local roads in preference to Works Road to access destinations to the south. This is a combination of using SH1 / Northpark Road and local roads to travel to/from the south.

For the plan change site we have similarly assumed for new traffic that 10% of traffic travels to/from the north with all left turners in (from north / Christchurch) and right turners out (towards north / Christchurch) using either the Fairfield Road West / SH1 intersection or the Works Road / SH1 intersection. All other development traffic (that is, traffic approaching from the south) would use the local road network / Northpark Road / SH1 intersection to access Ashburton and destinations further south which reflects the current observed activity at the Ashburton Business Park. It is noted that some traffic may head south via the Works Road intersection however this is not a critical movement in the evening peak hour.

9.3 Transportation Modelling

Transportation modelling was undertaken using SIDRA intersection software. The analysis included Works Road / SH1 and Fairfield Road West / SH1 and has been undertaken based on the above traffic generation and distribution assumptions. To provide a robust and comprehensive assessment, two scenarios have been run. One whereby all of the 10% of traffic travelling to/from the north uses the Works Road intersection, and one where the 10% of traffic travelling to/from the north uses the Fairfield Road West intersection. In reality, the traffic is likely to be split between the two and the performance of both will be better than is modelled here. Subsequently 36 two-way movements (29 outbound and 7 inbound) have been added in the evening peak hour.

Base Models and Calibration

SIDRA Intersection models for each intersection were developed to establish the baseline delay times and queue lengths, expressed as levels of service (LoS). Only the PM peak was modelled as the survey results showed the number of turning movements at the intersections were higher than the AM peak and is therefore the critical period for intersection capacity considerations.

Model calibration was undertaken by viewing the video footage for each intersection and counting the delays for vehicles turning onto the state highway network from the side roads. The average delays were then calculated for right turns and left turns individually. This exercise ensured the model reflected the actual delays observed (with geometric delay added).

The Works Road and Fairfield Road intersection model output summaries are included in Figure 9.4 and Figure 9.5 respectively. These demonstrate that right turn out delays at both intersections are currently in the order of 24 seconds which corresponds to LoS C. Notably both intersections are operating with low degree of saturation and minimal queuing of vehicles so are operating well below capacity.

MOVEMENT SUMMARY

Site: 1 [Works Road / State Highway 1 Intersection - BASE PM (Site Folder: Models for ITA 29072024)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Works Road															
1	L2	All MCs	3	33.3	3	33.3	0.007	14.9	LOS B	0.0	0.2	0.55	0.89	0.55	48.8
2	R2	All MCs	23	18.2	23	18.2	0.119	24.4	LOS C	0.3	2.7	0.71	1.01	0.71	45.3
Approach			26	20.0	26	20.0	0.119	23.3	LOS C	0.3	2.7	0.69	0.99	0.69	45.7
East: State Highway 1 (north)															
3	L2	All MCs	11	30.0	11	30.0	0.007	8.6	LOS A	0.0	0.0	0.00	0.66	0.00	64.0
4	T1	All MCs	511	11.3	511	11.3	0.281	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.8
Approach			521	11.7	521	11.7	0.281	0.2	NA	0.0	0.0	0.00	0.01	0.00	98.7
West: State Highway 1 (south)															
5	T1	All MCs	622	12.0	622	12.0	0.340	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.8
6	R2	All MCs	1	100.0	1	100.0	0.003	17.7	LOS C	0.0	0.1	0.62	0.69	0.62	49.3
Approach			623	12.2	623	12.2	0.340	0.1	NA	0.0	0.1	0.00	0.00	0.00	99.6
All Vehicles			1171	12.1	1171	12.1	0.340	0.7	NA	0.3	2.7	0.02	0.03	0.02	96.7

Figure 9.4 Works Road / SH1 Evening Peak Model Summary – Base Model

MOVEMENT SUMMARY

Site: 1 [Fairfield Road / State Highway 1 Intersection - BASE PM (Site Folder: Models for ITA 29072024)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Fairfield Road West															
1	L2	All MCs	43	2.4	43	2.4	0.069	11.7	LOS B	0.2	1.7	0.51	0.95	0.51	56.0
2	R2	All MCs	11	20.0	11	20.0	0.053	23.7	LOS C	0.1	1.1	0.80	1.01	0.80	45.1
Approach			54	5.9	54	5.9	0.069	14.0	LOS B	0.2	1.7	0.57	0.96	0.57	53.5
East: State Highway 1 (north)															
3	L2	All MCs	16	20.0	16	20.0	0.276	8.4	LOS A	0.0	0.0	0.00	0.02	0.00	77.6
4	T1	All MCs	479	13.0	479	13.0	0.276	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.2
Approach			495	13.2	495	13.2	0.276	0.3	NA	0.0	0.0	0.00	0.02	0.00	98.3
West: State Highway 1 (south)															
5	T1	All MCs	619	11.9	619	11.9	0.338	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.8
6	R2	All MCs	35	6.1	35	6.1	0.047	10.9	LOS B	0.2	1.2	0.52	0.75	0.52	58.6
Approach			654	11.6	654	11.6	0.338	0.6	NA	0.2	1.2	0.03	0.04	0.03	96.2
All Vehicles			1202	12.0	1202	12.0	0.338	1.1	NA	0.2	1.7	0.04	0.07	0.04	93.7

Figure 9.5 Fairfield Road / SH1 Evening Peak Model Summary – Base Model

Future Models

NZTA Integrated Transport Assessment (ITA) guidance[1] recommends the assessment of ten years of future growth for Plan Change applications. The State Highway traffic growth rate has been calculated based on Average Annual Daily Traffic (AADT) volumes at the following two NZTA TMS count sites:

- 01S00405 north of Hatfield Overdale Road – traffic grew between 2016 and 2022 from 11136 to 12335 vehicles per day = 200 vehicles per annum = 1.6% growth per annum
- 01S00428 south of Golf Links Road – traffic grew between 2016 and 2022 from 12306 to 13192 vehicles per day = 148 vehicles per annum = 1.1% growth per annum

To model the impact of ten years of growth in State Highway traffic a future modelling scenario with 15% additional through traffic volumes has been prepared. The resultant modelling outputs summaries for the Works Road and Fairfield Road intersections are shown in Figure 9.6 and Figure 9.7.

[1] NZTA Research Report 422

MOVEMENT SUMMARY

Site: 1 [Works Road / State Highway 1 Intersection - BASE PM + 10 Years (Site Folder: Models for ITA 29072024)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Works Road															
1	L2	All MCs	3	33.3	3	33.3	0.009	16.6	LOS C	0.0	0.2	0.62	0.91	0.62	47.8
2	R2	All MCs	23	18.2	23	18.2	0.155	30.5	LOS D	0.4	3.4	0.78	1.01	0.78	42.2
Approach			26	20.0	26	20.0	0.155	28.8	LOS D	0.4	3.4	0.76	0.99	0.76	42.8
East: State Highway 1 (north)															
3	L2	All MCs	11	30.0	11	30.0	0.007	8.6	LOS A	0.0	0.0	0.00	0.66	0.00	64.0
4	T1	All MCs	587	11.3	587	11.3	0.323	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.8
Approach			598	11.6	598	11.6	0.323	0.2	NA	0.0	0.0	0.00	0.01	0.00	98.8
West: State Highway 1 (south)															
5	T1	All MCs	716	11.9	716	11.9	0.391	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.7
6	R2	All MCs	1	100.0	1	100.0	0.003	19.9	LOS C	0.0	0.2	0.68	0.73	0.68	47.9
Approach			717	12.0	717	12.0	0.391	0.1	NA	0.0	0.2	0.00	0.00	0.00	99.6
All Vehicles			1341	12.0	1341	12.0	0.391	0.7	NA	0.4	3.4	0.02	0.03	0.02	96.7

Figure 9.6 Works Road / SH1 Evening Peak Model Summary – Future Model

MOVEMENT SUMMARY

Site: 1 [Fairfield Road / State Highway 1 Intersection - BASE PM +10 Years (Site Folder: Models for ITA 29072024)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Fairfield Road West															
1	L2	All MCs	43	2.4	43	2.4	0.079	12.6	LOS B	0.3	1.9	0.55	0.98	0.55	55.3
2	R2	All MCs	11	20.0	11	20.0	0.077	31.4	LOS D	0.2	1.5	0.86	1.01	0.86	41.2
Approach			54	5.9	54	5.9	0.079	16.3	LOS C	0.3	1.9	0.61	0.99	0.61	51.8
East: State Highway 1 (north)															
3	L2	All MCs	16	20.0	16	20.0	0.316	8.4	LOS A	0.0	0.0	0.00	0.02	0.00	77.7
4	T1	All MCs	551	13.0	551	13.0	0.316	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.3
Approach			566	13.2	566	13.2	0.316	0.3	NA	0.0	0.0	0.00	0.02	0.00	98.5
West: State Highway 1 (south)															
5	T1	All MCs	712	11.8	712	11.8	0.389	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.7
6	R2	All MCs	35	6.1	35	6.1	0.053	11.6	LOS B	0.2	1.4	0.55	0.79	0.55	57.9
Approach			746	11.6	746	11.6	0.389	0.6	NA	0.2	1.4	0.03	0.04	0.03	96.5
All Vehicles			1366	12.0	1366	12.0	0.389	1.1	NA	0.3	1.9	0.04	0.07	0.04	94.1

Figure 9.7 Fairfield Road / SH1 Evening Peak Model Summary – Future Model

The model results show that right turn out delays increase from 24 seconds to 31 seconds as a result of ten years of additional SH through growth with right turns operating at Level of Service D. Degree of saturation and queuing results remain low for all traffic movements demonstrating the intersections continue to have spare capacity.

Future Models with Development Traffic

The final set of model runs adds the 32.5 hectares of development traffic using the trip generation and distribution assumptions documented earlier in this chapter. Although it is concluded that approximately 10% of traffic in the evening peak will travel to/from the north, a conservative sensitivity test has been run whereby 10% of traffic has been added to both the Works Road and the Fairfield Road intersections. This recognises that some traffic may prefer to use the seagull turning facility at Works Road especially for activities at the southern end of the site.

The resultant modelling outputs summaries for the Works Road and Fairfield Road intersections are shown in Figure 9.8 and Figure 9.9.

MOVEMENT SUMMARY

Site: 1 [Works Road / State Highway 1 Intersection - BASE PM + 10 Years with 32.5Ha (Site Folder: ITA 22082024 26.1 and 32.5Ha dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Works Road															
1	L2	All MCs	3	33.3	3	33.3	0.009	16.6	LOS C	0.0	0.2	0.62	0.91	0.62	47.8
2	R2	All MCs	54	17.6	54	17.6	0.357	35.1	LOS E	1.2	9.3	0.82	1.06	1.04	40.2
Approach			57	18.5	57	18.5	0.357	34.0	LOS D	1.2	9.3	0.81	1.05	1.01	40.6
East: State Highway 1 (north)															
3	L2	All MCs	18	29.4	18	29.4	0.012	8.6	LOS A	0.0	0.0	0.00	0.66	0.00	64.1
4	T1	All MCs	587	11.3	587	11.3	0.323	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.8
Approach			605	11.8	605	11.8	0.323	0.3	NA	0.0	0.0	0.00	0.02	0.00	98.2
West: State Highway 1 (south)															
5	T1	All MCs	716	11.9	716	11.9	0.391	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.7
6	R2	All MCs	1	100.0	1	100.0	0.003	20.1	LOS C	0.0	0.2	0.69	0.73	0.69	47.8
Approach			717	12.0	717	12.0	0.391	0.1	NA	0.0	0.2	0.00	0.00	0.00	99.6
All Vehicles			1379	12.2	1379	12.2	0.391	1.6	NA	1.2	9.3	0.03	0.05	0.04	93.4

Figure 9.8 Works Road / SH1 Evening Peak Model Summary – Future Model with 32.5Ha Plan Change

MOVEMENT SUMMARY

Site: 1 [Fairfield Road / State Highway 1 Intersection - BASE PM +10 Years with 32.5Ha (Site Folder: ITA 22082024 26.1 and 32.5Ha dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Three-way intersection with 3-lane major road (Stop control)
Site Category: Existing Design
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Fairfield Road West															
1	L2	All MCs	43	2.4	43	2.4	0.079	12.6	LOS B	0.3	1.9	0.55	0.98	0.55	55.3
2	R2	All MCs	41	17.9	41	17.9	0.289	34.4	LOS D	0.8	6.1	0.89	1.04	1.02	40.1
Approach			84	10.0	84	10.0	0.289	23.2	LOS C	0.8	6.1	0.72	1.01	0.78	46.7
East: State Highway 1 (north)															
3	L2	All MCs	23	18.2	23	18.2	0.320	8.3	LOS A	0.0	0.0	0.00	0.03	0.00	78.3
4	T1	All MCs	551	13.0	551	13.0	0.320	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	99.0
Approach			574	13.2	574	13.2	0.320	0.4	NA	0.0	0.0	0.00	0.03	0.00	97.9
West: State Highway 1 (south)															
5	T1	All MCs	712	11.8	712	11.8	0.389	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.7
6	R2	All MCs	35	6.1	35	6.1	0.054	11.7	LOS B	0.2	1.4	0.56	0.79	0.56	57.8
Approach			746	11.6	746	11.6	0.389	0.6	NA	0.2	1.4	0.03	0.04	0.03	96.5
All Vehicles			1404	12.1	1404	12.1	0.389	1.9	NA	0.8	6.1	0.06	0.09	0.06	91.2

Figure 9.9 Fairfield Road / SH1 Evening Peak Model Summary – Future Model with 32.5Ha Plan Change

The model results shown that future (that is when assuming ten years growth) right turn out delays increase from 31 seconds to 35 seconds as a result of 32.5 hectares of development on the Plan Change site, with the right turns operating at the Level of Service D/E threshold. Degree of saturation and queuing results remain low for all traffic movements demonstrating the intersections continue to have spare capacity. It is reiterated that these model runs have conservatively assumed 10% of traffic is loaded to each intersections for traffic travelling to/from the north when in reality based on local surveys is the total traffic across both will be 10%. As before traffic travelling to/from the south is assumed to take local roads or use the Northpark intersection to access SH1.

It is concluded that the two adjacent State Highway 1 intersections have sufficient capacity to accommodate the 32.5 hectares of Plan Change traffic as well as ten years of future through traffic growth.

9.4 Accessibility

The site is highly accessible by private vehicle given its proximity to SH1. The site's proximity to SH1 is a positive transport benefit as from a transport planning perspective it is generally considered advantageous to have industrial land situated near the national roading network to minimise heavy vehicle movement on local roads.

Although there is no PT service in the vicinity of the site at present, the surrounding road network (and proposed roading network) is designed such that buses will be able to use the roads in the future should a PT service be considered viable. The site is also a natural extension of the ABP which will assist with increasing demand for other transport modes when accessing the wider industrial area.

In terms of walking and cycling, footpath connections will be made to the existing network in the ABP to ensure walking continuity is achieved.

Overall, since the site is merely an extension of an existing larger industrial zone, the site is considered highly accessible. From a transport perspective, with cognisance of the existing adjacent development, the site is considered to be an excellent candidate for industrial development from an accessibility perspective.

10. Strategic Planning Framework

In the following section, an assessment is presented of the Plan Change against traffic-related policies of the Regional Policy Statement, Regional Land Transport Plan and District Plan.

10.1 Canterbury Regional Policy Statement (CRPS)

Policy 5.3.7 of the CRPS relates to the "strategic land transport network and arterial roads (entire region)". It seeks to avoid development that:

- Adversely effects the safe, efficient, and effective functioning of the strategic land transport network and arterial roads, including the ability of infrastructure to support freight and passenger transport services, and
- Forecloses the opportunity for the development of the network to meet future strategic transport requirements.

This ITA assesses the potential safety and efficiency effects that could be generated by the development of the site and has concluded that the traffic generated by the development of the PC site can be accommodated by the existing transport network. Furthermore, the ODP layout ensures excellent connectivity through the site to the existing network, and provides for future links to the south of the Site. On this basis, the development of the site will not adversely affect the safe, efficient, and effective functioning of the strategic land transport network and arterial roads.

10.2 Canterbury Regional Land Transport Plan

The Canterbury Regional Transport Committee is preparing for deliberations on the draft Canterbury Regional Land Transport Plan 2024-34 following public consultation from 26 January 2024 to 26 February 2024, and the completion of hearings.

The notified Regional Land Transport Plan 2024-2034 has the following priorities:

- Create a well-maintained network
- Manage risk of exposure to extreme events
- Support and develop connected public transport and active transport networks
- Implementing safer systems (Road to Zero)
- Support and develop freight systems connecting to air, rail, and sea.

The Canterbury Regional Land Transport Plan 2021 – 2031 is the current 10-year transport investment plan for Canterbury. The Regional Land Transport Plan 2021-2031 set the following objectives:

- Share prosperity (environmental, social, economic and cultural);
- Better freight options;
- Reduced harm;
- Improved advocacy;
- Reliable and consistent journeys;
- Mode shift;
- Resilience.

This ITA has assessed the safety effects associated with the new intersections that will be formed within the existing transport network, as well as safety effects associated with anticipated vehicle movements onto State Highway 1 and the wider network. We conclude the proposal will not adversely affect the safety and efficiency of the transport network.

The site is also a logical expansion of an existing industrial area, and so will be able to connect in with existing transport infrastructure without requiring any significant roading or footpath extensions.

10.3 Canterbury Regional Public Transport Plan

The Canterbury Regional Public Transport Plan 2018-2028 sets out Environment Canterbury's (ECAN) objectives and policies for delivering public transport in Canterbury.

Environment Canterbury regularly evaluates the public transport requirements of the wider network. No fixed public transport routes are provided in the area. However, rezoning of the site to Business E which generally accommodates heavy industrial activities, ancillary offices, storage and warehousing may support the provision of public transport services in the future to provide travel choice for workers. The future ODP for the site will be designed to accommodate future public transport services which could potentially be implemented by ECAN in the future (if required).

10.4 Ashburton District Plan

The proposed PC has been reviewed against the relevant ADP Transport Objectives and Policies. The results of this review are shown in Table 10.1.

Table 10.1 ADP Objectives and Policies Review

Policies	Comments
Objective 10.1 Transport Sustainability	
Policy 10.1A To mitigate the adverse effects of vehicle and fossil fuel usage by reducing potential travel times to home, work, community and business places, primarily through encouraging infill, intensification within the core area of Ashburton, and consolidated development of the District's towns. Provision for some essential services within residential and commercial areas will also assist to reduce travel times and distances e.g. Business A zones within residential areas.	The PC site is a natural extension of an existing industrial area.
Policy 10.1B To consider opportunities for encouraging and developing greater use of public transportation facilities.	There are no PT services in the vicinity of the site. The site will be designed so that PT services can use the new roads if required in the future.
Policy 10.1C To support/advocate for the maintenance of rail corridors for future public transport and / or alternative transport uses such as cycling should they no longer be required for rail transport.	N/A
Policy 10.1D To encourage the use of rail as a sustainable form of transportation, and to support the development of a rail operational facility as part of the Ashburton Business Estate.	Part of the site will be developed as the Fairfield Freight Hub with a new railway siding.
Policy 10.1E To encourage and enable the use of walking and cycling as sustainable forms of transportation.	The new roads will have footpaths on both sides and will connect into existing pedestrian infrastructure on JB Cullen Drive. Cyclists will be able to safely share the movement lane on the new roads as is

Policies	Comments
	consistent with the ABP to the west of the site.
Policy10.1F To give effect to any relevant RMA national and regional policy statements, and take into account any other relevant national, regional and Ashburton district policy in Council policy development and decision making.	Refer to assessment above.
Objective 10.2 Transport Efficiency	
Policy 10.2A To provide for the efficiency of the transport network by implementing a policy of consolidation to avoid sprawl and unnecessary extension of urban areas.	Although this is an extension of the ABP, it is not a residential development, so sprawl is not a concern.
Policy 10.2B To promote the efficient use of all roads within the District by adopting and applying a road hierarchy, with associated standards for design, vehicle access and vehicle crossings, based on the intended function of each road.	The new roads within the site will operate as local roads and will be designed to an appropriate standard for their intended use.
Policy 10.2C To protect the efficiency of through traffic on State Highways 1 and 77, and their primary role as a carrier of through traffic, by strictly limiting vehicle access and vehicle crossings for high traffic generating activities.	This ITA has demonstrated that SH1 intersections can accommodate the additional traffic demands arising from development the PC site.
Policy 10.2D To promote the efficiency of the Main South Railway and the primary role of the rail network, by rationalising existing and minimising new level crossings, and controlling direct access over the railway via level crossings to subdivision and land use activities, where there is no alternative road access provided.	There will be no new level crossings.
Policy 10.2E To limit road congestion and loss of efficiency of adjacent roads, by ensuring off-street loading is provided for activities and by managing adverse effects on roads from land use activities and subdivision development.	This can be considered at the time of subdivision and future development on the site.
Policy 10.2F To work cooperatively with NZTA to ensure the continued, efficient functioning of State Highways 1 and 77.	Refer to modelling assessment in this ITA.
Objective 10.3 Transport Safety and Accessibility	
Policy 10.3A To maintain and, where necessary, improve safety and accessibility of the transport network within the District by adopting and applying a road hierarchy, with associated standards for design based on the intended function of each road, and including controls on trees.	The new roads will be local roads and will be designed appropriately for their intended use.

Policies	Comments
Policy 10.3B To preserve road safety and accessibility by ensuring that standards of road design, vehicle access, vehicle crossings, loading, manoeuvring, parking for people with limited mobility and cycle parking are related to the intended use of each site and the relationship to the adjoining road classification, and that visual distractions that may affect the safety of road users are avoided or mitigated e.g. lighting and advertising.	The roads will be designed in accordance with NZS4404:2010. Matters of design can be addressed at the time of subdivision.
Policy 10.3C To maintain and upgrade the existing roads in the District and provide for new roads and related facilities where these are important.	New roads will be provided to support the development. These will be designed and constructed as part of the subdivision process.
Policy 10.3D To integrate land use and transport by ensuring all substantial new developments provide access and linkages in accordance with an outline development plan or similar, and that as well as new roads, safe and attractive pedestrian and cycle routes are provided.	A new outline development plan is proposed which ensures an appropriate level of connectivity with the existing network.
Policy 10.3E To ensure that the number, location and design of vehicle crossings and the intensity and nature of activities along roads is compatible with road capacity and function, in order to ensure vehicle, cyclist and pedestrian safety, and to strictly limit the establishment of high traffic generating activities with vehicle crossings to State Highways 1 and 77.	Location and design of vehicle crossings will be reviewed at the time of subdivision / future development as appropriate.

11. Conclusion

This ITA report has assessed the transport related effects associated with a proposal to rezone 109 Works Road from Business F to Business E. This report has concluded that the transport effects arising from future development of the PC site will be acceptable, and that an appropriate layout has been developed that ensures appropriate transport connections will be achieved. The PC is also consistent with the applicable strategic planning documents.

Overall, there are no traffic or transport reasons why the PC should not be approved.

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